Graduate Council Curriculum Subcommittee
October 30, 2007
12:30 p.m., 243 MH

Agenda

1. Welcome and call to order

2. Approval of minutes from October 24, 2007

3. Addition of an MA in Applied Learning and Instruction (COEd)

4. Addition of an MS in Technology (Interdisciplinary)

5. Announcements and adjournment

6. Next meeting: November 14, 2007, 1:30 p.m., MH 243

Florida Board of Governors

Request to Offer a New Degree Program

UNIVERSITY OF CENTRAL FLORIDA
University Submitting Proposal

FALL 2008
Proposed Implementation Date

COLLEGE OF EDUCATION
Name of College or School

EDUCATIONAL STUDIES
Name of Department(s)

EDUCATION

Academic Specialty or Field

MASTER OF ARTS IN APPLIED
LEARNING AND INSTRUCTION-
130101
Complete Name of Degree
(Include Proposed CIP Code)

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

_____
Date Approved by the University Board of
Trustees

_____ _____
President   Date

_____ _____
Signature of Chair, Board of Trustees   Date

_____ _____
Vice President for Academic   Date
Affairs

Provide headcount (HC) and full-time equivalent (FTE) student estimates of majors for Years 1 through 5. HC and FTE estimates should be identical to those in Table 1. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Table 2. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 (Total E&G divided by FTE).

Implementation Timeframe	Projected Student Enrollment (From Table 1)		Projected Program Costs (From Table 2)		
	HC	FTE	Total E&G Funding	Contract & Grants Funding	E&G Cost per FTE
Year 1	10	3.75	$49,086	0	$13,090
Year 2	25	10.31			
Year 3	45	16.40625			
Year 4	55	19.6875			
Year 5	60	20.63	$100,477	0	$4,870

Revised 10/23/07

Note: This outline and the questions pertaining to each section <u>must be reproduced</u> within the body of the proposal to ensure that all sections have been satisfactorily addressed.

<u>INTRODUCTION</u>

I. Program Description and Relationship to System-Level Goals

    A. Briefly describe within a few paragraphs the degree program under consideration, including (a) level; (b) emphases, including concentrations, tracks, or specializations; (c) total number of credit hours; and (d) overall purpose, including examples of employment or education opportunities that may be available to program graduates.

This 33 semester hour MA in Applied Learning and Instruction is designed for part-time students within our metropolitan region who work in business, government and schools and are interested in advanced educational training. It is anticipated that there will be 10 students who enroll the first year and ultimately 60 students who are enrolled by the fifth year. Graduates of the program will be prepared for a wide range of professional education, government, and industry positions, conducting activities such as instruction, training, evaluation, and consulting. Housed in the Department of Educational Studies, the program will enable students to become scholars and practitioners in specialized areas of learning and instruction with potential application in post-secondary education and public and private sector instructional environments. This program also has a strong emphasis on improving learning and teaching effectiveness in the K-12 setting.

The primary objective of this MA in Applied Learning and Instruction is to prepare students to work as trainers, educators, supervisors, or advanced practitioners in academic and corporate settings with a focus on extending the knowledge base of the instructional profession by using a multi-disciplinary orientation. To this end, we offer five specialization areas for students in this program.
- Teaching
- Business/Training
- Psychological Foundations
- Instructional Design
- Program Evaluation

The first specialization, Teaching, is particularly well suited for alternatively certified teachers who seek to advance their understanding of how to promote student learning in the classroom. All graduate students will take core courses in research methods, motivation, and human development, and will be engaged in research activities and practical application of theories throughout their program. This extended work in learning and instruction will allow educators, particularly those who are alternatively certified, to extend their pedagogy and expertise, which will, by extension, improve their students' learning and academic achievement.

An MA in Applied Learning and Instruction will assist the University of Central Florida in achieving its goal of becoming a premier metropolitan university. With the initiation of this masters program, the Department of Educational Studies will offer more advanced and varied courses related to research design, data analysis and learning to a broad graduate student audience interested in improving their classroom teaching or receiving advanced training in educational psychology and it's applications to business and technology.

Given the program's emphasis on improving the knowledge base and skills in applied learning and instruction, its benefits will rapidly and significantly impact the State of Florida as well as the local community. For example, graduates in the MA in Applied Learning and Instruction will provide more highly skilled teachers to local schools, while providing business and industry with effective and knowledgeable educators and trainers.

The program will also provide advanced training in educational psychology to fulfill a need for learning and instruction professionals with expertise in educational psychology both locally and regionally (Calfee, 2006). According to the Bureau of Labor statistics (BLS), employment of psychologists is expected to grow faster than the average for all occupations through 2014 because of increased demand for psychological services in schools, social service agencies, clinics, consulting firms, and private companies. Individuals with a specialist degree or higher may enjoy the best job opportunities according to the BLS. Growing awareness of how learning integrates with social and psychological factors is increasing demand for psychologists with applications in educational and corporate settings. See http://www.bls.gov/oco/ocos056.htm for more information. The proposed program will also allow the education faculty to offer more advanced courses which will benefit students in other graduate programs within and beyond the College of Education.

Lastly, the design of this program represents a new and innovative approach to the professional development of classroom teachers and instructors within the business community. Unlike any other program in the country, program graduates will be prepared through their coursework to be excellent researchers and contributors to the developing field of learning specialists. This will be accomplished through the merging of theories from the fields of educational psychology, motivation and human learning to praxis in classroom and organizational instruction, program evaluation and instructional design. The program's applied focus will have a domain area of emphasis in both business and education. This is also unique. There are graduate programs in educational psychology, educational measurement, and teaching and learning. But, there is no program, to our knowledge, that emphasizes all three areas with an applied focus.

B. Describe how the proposed program is consistent with the current State University System (SUS) Strategic Planning Goals. Identify which goals the program will directly support and which goals the program will indirectly support. (See the SUS Strategic Plan at http://www.flbog.org/StrategicResources

Program Goals Alignment with SUS Strategic Plan Mission Statement

The SUS Mission

The Board has established specific, measurable goals related to: access to and production of degrees, meeting statewide professional and workforce needs, and building world-class academic programs and research capacity, while defining and approving university missions that meet community needs and fulfill unique institutional responsibilities.

Program Goals Alignment with SUS Strategic Plan Mission Statement

The programmatic goals for the MA in Applied Learning and Instruction are clearly aligned with the aforementioned SUS mission statement in the following ways:

* Access to Degrees.
Multiple courses within the program will have a modified online component, with courses being delivered face to face, through media-enhanced courses, and through fully on-line courses. By creating online courses, a broader cross-section of students will have greater opportunity to enroll in UCF classes, helping the university to gain world-wide recognition while achieving its diversity goals.

* Meeting Statewide Professional and Workforce Needs
The MA program in Applied Learning and Instruction is designed to positively impact Florida's professional and workforce needs. It will accomplish this by producing graduates who are:
  • Highly qualified classroom teachers;
  • Professional educators, trainers and instructional designers for business and industry;
  • Professionally trained program evaluators for schools and industry; and
  • Professional psychologists for schools, social service agencies, clinics and firms.

* Building World Class Academic Programs
The proposed program will provide a cutting-edge academic program with a cross-functional focus. By including applied elements directly related to careers in business, education and psychology, the MA in Applied Learning and Instruction is built on a multi-disciplinary base through partnerships with industry, education and business.

Currently there is no MA in the college (of the state of Florida) that provides opportunities for the diversity of students being targeted by this proposal. The new program will allow students to tailor their education to meet their personal and professional goal by building on existing coursework in the areas of learning theory and research methodology.

INSTITUTIONAL AND STATE LEVEL ACCOUNTABILITY

II.   Need and Demand

   A. **Need: Describe national, state, and/or local data that support the need for more people to be prepared in this program at this level. Reference national, state, and/or local plans or reports that support the need for this program and requests for the proposed program which have emanated from a perceived need by agencies or industries in your service area. Cite any specific need for research and service that the program would fulfill.**

   Demonstrated Need for Program (academic, state, regional, national):

The proposed MA in Applied Learning and Instruction will meet the needs of alternatively certified teachers as well as other professionals and practitioners in business and industry. Moreover the program proposal allows for the students to individualize their program emphasis, with students selecting one of the following specializations:
   - Teaching
   - Business/Training
   - Psychological Foundations
   - Instructional Design
   - Program Evaluation

The teaching specialization is particularly designed for professional educators with minimal certification, such as alternate certification. In the State of Florida the number of alternately certified teachers rose from 13,355 during the 1998-1999 school year to 17,918 during the 2003-2004 school year (The National Center for Education Information, 2007). This growing reliance on alternately certified teachers in the state of Florida comes at a time of national, state and local drives to improve the effectiveness and positive outcomes of various educational programs (such as the No Child Left Behind Act and Florida's A+ plan for K-12 schools). Unfortunately, these plans, which are focused on accountability and skilled practitioners, underscore current shortfalls in the number of available highly qualified teachers; a shortfall exacerbated by the number of alternately certified teacher currently teaching in the state and nation.

This increased dependency on alternatively certified teachers has been studied in order to understand its strength and shortcomings. For example, one "study compared the characteristics of traditionally certified (TC) and alternatively certified (AC) teachers by analyzing data from a nationally representative sample of public school teachers (N =

14,721). The sample was constructed from the Schools and Staffing Survey 1993-1994, a national survey conducted by the National Center for Education Statistics. The findings supported some of the arguments for AC, such as alleviating teacher shortages in mathematics and science and in urban schools and diversifying the teaching force by recruiting more people of minorities into teaching.

However, the findings also raised serious concerns regarding the impact of AC policy:
- AC teachers appeared to have lower academic qualifications than did TC teachers;
- AC policy failed to recruit a significant number of experienced personnel from other occupations, and a large number of fresh college graduates took advantage of AC policy to circumvent the traditional teacher education program;
- A lower percentage of AC teachers treated teaching as a lifelong career than did TC teachers; and
- A high percentage of AC teachers working in inner-city schools raised the important issue of educational equity." (Shen, 1997, pg 276)

The proposed MA in Applied Learning and Instruction has a specialization particularly designed for these minimally or alternatively certified teachers by providing them with value added advanced education courses focused on improving classroom instruction and assessment, as well as courses designed to make them more effective teachers in the non-traditional classroom setting.

The proposed MA in Applied Learning and Instruction will also meet the needs of other professionals and practitioners involved in education within business and industry. For instance a student may choose to focus on educational psychology, which is an area of developing need within the nation. According to research there is a clear need for professionals with expertise in educational psychology both locally and regionally (Calfee, 2006). According to the Bureau of Labor statistics (BLS), employment of psychologists is expected to grow faster than the average for all occupations through 2014 because of increased demand for psychological services in schools, social service agencies, clinics, consulting firms, and private companies. Individuals with a specialist degree or higher may enjoy the best job opportunities according to the BLS. Growing awareness of how learning integrates with social and psychological factors is increasing demand for psychologists with applications in educational and corporate settings. See http://www.bls.gov/oco/ocos056.htm for more information.

> **B. Demand: Describe data that support the assumption that students will enroll in the proposed program. Include descriptions of surveys or other communications with prospective students.**

A series of telephone surveys were conducted during March 2007 to assess interest in the MA in Applied Learning Instructions. Surveys were conducted among three populations; the top 125 largest revenue generating business in Orlando; principals and administrators of Orange, Seminole, and Lake County Schools, and a convenience population of UCF

undergraduate students. Survey questions and results of each survey are reported separately below:

Business Survey Results

			Yes, with financial subsidy	Yes, with tuition reimbursement	Yes, with continuing ed. credits
Number surveyed	100				
Number responded	17				
	No	**Yes, with time off**	**Yes, with financial subsidy**	**Yes, with tuition reimbursement**	**Yes, with continuing ed. credits**
Does your organization support continuing education? (Multiple Responses)	3	4	1	11	2
Rate you interest in the following topics	**High**	**Moderate**	**Low**	**None**	**No response**
Motivating the unmotivated	78%	17%	-	5%	-
Changing beliefs, behaviors, and attitudes	44%	39%	12%	5%	-
Human development	41%	29%	24%	6%	-
Theories about how people learn	24%	34%	24%	18%	-
Theories and research on how to teach	24%	34%	34%	8%	-
Research methods	6%	35%	47%	12%	-
	YES	**NO**			
Would you be interested in a program of this nature?	35%	65%	-	-	-

School Administration Survey Results

Number surveyed	120				
Number responded	14				
	No	**Yes, with time off**	**Yes, with financial subsidy**	**Yes, with tuition reimbursement**	**Yes, with continuing ed. credits**
Does your organization support continuing education? (Multiple Responses)	11	1	1	1	1
Rate you interest in the following topics	**High**	**Moderate**	**Low**	**None**	**No response**
Motivating the unmotivated	71%	22%	7%	-	-
Changing beliefs, behaviors, and attitudes	57%	36%	7%	-	-
Human development	14%	57%	29%	-	-
Theories about how people learn	29%	71%		-	-
Theories and research on how to teach (Multiple Responses)	57%	43%	7%	-	-
Research methods	43%	57%	-	-	-
	Yes	**No**			
Would you be interested in a program of this nature?	64%	36%	-	-	-

Number surveyed	142					
Number responded	142					
	Fresh	**Sophomore**	**Junior**	**Senior**	**Graduate Stud.**	
Year in School	8	17	69	45	3	-
	Yes	**No**	-	-	-	-
Are you interested in pursuing graduate studies at UCF?	58%	42%	-	-	-	-
	Very interested	**Somewhat interested**	**Not interested**			
Would you be interested in a program of this nature?	15%	61%	24%	-	-	-
	Content	**Course hours**	**Online availability**	**Length of program**	**Cost of program**	**Location**
What graduate program factors are important to you in a decision?	51%	5%	3%	5%	18%	18%

Summary and Discussion of Survey Results

Based upon the results of the surveys, there were 20 students, 6 business people, and 10 school administrators who expressed an interest in this program with no advertising. Therefore, we believe we might have an entering class of 10 or more students when we do advertise. Fifty-one percent of the students expressing interest indicated they were attracted to the program specifically because of the curriculum being proposed. In addition, 61% of the students (87) were somewhat interested in the program, and these students may become more interested as we market the program. Therefore, these surveys indicate interest in this Master's program among UCF students and local school administrators, with a moderate degree of interest among local businesses. Future marketing efforts should concentrate on targeting the existing student population and local schools for recruitment purposes.

It is important to note that the survey sample size was limited and the response rate for the telephone interviews was low. We recommend concentrating our future efforts on establishing at least one business partnership similar to the Lockheed Martin/UCF

Academy for Mathematics & Science and the T-MAST (Transition to Math & Science Teaching) programs. Of the 17 businesses that responded, 14 indicated either a financial or time off subsidy endorsing continuing education.

C. If similar programs (either private or public) exist in the state, identify the institution(s) and geographic location(s). Summarize the outcome(s) of any communication with such programs with regard to the potential impact on their enrollment and opportunities for possible collaboration (instruction and research).

When we first began developing this program, we conducted a competitor analysis to examine programs both within UCF, the State of Florida, and nationally so that we could determine if there was a need for our program and whether there was significant overlap between local or state programs and the one we were designing. We hired a graduate student to analyze local and state programs related to learning and cognition and educational psychology. He also examined national programs to identify common program elements that we might want to include in our program. From his analysis (see Appendix), we planned a series of meetings with UCF faculty and administrators who might have conflicts of interest in our program and/or who might have interest in collaborating with us on this program. First, we met with Dr. Diane Chase, the UCF coordinator for Interdisciplinary Studies, to have her determine the interest other departments might have in collaborating with faculty linked to this proposed program. Then, based on her feedback, we met with the Dr. Jaishankar Ganesh, director of graduate program in the College of Business, as well as with Dr. Robert Dipboye, chair of the Psychology Department. Dr. Ganesh was very interested in collaborating with us and saw no conflict of interest between our programs; hence, we added a specialization in business and training to the MA in Applied Learning and Instruction. Dr. Dipboye suggested we meet with the Psychology Department during a faculty meeting and present our proposal. The faculty saw no conflict of interest between our programs and were interested in collaboration between our two departments. We added a specialization area in psychological foundations due to their feedback.

Our analysis of local UCF programs indicated a potential conflict between our program and the School Psychology Program housed in the College of Education, but in several meetings and emails with the program coordinator and faculty, the School Psychology Program indicated support for our program and no conflict, though they were less sure of any areas of potential collaboration.

Next, we examined state and national programs (see Appendix). Within the State of Florida, no other universities have a similar program in Applied Learning and Instruction. The program at Florida State centers on "learning and cognition," a component of our proposed program, but they do not specifically target the alternatively certified teachers. The University of Florida has an MA in Educational Psychology degree, but that degree is specifically a research degree designed to prepare students to enter the Ph.D. in educational psychology; whereas our MA in Applied Learning and Instruction is

primarily an applied degree program targeting existing teachers, business leaders, and graduating seniors interested in applying learning and instruction principles to practice. The University of South Florida and Florida International University do not have independent programs; however, the University of South Florida is currently in the development stages of offering both MA and PhD programs in educational psychology, a clear indication of our need to remain competitive.

The University of Miami, the University of North Florida, the University of West Florida, Stetson, Barry University, The University of Phoenix and Nova Southeastern University do not currently offer graduate programs targeting the broad population that we intend to serve, nor do they offer the flexibility in student degree emphasis, thereby allowing UCF to establish a niche in this market.

Our analysis of national programs indicated that we have are offering a unique Master's degree, yet our core course offerings reflect standard practice in the field of educational psychology. Where the MA in Applied Learning and Instruction differs from national programs is in our variety of specialization courses offered, as well as our focus on application rather than only research.

> **D. Use Table 1 (A for undergraduate and B for graduate) to categorize projected student headcount (HC) and Full Time Equivalents (FTE) according to primary sources. Generally undergraduate FTE will be calculated as 40 credit hours per year and graduate FTE will be calculated as 32 credit hours per year. Describe the rationale underlying enrollment projections. If, initially, students within the institution are expected to change majors to enroll in the proposed program, describe the shifts from disciplines that will likely occur.**

The rationale for the development of graduate enrollment projections in Table 1-B, below, is based on current enrollment patterns within the College of Education. The College of Education attracts a large portion of its Masters students from its current undergraduate population (in some programs up to 70%). Thus, the headcount figures in Table 1-B reflects a conservative 50% of the projected enrollment coming from its undergraduate population. As the program is designed to attract graduates currently working in industry/business or in school/private clinics (Specializations in Business/Training, Psychological Foundations and Instructional Design), approximately 30% of the projected enrollment is expected to come from "Individuals drawn from agencies/industries in your service area", while the remainder, as a reflection of our current graduate student body, are expected to come from "Individuals who graduated from preceding degree programs at UCF or at Other Florida public universities."

TABLE 1-B
PROJECTED HEADCOUNT FROM POTENTIAL SOURCES
(MA in Applied Learning and Graduate Degree Program)

Source of Students (Non-duplicated headcount in any given year)*	Year 1		Year 2		Year 3		Year 4		Year 5	
	HC	FTE	HC	FTE	HC	FTE	HC	FTE	HC	FTE
Individuals drawn from agencies/industries in your service area (e.g., older returning students)	3	1.13	8	3.28	14	5.16	17	6.00	18	6.19
Students who transfer from other graduate programs within the university**	0	0.00	0	0	0	0	0	0	0	0
Individuals who have recently graduated from preceding degree programs at this university	5	1.88	13	5.34	23	8.44	28	9.94	30	10.31
Individuals who graduated from preceding degree programs at other Florida public universities	1	0.38	2	0.84	4	1.41	5	1.88	6	2.06
Individuals who graduated from preceding degree programs at non-public Florida institutions	1	0.38	2	0.84	4	1.41	5	1.88	6	2.06
Additional in-state residents***	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Additional out-of-state residents***	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Additional foreign residents***	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Other (Explain)***	0	0.00	0	0.00	0	0.00	0	0.00	0	0.000
Totals	**10**	**3.75**	**25**	**10.31**	**45**	**16.41**	**55**	**19.69**	**60**	**20.63**

*   List projected yearly cumulative ENROLLMENTS instead of admissions
**   If numbers appear in this category, they should go DOWN in later years.

*** Do not include individuals counted in any PRIOR category in a given COLUMN.

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E. Indicate what steps will be taken to achieve a diverse student body in this program, and identify any minority groups that will be favorably or unfavorably impacted. The university's Equal Opportunity Officer should read this section and then sign and date in the area below.

The College of Education proposes to actively recruit minority students and under-represented populations for the MA in Applied Learning and Instruction program in the following ways:

- A marketing strategy to increase diversity will be developed to include broad advertising on campus. UCF's Office of Student Involvement (http://www.osa.ucf.edu/home.html) maintains a list of minority student organizations which include the African American Student Union, the Asian Student Association, the Hispanic American Student Association, and Society for Women Educators. These groups will be the focus of a special effort to increase diversity in our program.
- The program will selectively advertise in national journals and newsletters aimed at educational professionals. These may include professional organization journals and newsletters from *The Florida Education Association*.
- Regional and local minority-targeted media sources such as *FLAVOR: Black Life and Style*, and *El Sentinel* are also important outlets to attract minority students.
- The program will maintain an active, carefully constructed website of the proposed program, faculty, research opportunities, internship sites, and career opportunities, and will provide information about admission, curriculum, and graduation requirements.
- Information announcing the program will be sent to all colleges and universities that offer undergraduate degrees and graduate certificates in Education, including those universities that have high minority student enrollment.
- UCF is collaborating with Orange County Public Schools (OCPS) in developing courses and collaborating in research projects related to Applied Learning and Instruction. This collaboration will also provide a great opportunity to recruit minority students from OCPS to apply to UCF's Applied Learning and Instruction degree program once it is in place.

Currently (Fall 2007) out of the 5,249 active students enrolled in the College of Education, 502 students are of Hispanic/Latino ethnic origin, 350 African American, 27 Native American, and 121 Asian. The gender distribution is male 958 and female 4,291. Thus it seems the College of Education attracts an adequate number of students from under-represented groups, though some gender imbalance remains, which is reflective of the profession.

_____   _____
Equal Opportunity Officer   Date

III. Budget

    A. Use Table 2 to display projected costs and associated funding sources for Year 1 and Year 5 of program operation. Use Table 3 to show how existing Education & General funds will be shifted to support the new program in Year 1. In narrative form, summarize the contents of both tables, identifying the source of both current and new resources to be devoted to the proposed program. (Data for Year 1 and Year 5 reflect snapshots in time rather than cumulative costs.)

Projected costs for the first five years of the program include adjunct replacement costs for existing faculty teaching additional sections of existing courses or new course sections for this program. This is based on an average adjunct salary of $2,500 per course replacement. This budget also includes the adjunct costs related to the reassignment of the Program Director (one class each fall semester and one class each spring semester). Other projected costs include $2,000 each year for the three years for library materials and $12,000 per year for one doctoral level graduate assistant (20 hours/week during fall, spring and summer semesters) to assist the Program Director. Other expenses ($5,000) are projected for marketing, supplies, and communications.

TABLE 2
PROJECTED COSTS AND FUNDING SOURCES

Instruction & Research Costs (non-cumulative)	Year 1						Year 5				
	Funding Source						Funding Source				
	Reallocated Base * (E&G)	Enrollment Growth (E&G)	Other New Recurring (E&G)	New Non-Recurring (E&G)	Contracts & Grants (C&G)	Subtotal E&G and C&G	Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)	Subtotal E&G and C&G
Faculty Salaries and Benefits	$8,348	$22,261	$0	$0	$0	$30,608	$0	$83,477	$0	$0	$83,477
A&P Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
USPS Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Personnel Services	$0	$0	$12,000	$0	$0	$12,000	$0	$0	$12,000	$0	$12,000
Assistantships and Fellowships	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Library	$0	$2,000	$0	$0	$0	$2,000	$0	$0	$0	$0	$0
Expenses	$5,000	$0	$0	$0	$0	$5,000	$5,000	$0	$0	$0	$5,000
Operating Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Special Categories	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs	$13,348	$24,261	$12,000	$0	$0	$49,608	$5,000	$83,477	$12,000	$0	$100,477

*Identify reallocation sources in Table 3.

**Includes recurring E&G funded costs ("reallocated base", "enrollment growth", and "other new recurring") from Years 1-4 that continue into Year 5.

Faculty and Staff Summary

Total Positions (person-years)	Year 1	Year 5
Faculty	0.17	0.83
A&P	0	0
USPS	0	0

Calculated Cost per Student FTE

		Year 1	Year 5
Total E&G Funding		$49,608	$100,477
Annual Student FTE		3.75	20.625
E&G Cost per FTE		$13,229	$4,872

Worksheet Table 2 Budget

New E&G	$36,261	New E&G	$95,477

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TABLE 3
ANTICIPATED REALLOCATION OF EDUCATION AND GENERAL FUNDS

Program and/or E&G account from which current funds will be reallocated during Year 1	Base before reallocation	Amount to be reallocated	Base after reallocation
14 26 0001 Educational Studies	$1,809,176	$0.00	$1,809,176
Totals	$1,809,176	$0	$1,809,176

Worksheet Table 3 Reallocation

To control startup costs, the program has been designed to begin the first year with courses already offered on the regular schedule (as reflected in Table 3, above). No new classes or sections will be offered until the beginning of year two when the second student cohort is enrolled, providing a large enough student base to require new sections/courses. For comparison, the fifth year budget will include $25,000 for adjunct replacement costs for existing faculty to teach the equivalent of 10 additional sections or new course sections. This amount is equal to approximately 1.4% of the total Educational Studies Department budget for one year.

> **B. If other programs will be impacted by a reallocation of resources for the proposed program, identify the program and provide a justification for reallocating resources. Specifically address the potential negative impacts that implementation of the proposed program will have on related undergraduate programs (i.e., shift in faculty effort, reallocation of instructional resources, reduced enrollment rates, greater use of adjunct faculty and teaching assistants). Explain what steps will be taken to mitigate any such impacts. Also, discuss the potential positive impacts that the proposed program might have on related undergraduate programs (i.e., increased undergraduate research opportunities, improved quality of instruction associated with cutting-edge research, improved labs and library resources).**

While some undergraduate and/or graduate courses in the Educational Studies Department may initially be impacted through the assignment of more adjuncts (to replace faculty reallocated to this new program), this will not begin until year two of the program, and will have negligible impact until year three. It is anticipated that this impact will be overcome by the hiring of new full-time faculty to teach these undergraduate classes once the hiring freeze is lifted. Potential positive impacts to undergraduate education may occur from opportunities to participate in research projects generated from this new program, as well as access to augmented library resources.

> **C. Describe other potential impacts on related programs or departments (e.g., increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the proposed major).**

As reflected in budget calculations, two new course sections from the Educational Research, Technology and Leadership Department (EDF 6481 and EME 6613) will be added in years three and four of the program. This should be counterbalanced by earned SCH. As it is unclear what specializations will be selected by enrolled students, no immediate predictions can be made regarding the need for additional sections of specialization electives, thought it is not anticipated that any one course would be heavily impacted given the number of electives being offered.

D. Describe what steps have been taken to obtain information regarding resources (financial and in-kind) available outside the institution (businesses, industrial organizations, governmental entities, etc.). Describe the external resources that appear to be available to support the proposed program.

At this point, internal resources from the College of Education and Department of Educational Studies will be used for this program, though it is anticipated that external funding will be sought from government and foundation sources, as has been done (successfully) with multiple programs within the College (such as the Lockheed Martin Academy, the T-MAST Program and the Toni Jennings Exceptional Education Institute in the College of Education's Teaching Academy).

IV. Projected Benefit of the Program to the University, Local Community, and State

Use information from Table 1, Table 2, and the supporting narrative for "Need and Demand" to prepare a concise statement that describes the projected benefit to the university, local community, and the state if the program is implemented. The projected benefits can be both quantitative and qualitative in nature, but there needs to be a clear distinction made between the two in the narrative.

An MA in Applied Learning and Instruction will assist the University of Central Florida in achieving its goal of becoming a premier metropolitan university. As is common at other such universities, UCF's Department of Educational Studies offers courses that are taken by students in other departments in the College of Education and throughout the university. With the initiation of this masters program, the Department of Educational Studies will offer more advanced and varied courses related to research design, data analysis and learning to a broad graduate student audience interested in improving their classroom teaching or receiving advanced training in educational psychology and it's applications to business and technology.

Given the program's emphasis on improving the knowledge base and skills in applied learning and instruction, its benefits will rapidly and significantly impact the State of Florida as well as the local community. For example, graduates in the MA in Applied Learning and Instruction will provide more highly skilled teachers to local schools, while providing business and industry with effective and knowledgeable educators and trainers.

The program will also provide advanced training in educational psychology to fulfill a need for learning and instruction professionals with expertise in educational psychology both locally and regionally (Calfee, 2006). According to the Bureau of Labor statistics (BLS), employment of psychologists is expected to grow faster than the average for all occupations through 2014 because of increased demand for psychological services in schools, social service agencies, clinics, consulting firms, and private companies. Individuals with a specialist degree or higher may enjoy the best job opportunities

according to the BLS. Growing awareness of how learning integrates with social and psychological factors is increasing demand for psychologists with applications in educational and corporate settings. See http://www.bls.gov/oco/ocos056.htm for more information. The proposed program will also allow the education faculty to offer more advanced courses which will benefit students in other graduate programs within and beyond the College of Education.

V.   Access and Articulation – Bachelor's Degrees Only

    A. If the total number of credit hours to earn a degree exceeds 120, provide a justification for an exception to the policy of a 120 maximum and submit a request to the BOG for an exception along with notification of the program's approval. (See criteria in BOG Regulation 6C-8.014)

Not applicable. This is a Masters Degree Program

    B. List program prerequisites and provide assurance that they are the same as the approved common prerequisites for other such degree programs within the SUS (see Common Prerequisite Manual http://www.facts.org). The courses in the Common Prerequisite Counseling Manual are intended to be those that are required of both native and transfer students prior to entrance to the major program, not simply lower-level courses that are required prior to graduation. The common prerequisites and substitute courses are mandatory for all institution programs listed, and must be approved by the Articulation Coordinating Committee (ACC). This requirement includes those programs designated as "limited access."

    If the proposed prerequisites are not listed in the Manual, provide a rationale for a request for exception to the policy of common prerequisites. NOTE: Typically, all lower-division courses required for admission into the major will be considered prerequisites. The curriculum can require lower-division courses that are not prerequisites for admission into the major, as long as those courses are built into the curriculum for the upper-level 60 credit hours. If there are already common prerequisites for other degree programs with the same proposed CIP, every effort must be made to utilize the previously approved prerequisites instead of recommending an additional "track" of prerequisites for that CIP. Additional tracks may not be approved by the ACC, thereby holding up the full approval of the degree program. Programs will not be entered into the State University System Inventory until any exceptions to the approved common prerequisites are approved by the ACC.

Not applicable. This is a Masters Degree Program

    C. If the university intends to seek formal Limited Access status for the proposed program, provide a rationale that includes an analysis of diversity issues with respect to such a designation. Explain how the university will ensure that community college transfer students are not disadvantaged by the Limited Access

status. NOTE: The policy and criteria for Limited Access are identified in BOG Regulation 6C-8.013. Submit the Limited Access Program Request form along with this document.

Not applicable. This is a Masters Degree Program

D. If the proposed program is an AS-to-BS capstone, ensure that it adheres to the guidelines approved by the Articulation Coordinating Committee for such programs, as set forth in Rule 6A-10.024 (see Statewide Articulation Manual http://www.facts.org). List the prerequisites, if any, including the specific AS degrees which may transfer into the program.

Not applicable. This is a Masters Degree Program

INSTITUTIONAL READINESS

VI. Related Institutional Mission and Strength

    A. Describe how the goals of the proposed program relate to the institutional mission statement as contained in the SUS Strategic Plan and the University Strategic Plan.

Program Goals Alignment with UCF Strategic Plan Mission Statement

UCF's Mission
The University of Central Florida is a public, multi-campus, metropolitan research university, dedicated to serving its surrounding communities with their diverse and expanding populations, technological corridors, and international partners. The mission of the university is to offer high-quality undergraduate and graduate education, student development, and continuing education; to conduct research and creative activities; to provide services that enhance the intellectual, cultural, environmental, and economic development of the metropolitan region, address national and international issues in key areas, establish UCF as a major presence, and contribute to the global community.

Service to Surrounding Communities
This program, oriented towards those in our community who want better educational training skills in K-12 classrooms or in business, is designed to deliver on UCF's mission of providing services that enhance the intellectual development and contributions of those in our metropolitan region. The proposed degree is related to UCF's Mission, Vision, Goals, and Strategic Initiatives, and the curriculum is timely and important for the growth of a metropolitan research university. For example, one UCF goal, which is to increase the quantity and quality of education in instructional design, using cutting-edge technology, is embedded within the new program. Not only will the curriculum in this program provide an excellent educational experience for UCF students, but the

collaborative research will also continue to enhance the national and international prominence and visibility of UCF in this program.

High Quality Graduate Education
The design of the program represents a new and innovative approach to the professional development of classroom teachers and trainers within the business community. Unlike any other program in the country, our graduates would be prepared through their coursework to be excellent researchers and contributors to the developing field of learning specialists. This will be accomplished through the merging of theories from the fields of educational psychology, motivation and human learning to praxis in classroom and organizational instruction, program evaluation and instructional design. Our applied focus will have a domain area of emphasis in both business and education. This is also unique. There are graduate programs in educational psychology, educational measurement, and teaching and learning. But, there is no program, to our knowledge, that emphasizes all three areas with an applied focus.

Services to Enhance Intellectual and Economic Development
The MA in Applied Learning and Instruction has strong potential to become a cross-functional program. Elements of the program will include application to careers in business, education, and psychology. Based upon the multi-disciplinary focus, partnerships with Organizational/Industrial Education and Business programs would be likely. These partnerships would be instrumental in marketing the proposed degree to both perspective educators as well as those people in business interested in applying learning psychology to organizational interventions. Businesses may also wish to establish scholarships to assist students in funding their education providing additional revenue to the University.

Currently there is no MA within UCF's College of Education (or the state of Florida) that provides opportunities for the diversity of students being targeted by this proposal. The new program will allow students to tailor their education to meet their personal and professional goal by building on existing coursework in the areas of learning theory and research methodology.

> **B. Describe how the proposed program specifically relates to existing institutional strengths, such as programs of emphasis, other academic programs, and/or institutes and centers.**

The proposed MA program in Applied Learning and Instruction reflects and builds upon the current strengths within the College of Education and the Department of Educational Studies. For example, the College recently received an award from AACTE (American Association of Colleges of Teacher Education) for its partnerships. These partnerships included a "2 plus 2" program with Osceola County Public Schools and Valencia Community College to provide an on-site teacher education program for school paraprofessionals, and partnerships which led to the Lockheed Martin Science and Math Academy and the T-MAST program. Moreover, the College of Education has developed

an Academy for Teaching and Leadership, with the help, support and direction of the community. With the development of this Academy the College attracted state support and reoccurring funding for the Toni Jennings Exceptional Education Institute, which is now permanently housed within the Academy. The philosophy behind the proposed MA in Applied Learning and Instruction is based, in part, on this College record of working for and with the community to produce rigorous programs and high-quality graduates.

C. Provide a narrative of the planning process leading up to submission of this proposal. Include a chronology (table) of activities, listing both university personnel directly involved and external individuals who participated in planning. Provide a timetable of events necessary for the implementation of the proposed program.

The process for planning and development the MA in Applied Learning and Instruction was deliberate, persistent and long-term. The initial idea was conceived in September 2006 with the full proposal coming to fruition in October of 2007. Building upon the need for more highly skilled teachers, professional trainers and instructors in industry, as well as educational psychologists and researchers, faculty within the Department of Educational Studies submitted a letter of interest and white papers early in the 2006 Fall semester. With the help of the College of Education's initiative funding (internal funding for developing new programs in the COE) , faculty proceeded with the development of the program through a competitor analysis (where the proposed program was compared with other internal, state and national programs) and a needs assessment (measuring needs and interest in relevant educational and business settings as well as on the UCF campus, see Appendix). Faculty applied for and received UCF Faculty Center for Teaching and Learning funds to participate in the Summer 2007 program development project where course descriptions and syllabi were drafted. From late Spring through Fall 2007, faculty, in consultation with College administration, finalized the conceptualization and program of study for the proposed MA in Applied in Learning and Instruction.

Planning Process

Tasks	Person Responsible	Due Date
Preliminary planning sessions	Karen Biraimah/Michele Gill	March 2004
Discussion with Bob Hoffman during interview process for Assistant Professor.	Karen Biraimah	January 2006
Submitted letter of interest in creating the MA in Applied Learning and Instruction to department chair, Karen Biraimah.	Bob Hoffman/Michele Gill	9/7/2006

Submitted white paper overview of the MA in Applied Learning and Instruction degree program to department chair, Karen Biraimah	Bob Hoffman/Michele Gill	10/12/2006
Idea for Program Conceived	Bob Hoffman/Michele Gill	Fall 2006
Competitor analysis		
UCF program analysis	Michele Gill/Bob Hoffman	1/16/07
Comparison with other programs	Michele Gill	Jan – Feb. 2007
Internal program analysis	Bob Hoffman	1/23/07
Statewide	Bob Hoffman	1/23/07
National	Bob Hoffman	1/23/07
Needs assessment		
Drafted corporate letter	Bob Hoffman/Michele Gill	1/23/07
Drafted administrator letter	Bob Hoffman/Michele Gill	1/23/07
Identified target companies	Bob Hoffman/Michele Gill	1/23/07
Mailed letters	Bob Hoffman/Michele Gill	1/30/07
Developed program interest		
Scheduled appointments with business/other Departments	Bob Hoffman/Michele Gill	2/12/07-2/16/07
Developed presentation PowerPoint	Bob Hoffman/Michele Gill	2/13/07
Met with business contacts	Bob Hoffman/Michele Gill	2/20/07-3/09/07
Drafted student survey	Bob Hoffman/Michele Gill	2/13/07
Distributed student survey	Graduate student	2/20/07-3/09/07
Compiled/reported student survey results	Graduate student	3/20/07
Applied for summer conference	Michele Gill	2/27/07
Program development		
Course listing (tentative)	Bob Hoffman/Michele Gill	2/13/07
Course descriptions	Bob Hoffman/Michele Gill	3/27/07

Syllabi	Bob Hoffman/Michele Gill	4/30-5/4/07 (summer conf)
Prepare plan document		
First draft	Bob Hoffman/Michele Gill	4/17/07
Second draft	Bob Hoffman/Michele Gill	4/23/07
Revised plan of study during summer Conference	Bob Hoffman/Michele Gill	4/30-5/4/07
Final draft sent to Karen Biraimah, Department Chair	Bob Hoffman/Michele Gill	5/07/07
Program approval meetings		
Met with College of Education Dean	Sandra Robinson, Bob Hoffman, Michele Gill, Grant Hayes & Louis Nadelson	09/06/07
Met with Vice-Provost and Dean of Graduate Studies	Bob Hoffman, Michele Gill, Grant Hayes, Patricia Bishop & Louis Nadelson	10/11/07

Events Leading to Implementation

Date	Implementation Activity

2007	Proposal meetings including budget discussions for the proposed degree were held on the following dates with Dr. Bishop, attended by Drs. Hayes, Nadelson, Gill, Hoffman and Biraimah: Oct 11, 2007.
	• Early Fall
	   o Seek approval by Departments and College
	   o Seek approval by UCF's Graduate Council
	• Late Fall
	   o Seek approval from the Board of Trustees

2008	Spring – Recruit students, develop program webpage, develop program handbook, appoint program director, develop recruiting materials, schedule courses
2008	Fall – First courses offered
2010	Spring - First graduates of MA Degree in Applied Learning and Instruction program (including those who already have a alternative certificate in education)

VII.   Program Quality Indicators - Reviews and Accreditation

Identify program reviews, accreditation visits, or internal reviews for any university degree programs related to the proposed program, especially any within the same academic unit. List all recommendations and summarize the institution's progress in implementing the recommendations.

The Professional Education Unit (PEU) at the University of Central Florida is nationally accredited by the National Council for Accreditation of Teacher Education (NCATE). The PEU consists of all academic programs that prepare teachers and other education professionals to work in P-12 school settings. This includes programs that prepare candidates for initial teacher certification as well as advanced programs for certified teachers and other education professions. The new program proposed in this Request to Offer a New Degree Program is designed as an advanced program for certified teachers. Preliminary results of the most recent NCATE reaccreditation visit (spring 2007) cited one area for improvement regarding advanced programs: "(Advanced Preparation) Data used for assessment of candidates in programs for teachers do not consistently identify proficiencies and criteria." The College of Education has implemented a curriculum & assessment mapping system that identifies the core curriculum content in a program and indicates where applicable competencies are formatively and summatively assessed in the program. A curriculum & assessment mapping template has been designed for consistent implementation across programs, and program-level maps are currently being compiled by program faculty.

All programs housed in the Department of Educational Studies, the academic unit submitting this proposal, underwent formal Program Review during 2006-2007. A number of other programs in the College also underwent Program Review last year. All remaining programs in the College are currently undergoing Program Review (2007-2008). While recommendations resulting from last year's Program Reviews are tentative pending the completion of Program Reviews for all programs in the College of Education, the following preliminary recommendations are relevant to this proposal:
- Increase graduate enrollment.
- Actively recruit from "out of field" teachers and under-prepared teachers in need of professional development. With a demand for new teachers that far exceeds the production capacity of current state-approved post-secondary teacher education programs, additional and often expedited routes to teacher certification are growing exponentially. This, and the continued hiring of "out of field" teachers will generate a significant population of under-prepared teachers in need of professional development. Many will choose to acquire needed knowledge and skills in a graduate program of study.
- Develop two new master's degree programs to meet the needs of professionally and alternatively certified teachers:
  - Urban Education
  - Applied Learning and Instruction

VIII.   Curriculum

A. Describe the specific expected student learning outcomes associated with the proposed program. If a bachelor's degree program, include a web link to the Academic Learning Compact or include the document itself as an appendix.

The MA in Applied Learning and Instruction degree program is designed for students from diverse academic majors who have an interest in the application of psychological theories and research to improve learning, instruction, and training in a variety of instructional contexts. Graduates of the program will be prepared for a wide range of professional education, government, and industry positions, conducting activities such as instruction, training, evaluation, and consulting.

Students are able to tailor the program to meet their particular needs and interests by choosing among a large variety of courses for their concentration, including courses in teaching, instructional design, program evaluation, and psychological foundations.

Specialization and core courses are offered in the areas of the psychology of teaching and learning, motivation, human development, measurement, and research methodology. All students will be required to complete a comprehensive examination before completing the program. For students intending to pursue advanced education, a master's thesis option is available to facilitate entry into a doctoral program in education.

In anticipation of approval for this new program, the following Institutional Effectiveness Matrix has been constructed.

Institutional Effectiveness Matrix
MA Applied Learning and Instruction

Mission: To meet the challenges of education in Central Florida, the MA in Applied Learning and Instruction is committed to providing leadership and scholarship in our field, collaborating with community partners, and educating well-rounded instruction professionals who understand how to create and deliver instruction while achieving effective learning outcomes. The MA in Applied Learning and Instruction prepares degreed individuals with advanced certification in a particular teaching area while concentrating on an area of specialized focus in teaching, business, psychological foundations, instructional design or business.

Outcomes	Measures
1. Graduates will demonstrate knowledge and skills needed in their area of specialization	1.1 Ninety percent of graduate students will complete a culminating experience with a "pass" as judged by a panel of program area faculty on the first attempt. Culminating experiences may include a comprehensive examination or creation of a master's thesis
	1.2 One hundred percent of the MA in Applied Learning and Instruction graduates will maintain a GPA of 2.5 or better
2. Upon graduation individuals will demonstrate the characteristics of a competent educator	2.1. One hundred percent of the MA in Applied Learning and Instruction graduates will demonstrate content proficiency by completing a conference proposal or presentation
	2.2 Ninety percent of program graduates will prepare a professional manuscript or publication based upon the results of their proposal/presentation or an independently designed program of research
3. Program graduates will be well equipped to meet the profession demands of teaching in either an educational, business, or evaluation position	3.1 After completing their first full year of employment, ninety percent of MA in Applied Learning and Instruction graduates for whom follow-up surveys are returned will be rehired or eligible for rehire according to school or industry administrators.
	3.2 Ninety percent or greater of program graduates who return surveys will indicate that the MA in Applied Learning and Instruction has prepared them to be more effective in their current roles

Revised 10/23/07

B. Describe the admission standards and graduation requirements for the program.

In addition to the general admission requirements, applicants must provide:

1. A baccalaureate degree or equivalent from a regionally accredited institution or from a recognized foreign institution, GPA of 3.0 or higher (on a 4.0 maximum) while registered as an upper-division undergraduate student (normally based on the last sixty attempted semester hours), and competitive Graduate Record Examination (GRE) (in lieu of the GRE, a GMAT score may be used for admission consideration).

2. International students must demonstrate their proficiency in the English language. International students, except those who are from countries where English is the only official language or those who have earned a degree from a regionally accredited U.S. institution, are required to submit a score on the Test of English as a Foreign Language (TOEFL) before they can be admitted to the university. A computer-based TOEFL score of 220 or 80 on the internet-based TOEFL (or equivalent score on the paper-based test) is required unless otherwise specified by the program.

3. A one-page statement of professional interests and goals that addresses why the candidate is interested in this degree.

4. A sample of scholarly or professional writing sample.

Applications for admission will be considered once a year. The deadline for receipt of applications is February 1.

Program completion requirements (credit hours, grade point average, subject matter distribution, prerequisites).

1.   Residence Requirement

Once admitted, the student is expected to enroll continuously, excluding summer sessions. If a program of study must be interrupted, the student may apply for leave status not to exceed one calendar year.

2.   Publication Requirement

By the end of the fourth semester, each student must satisfy a scholarly product requirement (Review I). This requirement can be met in one of two ways: students could submit a research study to a refereed journal; or submit a proposal for a presentation at an annual conference of a national or local organization. The student must be primarily responsible for conceptualizing, carrying out, and

reporting the results in both of these options. The student is responsible for obtaining approval of the product from his or her master's committee.

3. Comprehensive Examination

If electing the Applied track, the student must take the comprehensive examination (Review II). This second formal assessment is a comprehensive examination that will focus on areas of knowledge that are most relevant to the student's thesis topic. The student and his/her committee will determine the content of this examination. In general, the format will depart from the traditional comprehensive examination format in that it will focus on in-depth reading and writing directly related to the student's thesis topic rather than on the student's mastery of previously learned core information.

4. Thesis Proposals and Defenses

If electing the Research track, and after successfully completing Review I (i.e., satisfying the scholarly product requirement), students can then submit a thesis proposal to their master's committee and submit the accompanying "Thesis Prospectus" form to the Graduate College. The master's committee will meet and determine whether to accept or reject the prospectus. A prospectus can be accepted provisionally given that the student follows the committee's suggestions in the thesis. Upon completion of the full thesis, a defense will be scheduled. This defense will be scheduled and conducted in accordance with the Graduate College's policies for thesis and thesis completion.

C. Describe the curricular framework for the proposed program, including number of credit hours and composition of required core courses, restricted electives, unrestricted electives, thesis requirements, and dissertation requirements. Identify the total numbers of semester credit hours for the degree.

The MA in Applied Learning and Instruction is a 33 semester credit hour program. The program has a required core of five three-semester-hour classes focusing on educational psychology and graduate research methods. Students will select one 12 semester credit hours specialization from among Teaching, Business/Training, Psychological Foundations, Instructional Design or Program Evaluation. The program concludes with s six semester credit hour research component.

AREA A: CORE—15 Credit Hours

- EDF 6481   Fundamentals of Graduate Research in Education (3 credit hours)

- EDP 6XXX   Applied Learning and Instruction Seminar I (3 credit hours)

- EDP 6XXX   Applied Learning and Instruction Seminar II (3 credit hours)

- EDF 6216   Motivation in Learning and Performance (3 credit hours)

- EDF 6155   Lifespan Human Development and Learning (3 credit hours)

AREA B: SPECIALIZATION – 12 Credit Hours

Specialization courses may be taken within one specialization, or from multiple specializations. One feature of the program is to allow students the choice of taking specialization courses in multiple areas. The purpose of this choice is to provide course offerings which appeal to student interest, but concurrently facilitate depth of knowledge in a particular discipline. Thus, the student, program director and student advisors will together determine a course of study to meet the student's needs while simultaneously focused on developing core knowledge in a specific area with the advisor's approval. In addition, the adviser may approve courses taken as part of a UCF certificate program for this area of the M.A. (up to 12 credit hours). The adviser must approve all specialization courses.

1. Teaching

- EDF 6237   Principles of Learning and Introduction to Classroom Assessment
- EDF 6727   Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- TSL 6250   Applied Linguistics in ESOL (3 credit hours)
- TSL 5373   Teaching Language to Minority Students in K-12 Classrooms (3 credit hours)
- RED 5147   Developmental Reading (3 credit hours)
- RED 6116   Trends in Reading Education (3 credit hours)
- EDG 6415   Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6233   Analysis of Classroom Teaching (3 credit hours)
- ESE 6235   Curriculum Design (3 credit hours)

- EDA 6931   Contemporary Issues in Educational Leadership (3 credit hours)
- EDA 6502   Organization and Administration of Instructional Programs (3 credit hours)
- EEX 6061   Instructional Strategies PreK-6 (3 credit hours)
- EEX 6065   Programming for Students with Disabilities at the Secondary Level (3 credit hours)
- EEX 6524   Organization and Collaboration in Special Education (3 credit hours)
- EEX 6612   Methods of Behavioral Management (3 credit hours)

2.   Business/Training
- INP 6103   Applied Organizational Psychology I (3 credit hours)
- INP 6072   Applied Research Methods in Industrial/Organizational Psychology (3 credit hours)
- INP 6094   Current Topics in Industrial/Organizational Psychology (3 credit hours)
- MAN 6245   Organizational Behavior and Development (3 credit hours)
- MAN 6285   Change Management (3 credit hours)

3.   Psychological Foundations
- DEP 5057   Developmental Psychology (3 credit hours)
- EDF 6259   Learning Theories Applied to Classroom Instruction and Management (3 credit hours)
- EDF 6141   Human Intelligence (3 credit hours)
- SPS 6801   Developmental Bases of Diverse Behaviors (3 credit hours)
- SPS 6225   Behavioral and Observational Analysis of Classroom Interactions in Schools (3 credit hours)
- EDG 6431   Guiding Human Relations I (3 credit hours)
- EDG 6432   Guiding Human Relations II (3 credit hours)

4.   Instructional Design
- EME 6607   Planned Change in Instructional Technology (3 credit hours)
- EME 6602   Integrating Technology into Curriculum (3 credit hours)
- EME 6601   Instructional Simulation Design (3 credit hours)
- EME 6457   Distance Education (3 credit hours)

5.   Program Evaluation
- EDF 6401   Statistics for Educational Data (3 credit hours)
- EDF 6432   Measurement and Evaluation in Education (3 credit hours)

- EDG 6285   Evaluation of School Programs (3 credit hours)
- EDF 6467   Mixed Methods for Evaluation in Educational Settings (3 credit hours)

AREA C: RESEARCH COMPONENT - 6 credit hours

- EDF 6971   Thesis (6 credit hours)
                or
- EDF 6918   Directed Research (3 credit hours)

- EME 6613   Instructional Systems Design (3 credit hours)

D. Provide a sequenced course of study for all majors, concentrations, or areas of emphasis within the proposed program.

1st year – Fall Semester
- EDF 6481 Fundamentals of Graduate Research in Education
- EDP 6XXX Applied Learning and Instruction Seminar I

1st year – Spring Semester
- EDP 6XXX Applied Learning and Instruction Seminar II
- EDF 6216 Motivation in Learning and Performance

1st year—Summer Semester
- EDF 6155 Lifespan Human Development and Learning

2nd year – Fall Semester
- Specialization 1
- Specialization 2

2nd year – Spring Semester
- Specialization 3
- Specialization 4

3rd year – Fall Semester
- EME 6613 Instructional Systems Design OR
- EDF 6971 Thesis

3rd year – Spring Semester
- EDF 6918 Directed Research OR
- EDF 6971 Thesis

Anticipated courses, students (head count) and credits

NOTE: The sequence for the first program cohort has been modified to reduce the impact of program implementation. By adjusting the course sequence we have created a condition in which core classes overlap in year 1 and 2 which effectively increases the number of students enrolling in these courses.

Year 1	Year 2	Year 3	Year 4	Year 5
10 students - 12 Credits Fall Semester • EDF 6481 Fundamentals of Graduate Research in Education • Specialization Elective (3 hrs) **Spring Semester** • Specialization Elective (3 hrs) • Specialization Elective (3 hrs)	**10 students - 15 Credits** **Fall Semester** • EDF 6155** Lifespan Human Development and Learning • EDP 6XXX* Applied Learning and Instruction Seminar I **Spring Semester** • EDF 6216** Motivation in Learning and Performance • EDP 6XXX* Applied Learning and Instruction Seminar II **Summer Semester** • Specialization Elective (3 hrs)	**10 students - 6 Credits** **Fall Semester** • EDF 6918 Directed Research • EME 6613 Instructional Systems **OR** • EDF 6971 Thesis	**0**	**0**

Year 1	Year 2	Year 3	Year 4	Year 5
	15 students - 12 Credits	**15 students - 15 Credits**	**15 students - 6 Credits**	**0**
	Fall Semester	**Fall Semester**	**Fall Semester** • EDF 6918 ** • EME 6613**	
	• EDF 6155** Lifespan Human Development and Learning	• EDF 6481** Fundamentals of Graduate Research in Education	**OR**	
	• EDP 6XXX* Applied Learning and Instruction Seminar I	• Specialization Elective (3 hrs)	• EDF 6971 Thesis**	
	Spring Semester	**Spring Semester**		
	• EDF 6216** Motivation in Learning and Performance	• Specialization Elective (3 hrs)		
	• EDP 6XXX* Applied Learning and Instruction Seminar II	• Specialization Elective (3 hrs)		
		Summer Semester		
		• Specialization Elective (3 hrs)		

Year 1	Year 2	Year 3	Year 4	Year 5
			20 students - 12 Credits	**20 students - 15 Credits**
			Fall Semester	**Fall Semester**
			• EDF 6155** Lifespan Human Development and Learning	• EDF 6481** Fundamentals of Graduate Research in Education
				• Specialization Elective (3 hrs)
			• EDP 6XXX* Applied Learning and Instruction Seminar I	**Spring Semester**
				• Specialization Elective (3 hrs)
			Spring Semester	• Specialization Elective (3 hrs)
			• EDF 6216** Motivation in Learning and Performance	**Summer Semester**
				• Specialization Elective (3 hrs)
			• EDP 6XXX* Applied Learning and Instruction Seminar II	**20 students - 12 Credits**
				Fall Semester
				• EDF 6155** Lifespan Human Development and Learning
				• EDP 6XXX* Applied Learning and Instruction Seminar I
				Spring Semester
				• EDF 6216** Motivation in Learning and Performance
				• EDP 6XXX* Applied Learning and Instruction Seminar II

E. Provide a one- or two-sentence description of each required or elective course.

It should be noted that the Department of Educational Studies is well prepared to launch this program as only two new courses are being developed for the program:

- EDP 6XXX Applied Learning and Instruction Seminar I

- EDP 6XXX Applied Learning and Instruction Seminar II

Thus it is anticipated that the program can be activated with little preparation downtime. Moreover, to extend its outreach capacity, many of the program's courses will be delivered as either an "M" (Media Enhanced) course or as a "W" (On-line) course. The following list of classes indicates the mode of instruction. (No "M" or "W" following the course description indicates a "face to face" course.)

Required or elective courses

a. EDF 6481 Fundamentals of Graduate Research in Education. (3 credit hours) Review and critique of research literature, use of library resources for educational research, and introduction to the concepts of research design and data analysis.

b. EDP 6XXX Applied Learning and Instruction Seminar I. (3 credit hours) An overview of contemporary theories and research related to issues in human learning and instruction with an emphasis on practical applications for educational and workplace settings. This course will focus on affective and motivational issues surrounding learning and instruction. **(M)**

c. EDP 6XXX Applied Learning and Instruction Seminar II. (3 credit hours) A continuation of the Applied Learning and Instruction Seminar I with an emphasis on cognition, critical thinking, problem solving, individual differences, and assessment of learning outcomes. **(M)**

d. EDF 6216 Motivation in Learning and Performance. (3 credit hours) An examination of theory and research in academic motivation with an emphasis on practical applications for educational and work place settings. **(M)**

e. EDF 6155 Lifespan Human Development and Learning. (3 credit hours) Research in childhood, adolescent, and adult development relevant to contemporary American education. Emphasis on application of theory to educational practice. **(W)**

Specializations

Teaching

- EDF 6237 Principles of Learning and Introduction to Classroom Assessment. (3 credit hours) Students will examine prominent developmental and learning theories in-depth and their implications for instruction and assessment. Key issues in educational psychology will be explored. **(W)**

- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education. (3 credit hours) Analysis of critical issues in education including social, ethical, legal, and safety concerns which impact the quality of education. **(W)**

- TSL 6250 Applied Linguistics in ESOL. (3 credit hours) Applying linguistics, psycholinguistics, and sociolinguistics to teaching English as a second language with emphasis on pronunciation, intonation, structural analysis, morphophonemic, and decoding from print to sound.

- TSL 5373 Teaching Language to Minority Students in K-12 Classrooms. (3 credit hours) Florida standards regarding cross-cultural communication, ESOL curriculum, and materials, ESOL methodology, testing and evaluation of ESOL students, applied linguistics.

- RED 5147 Developmental Reading. (3 credit hours) Principles, procedures, organization, and current practices in the elementary reading program. Materials and methods of instruction. **(W)**

- RED 6116 Trends in Reading Education. (3 credit hours) Analysis of historical development and current trends; management systems; instructional strategies and investigation of research.

- EDG 6415 Principles of Instruction and Classroom Management. (3 credit hours) Students are exposed to various methods of delivering instruction, as well as organizational and management skills. Students microteach and view lessons to develop reflective practices. **(W)**

- EDF 6233 Analysis of Classroom teaching (3 credit hours) Analyses of effective teaching practices and their effect on classroom instruction and learning.

- ESE 6235 Curriculum Design. (3 credit hours) Goal analysis, task analysis, needs assessment, and writing performance objectives for developing courses of study.

- EDA 6931 Contemporary Issues in Educational Leadership. (3 credit hours) A capstone course intended to stimulate inspection, analysis, and dialogue regarding

contemporary issues and tensions facing educational leaders and educational systems.

- EDA 6502 Organization and Administration of Instructional Programs. (3 credit hours) Study of school organization, administration, and management with emphasis toward organizational theory, leadership, evaluation, and change and improvement strategies.

- EEX 6061 Instructional Strategies PreK-6. (3 credit hours) A varying exceptionalities strategies (SLD, EH, MH) course using a cross-categorical model. The course is concerned with the pre-k handicapped child through grade 6. A required field experience must be completed with the class depending on prior experience.

- EEX 6065 Programming for Students with Disabilities at the Secondary Level. (3 credit hours) Addresses instructional needs of secondary students with disabilities. It provides information on instruction, academic and social-personal skills, and transition planning.

- EEX 6524 Organization and Collaboration in Special Education. (3 credit hours) An examination of research and current literature dealing with some of the critical issues in all areas of special education.

- EEX 6612 Methods of Behavioral Management. (3 credit hours) Analysis of the principles of behavior management and precision teaching and application of these principles to the solving of classroom management problems

Business/Training

- INP 6103 Applied Organizational Psychology I. (3 credit hours) Graduate standing in the master's program in Industrial and Organizational Psychology. Theory and practice of industrial and organizational psychology, focusing on individual characteristics (e.g., work motivation, attitude theory, and work stress).

- INP 6072 Applied Research Methods in Industrial/Organizational Psychology. (3 credit hours) Applied/practical issues in the conduct of research in organizational settings, including planning and implementation, experimental and quasi-experimental designs, and data analysis.

- INP 6094 Current Topics in Industrial/Organizational Psychology. (3 credit hours) A review of the theoretical and empirical literature relevant to selected topics in Industrial and Organizational Psychology.

- MAN 6245 Organizational Behavior and Development. (3 credit hours) The analysis of human behavior in organizations in terms of the individual, small group, inter-group relationships, and the total organization.

- MAN 6285 Change Management. (3 credit hours) Course designed to familiarize students with change management processes and interventions.

Psychological Foundations

- DEP 5057 Developmental Psychology. (3 credit hours) Psychological aspects of development including intellectual, social, and personality factors.

- EDF 6259 Learning Theories Applied to Classroom Instruction and Management. (3 credit hours) Study of strategies of classroom management that result in optimum learning and a minimum of behavior problems.

- EDF 6141 Human Intelligence. (3 credit hours) Graduate standing and a course in learning. An examination of theory and research on human intelligence and its relation to learning and cognitive performance with emphasis on implications for educational and workplace settings.

- SPS 6801 Developmental Bases of Diverse Behaviors. (3 credit hours) The major social and educational policy concerns posed by developmental and cultural diversity in our society, with implications for teaching, learning and intervention.

- SPS 6225 Behavioral and Observational Analysis of Classroom Interactions in Schools. (3 credit hours) An intensive review of the principles and procedures of applied behavioral and observational analysis and assessment as they relate to changing behavior in schools.

- EDG 6431 Guiding Human Relations I (3 credit hours)

- EDG 6432 Guiding Human Relations II (3 credit hours)

Instructional Design
- EME 6607 Planned Change in Instructional Technology. (3 credit hours) In-depth study of the processes of planned change and adoption/rejection of innovations in educational settings.

- EME 6602 Integrating Technology into Curriculum (3 credit hours) Resources, materials, and strategies for systemic achievement of curriculum goals; investigation of innovative and effective technological advances and practices for use in teaching and learning.

- EME 6601 Instructional Simulation Design. (3 credit hours) Integration of ISD methods with simulation systems design, including analysis, design, development and formative evaluation of leading-edge training and educational simulation technologies.

- EME 6457 Distance Education: Technology Process Product. (3 credit hours) Instruction and how it is delivered at a distance. Examines technologies, processes, and products of distance education with emphasis on e-learning.

Program Evaluation

- EDF 6401 Statistics for Educational Data. (3 credit hours) Design of educational evaluation; analysis of data, descriptive and inferential statistics, interpretation of results.

- EDF 6432 Measurement and Evaluation in Education. (3 credit hours) Concepts of measurement and evaluation, classroom test construction, creation and use of derived scores, selection and use of published measurement instruments, current issues.

- EDG 6285 Evaluation of School Programs. (3 credit hours) History of program evaluation, systems approaches to program evaluation, concepts of stakeholder and qualitative approaches to program evaluation, the role of evaluator and administrator.

- EDF 6467 Mixed Methods for Evaluation in Educational Settings. (3 credit hours) This service learning course will examine component and integrated mixed method designs toward developing a proposal for a program evaluation for a local nonprofit organization.

Research

- EDF 6971 Thesis (6 hours)

- EDF 6918 Directed Research. (3 credit hours) This option will allow students to propose a research design, collect supporting data, analyze data and prepare a narrative analysis. Students will strive towards producing a manuscript suitable for publication

- EME 6613 Instructional Systems Design. (3 credit hours) Systematic design of instruction including task analysis, learner analysis, needs assessment, content analysis, specification of objectives, media selection, evaluation and revision. Analysis of ID models.

F. For degree programs in the science and technology disciplines, discuss how industry-driven competencies were identified and incorporated into the <u>curriculum and identify if any industry advisory council exists to provide input for curriculum development and student assessment.</u>

Not applicable. This program is not a science or technology discipline.

G. For all programs, list the specialized accreditation agencies and learned societies that would be concerned with the proposed program. Will the university seek accreditation for the program if it is available? If not, why? Provide a brief timeline for seeking accreditation, if appropriate.

The program does not have any relevant accrediting agencies.

The proposed MA Degree in Applied Learning and Instruction is responding to the goals and missions of the two professional organizations that are the major influences in the fields of educational research and the investigations of effective learning and instructional practices.

American Psychological Association - Division 15 - Educational Psychology provides a collegial environment for psychologists with *interest in research, teaching, or practice in educational settings* at all levels to present and publish papers about their work. Division members' *work is concerned with theory, methodology, and applications to a broad spectrum of teaching, training, and learning issues.*

American Educational Research Association Division C recently announced three long-term goals (a) devising ways to improve the *quality of research*, (b) devising ways to improve the quality of *published research and scholarship*, and (c) devising ways of improving the *professional training of educational researchers*. It has always been our mission to highlight and create opportunities for *encouraging equity and diversity as measures for creativity, growth, and exchange of scholarly dialogues*. Furthermore, Division C holds high its mission to *mentor students into the profession*.

H. For doctoral programs, list the accreditation agencies and learned societies that would be concerned with corresponding bachelor's or master's programs associated with the proposed program. Are the programs accredited? If not, why?

Not Applicable.

I. Briefly describe the anticipated delivery system for the proposed program (e.g., traditional delivery on main campus; traditional delivery at branch campuses or centers; or nontraditional delivery such as distance or distributed learning, self-paced instruction, or external degree programs). If the proposed delivery system will require specialized services or greater than normal financial support, include projected costs in Table 2. Provide a narrative describing the feasibility of delivering the proposed program through collaboration with other universities, both public and private. Cite specific queries made of other institutions with respect to shared courses, distance/distributed learning technologies, and joint-use facilities for research or internships.

It is anticipated that this program will be delivered through a mixed-mode approach whereby some classes will be delivered by traditional face-to-face format, while others will be delivered in nontraditional media-enhanced ("M") and/or fully online ("W") formats. Existing courses within this program currently required in other graduate programs are delivered in both traditional and on-line formats. It is anticipated that this pattern will continue, though a plan to transform more courses to "M" or "W" formats will be considered when appropriate for the desired learning environment and when it best meets varied student needs. Beyond the mode of delivery, consideration will also be given to nontraditional scheduling of courses, when it meets the needs of both faculty and students. For example, concentrated short-term courses and/or weekend formats may be considered. These delivery considerations will not require additional funding. As this program is unique in the state, no queries have been made to date regarding the sharing of courses with other institutions. However, if UCF's Orlando and Regional campuses find it advantages, this program can be delivered at joint facilities already established at locations such as Daytona Beach, Clermont, and Cocoa.

IX. Faculty Participation

A. Use Table 4 to identify existing and anticipated ranked (not visiting or adjunct) faculty who will participate in the proposed program through Year 5. Include (a) faculty code associated with the source of funding for the position; (b) name; (c) highest degree held; (d) academic discipline or specialization; (e) contract status (tenure, tenure-earning, or multi-year annual [MYA]); (f) contract length in months; and (g) percent of annual effort that will be directed toward the proposed program (instruction, advising, supervising internships and practica, and supervising thesis or dissertation hours).

TABLE 4

ANTICIPATED FACULTY PARTICIPATION

Faculty Code	Faculty Name or "New Hire" Highest Degree Held, Academic Discipline or Speciality	Rank	Contract Status	Initial Date for Participation in the Program	Mos. Contract Year 1	FTE Year 1	% Effort for Prg. Year 1	PY Year 1	Mos. Contract Year 5	FTE Year 5	% Effort for Prg. Year 5	PY Year 5
A	Michele Gill	Assistant Prof	TE	2009	9	0.75	0%	0.00	9	0.75	22%	0.17
A	Kay Allen	Associate Prof	Tenured	2009	9	0.75	0%	0.00	9	0.75	11%	0.08
A	B. Hoffman	Assistant Prof	TE	2009	9	0.75	0%	0.00	9	0.75	11%	0.08
A	A. Hirumi	Associate Prof	Tenured	2010	9	0.75	0%	0.00	9	0.75	11%	0.08
A	L. Nadelson	Assistant Prof	TE	2010	9	0.75	22%	0.17	9	0.75	33%	0.25
A	C. Bentley	Assistant Prof	TE	2010	9	0.75	0%	0.00	9	0.75	11%	0.08
A	Stephen Sivo	Associate Prof	Tenured	2008	9	0.75	0%	0.00	9	0.75	11%	0.08
C	0.00	Assistant Prof	TE	2008	9	0.75	0%	0.00	9	0.75	0%	0.00
Total Person-Years (PY)								0.17				0.83

Faculty CODE		Source of Funding	PY Workload by Budget Classification		
			Year 1		**Year 5**
A	Existing faculty on a regular line	Current Education & General Revenue	0.17		0.83
B	New faculty to be hired on a vacant line	Current Education & General Revenue			
C	New faculty to be hired on a new line	New Education & General Revenue	0.00		0.00
D	Existing faculty hired on contracts/grants	Contracts/Grants			
E	New faculty to be hired on contracts/grants	Contracts/Grants			
	Overall Totals for		Year 1 0.17		Year 5 0.83

Table 4 summarizes data on key faculty that will teach in the MA in Applied Learning and Instruction. As indicated, all faculty members are full time tenured or tenure-earning.

B. Use Table 2 to display the costs and associated funding resources for existing and anticipated ranked faculty (as identified in Table 2). Costs for visiting and adjunct faculty should be included in the category of Other Personnel Services (OPS). Provide a narrative summarizing projected costs and funding sources.

TABLE 2

PROJECTED COSTS AND FUNDING SOURCES

Instruction & Research Costs (non-cumulative)	Year 1						Year 5				
	Funding Source						Funding Source				
	Reallocated Base * (E&G)	Enrollment Growth (E&G)	Other New Recurring (E&G)	New Non-Recurring (E&G)	Contracts & Grants (C&G)	Subtotal E&G and C&G	Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)	Subtotal E&G and C&G
Faculty Salaries and Benefits	$8,348	$22,261	$0	$0	$0	$30,608	$0	$83,477	$0	$0	$83,477
A&P Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
USPS Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Personnel Services	$0	$0	$12,000	$0	$0	$12,000	$0	$0	$12,000	$0	$12,000
Assistantships and Fellowships	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Library	$0	$2,000	$0	$0	$0	$2,000	$0	$0	$0	$0	$0
Expenses	$5,000	$0	$0	$0	$0	$5,000	$5,000	$0	$0	$0	$5,000
Operating Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Special Categories	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs	$13,348	$24,261	$12,000	$0	$0	$49,608	$5,000	$83,477	$12,000	$0	$100,477

*Identify reallocation sources in Table 3.

**Includes recurring E&G funded costs ("reallocated base", "enrollment growth", and "other new recurring") from Years 1-4 that continue into Year 5.

***Identify if non-recurring.

Faculty and Staff Summary

Total Positions (person-years)	Year 1	Year 5
Faculty	0.17	0.83
A&P	0	0
USPS	0	0

Worksheet Table 2 Budget

New
E&G $36,261

Calculated Cost per Student FTE

		Year 1	Year 5
Total E&G Funding		$49,608	$100,477
Annual Student FTE		3.75	20.625
E&G Cost per FTE		$13,229	$4,872

New
E&G $95,477

As indicated in Table 2, projected costs for the first five years of the program include adjunct replacement expenses for existing faculty teaching additional sections of existing courses or new course sections for this program. This is based on an average adjunct salary of $2,500 per course replacement. This budget also includes the reassignment of the Program Director (one class each fall semester and one class each spring semester). Other projected costs include $2,000 each year for the three years for library materials and $12,000 per year for one doctoral level graduate assistant (20 hours/week during fall, spring and summer semesters) to assist the Program Director. Other expenses ($5,000) are projected for marketing, supplies, and communications.

C. **Provide the number of master's theses and/or doctoral dissertations directed, and the number and type of professional publications for each existing faculty member (do not include information for visiting or adjunct faculty).**

Faculty	Theses	Dissertations	Professional Publications
Allen. Kay	4	21	19
Bentley, Courtney	1	0	7
Gill, Michelle	0	10	8
Hirumi, Atsusi	5	7	37
Hoffman, Bobby	0	0	4
Nadelson, Louis	0	0	9
Sivo, Steven	4	38	41

The above table briefly summarizes the experience of full-time tenured and tenure-earning faculty members teaching courses within the MA in Applied Learning and Instruction program core and research components. Though several are newly hired tenure-earning faculty members, who bring fresh experiences of graduate research and dissertation preparation to their positions, they are counterbalanced by several faculty members who have extensive experience guiding master and doctoral dissertations, and who have well established research and publication agendas.

D. **Provide evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student HC in major or service courses, degrees granted, external funding attracted, as well as qualitative indicators of excellence.**

Department and College of Education Goals

The Department of Educational Studies has recently acquired several new faculty members, bringing the total number of faculty to 25. The additions to the department have brought a diversity of opportunities extending the ability to address topics in learning, instruction and research. The addition of a faculty member with a background in Educational Psychology is planned, which will extend the ability of the department to address the needs of the alternatively certified teachers and students selecting other specializations within the program by focusing on the applications and implementation of the most current theories and practices. The new faculty members complement the existing faculty's expertise in learning, research methodology, motivation, and general methods and help provide the leadership necessary for this program. Currently there is no MA in the college (or the state of Florida) that provides opportunities for the diversity of students being targeted by this proposal. The new program will allow students to tailor their education to meet their personal and professional goal by building on existing coursework in the areas of learning theory and research methodology.

College and Department Productivity

Dept	Major Program	Number of F/T Faculty		External Funding	Advisees	Grads	SCH	Weighted SCH*	2005-6 SCH	2005-6 Weighted SCH*	Enrollment: Weighted SCH compared to 2005-2006	Per Capita External Funding
CFCS	Counselor Ed	7		$433,160	238	75	5935	8853	5179	7732	114.5%	$61,880
CFCS	Early Child Ed	5		$87,584	261	141	3165	3272	3167	3290	100.0%	$17,517
CFCS	Ex Ed	7		$4,729,878	209	85	5740	7619	5696	7603	100.2%	$675,697
CFCS	School Psych	3		$0	45	13	1058	1647	988	1538	107.1%	$0
CFCS	Sports Ldrshp - P	7		$0	88	71	5926	6135	5871	6078	100.9%	$0
CFCS	Sports Ldrshp - A						6618	5304	6571	5266	100.7%	
		29	CFCS Subtotals	$5,250,622	841	385	28442	32830	27472	31507	104.2%	$181,056
ERTL	Ed Ldrshp	9		$300,000	277	105	4058	8008	4423	8325	96.2%	$33,333
ERTL	Instr Tech	7		$923,241	93	31	3658	4661	3891	5174	90.1%	$131,892
ERTL	Rsch & Meas	5.5		$163,257	0	0	3228	5115	3345	5209	98.2%	$29,683
		21.5	ERTL Subtotals	$1,386,498	370	136	10944	17784	11659	18708	95.1%	$64,488
ES	Curr Studies	6		$0	209	29	5052	7105	4832	7274	97.7%	$0
ES	Multicult & Global	4		$285,804	92	0	2736	2511	2688	2451	102.4%	$71,451
ES	Soc & Psych Stu	9		$267,500	148	0	13261	12974	12476	12335	105.2%	$29,722
		19	ES Subtotals	$553,304	449	29	21049	22590	19996	22060	102.4%	$29,121
TLP	Elem/Middle	23		$1,136,508	779	517	19706	20819	19921	21100	98.7%	$49,413
TLP	K-12	3		$0	158	49	2160	2822	2389	3129	90.2%	$0
TLP	Sec/Postsec	7		$55,000	403	178	6583	7540	5366	6283	120.0%	$7,857
		33	TLP Subtotals	$1,191,508	1340	744	28449	31181	27676	30512	102.2%	$36,106
		102.5	TOTALS	$8,381,932	3000	1294	88884	104385	86803	102787		

*SCH Pegasus Weighting Factors											
UG LL	952	0.80147050		40	30						
UG UL	763	1.00000000		32	24						
Grad	490	1.55714280		27	20						
Thes/Dis	200	3.81500000									

NOTES: 1) Graduates of Community College Teaching Tracks in M.A. programs are included in Educational Leadership degree totals. 2) PE and Sports & Fitness degrees are included under Sports Leadership.

The previous table summarizes productivity factors for the College of Education and each department during the 2006/2007 academic year. Based on 102.5 full-time faculty members, the College produced 88,884 SCH and 104,385 Weighted SCH (using Pegasus Weighting Factors). The College of Education was awarded over $8 million in grants during the academic year.

Department of Educational Studies Accomplishments for 2006
The strength of the Educational Studies Department lies in the high quality of instruction provided by faculty members, their impressive research, publications and creative activities, their grant writing skills, and their leadership to professional organizations, the university, and local school and community organizations. Highlights from the Executive Summary of the 2006 Annual Educational Studies Department Report follow.

- *24 Tenure-Track, Instructor, and Visiting Faculty Members (plus Chair)*

- *$ 1.2 million in Grants Awarded (additional $2.2 million pending)*

- *3 Books, 7 Book Chapters, and 30 Journal Articles, Book Reviews and Proceedings Published; 52 Professional Conference Paper Presentations*

- *Editors/Editorial Board Members for 16 Professional Journals; Manuscript Reviewers for 14 Academic Journals*

- *25 Workshops, Presentations and Consultancies for Florida Schools, Community Organizations and UCF*

- *Leadership Roles in 24 Professional Organizations*

- *10,077 Hours of Community Service Learning by 154 Undergraduates in over 81 Non-Profit Organizations and Schools*

- *575 Junior Achievement Elementary and Secondary Classes taught by Undergraduate Education Majors*

- *John L Brinson Ethics Professorship*

- *5 Faculty Awards:*
  - ** Franklyn Conroy Williams Outstanding Holmes Scholar Award*
  - ** Teaching Incentive Program (TIP) Award*
  - ** Conference of Southern Graduate Schools 2006 Achievement Award for New Scholars in Social Sciences, Business, and Education*
  - ** Distinguished Fellow Lifetime Award, International Society for Exploring Teaching and Learning*
  - ** Social Context of Education Research Fellow, American*

X.   Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the proposed program through Year 5. Provide the total number of volumes and serials available in this discipline and related fields. List major journals that are available to the university's students. Include a signed statement from the Library Director that this subsection and subsection B have been reviewed and approved for all doctoral level proposals.

As library resources are essential to any new degree program, an analysis of library Holdings (monographs and periodicals) was conducted to assist in preparing a program proposal for the new MA in Applied Learning and Instruction. A library program review was completed by Terry Sypolt and reviewed by Jeannette Ward of the UCF Library on October 12, 2007. The review compared the library holdings of the University of Central Florida (UCF), University of Florida (UF), Michigan State University (MSU), Penn State University (PSU), Virginia Tech (VT), and Stanford University (Stanford), and are intended to provide an assessment of current and anticipated future resources for the program. These benchmark universities were selected at the recommendation of Dr. Louis Nadelson, Assistant Professor in the College of Education. A detailed listing of the fields related to educational psychology, and the number of library volumes at UCF by subject heading compared to UF, MSU, PSU, VT, and Stanford is given in Appendix A.

B. Describe additional library resources that are needed to implement and/or sustain the program through Year 5. Include projected costs of additional library resources in Table 3.

A review of UCF Library Holdings indicates that no additional databases/indexes are needed to support the proposed MA in Applied Learning and Instruction. The UCF Library is requesting $6,000 over three years to strengthen the research collection in such areas as Cognition, Motivation, and Educational Psychology. See Appendix C for detailed listings.

_____   _____

Library Director   Date

C. Describe classroom, teaching laboratory, research laboratory, office, and other types of space that are necessary and currently available to implement the proposed program through Year 5.

During 2002-2003, the College of Education building was totally renovated. The renovated space provides individual offices for faculty members in office suites. Learning

communities have formed within suites and collaboration rooms are available to meet with students or other faculty members throughout the day. The College of Education has outstanding facilities on campus and with partner schools to support students in meeting their needs. The construction of the UCF Academy for Teaching, Learning, and Leadership provides classroom space for education courses. This state-of-the-art facility supports the most recent developments in technology that allow faculty to model the use of technology and students to practice instructional delivery. Additionally, classroom space across the campus is shared among the colleges. The Academy of Teaching, Learning, and Leadership is a 45,396 square foot facility housing the Toni Jennings Exceptional Education Institute, Florida's Literacy and Reading Excellence Center (FLaRE), the Lockheed Martin Academy for Mathematics and Science, the Consortium for Social Responsibility and Character Education, and the UCF Academy Fellows. The $11 million dollar state-of-the-art building was completed in August, 2003. There are 27 classrooms in which 18 have full multi-media equipment. There are four technology labs and an assistive technology lab equipped with seven Universal Access Stations and numerous software programs.

The College of Education houses newly remodeled faculty offices and conference rooms and the Curriculum Materials Center (CMC) staffed by highly competent library personnel. The Center, which has 4,000 total square feet, contains 30,000 volumes, a collection of Florida-approved textbooks, and an extensive collection of standardized tests. The CMC provides a critical resource for the College. There is a library in the Center, as well as 23 computers that can be used as an open lab. The 23 computers consist of 13 desktop computers and ten laptops. Students can print their work and have access to a variety of other functions. The lab is open six days a week, including all day on Saturday. The CMC also has a digital camera and video camera for use in the CMC, 25-inch wide laminator, opaque projector, overhead projector, Ellison machine to cut out letters and shapes, and pay-for-print black and white printing.

In the Teaching Academy for Teaching, Learning and Leadership there are several computer labs and laptop carts. The labs/laptop carts are as follows:
- lab containing thirteen computers, all Windows based
- lab containing thirty-six computers, all Windows based
- lab containing eighteen computers, all Windows based
- lab containing fourteen computers, all Mac based.
- lab containing sixteen computers for ITGL graduate students, combination of Windows and Mac computers.
- laptop cart containing 12 Windows computers
- laptop cart containing 14 Mac computers

The 14 computers that are all Mac based are used for the Apple Training Center as well as other specialized training. All five labs are open for classes and special training needs for students in the College of Education. One of the labs is equipped with technology equipment to help students with disabilities as well as training teachers to help students with disabilities.

All classrooms in the Teaching Academy and the Education Complex have Crestron Console Systems. They consist of document cameras, computers, DVD/VCR, speakers, RJ 45 connection for laptops, and a high quality ceiling mounted projector. All rooms in the Academy for Teaching, Learning, and Leadership and the Education Complex are equipped with closed captioning through the projection system. The College spent over $4,000 to purchase a closed caption decoder to make every room fully accessible to the hearing impaired and other persons with disabilities who would like to view the closed captioning. Most rooms have motorized screens and whiteboards. The entry to the Academy for Teaching, Learning, and Leadership includes three plasma displays that project valuable information to students as they enter the building.

D. Describe additional classroom, teaching laboratory, research laboratory, office, and other space needed to implement and/or maintain the proposed program through Year 5. Include any projected Instruction and Research (I&R) costs of additional space in Table 2. Do not include costs for new construction because that information should be provided in response to X (J) below.

No additional space will be needed. All facilities described in Subsection C are maintained by the College of Education. There is no additional cost for the proposed Master of Arts in Applied Learning and Instruction degree.

E. Describe specialized equipment that is currently available to implement the proposed program through Year 5. Focus primarily on instructional and research requirements.

Classrooms in the Teaching Academy are currently equipped with multimedia presentation systems. Computer labs are available for instructional access.

F. Describe additional specialized equipment that will be needed to implement and/or sustain the proposed program through Year 5. Include projected costs of additional equipment in Table 2.

No additional specialized equipment is needed.

G. Describe any additional special categories of resources needed to implement the program through Year 5 (access to proprietary research facilities, specialized services, extended travel, etc.). Include projected costs of special resources in Table 2.

Not applicable – this is not outside of the present budgetary needs.

H. Describe fellowships, scholarships, and graduate assistantships to be allocated to the proposed program through Year 5. Include the projected costs in Table 2.

Not applicable – it is a part time program.

I. **Describe currently available sites for internship and practicum experiences, if appropriate to the program. Describe plans to seek additional sites in Years 1 through 5.**

Not applicable.

J. **If a new capital expenditure for instructional or research space is required, indicate where this item appears on the university's fixed capital outlay priority list. Table 2 includes only Instruction and Research (I&R) costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form below. It is expected that high enrollment programs in particular would necessitate increased costs in non-I&R activities.**

Not Applicable

APPENDIX

A. FINANCIAL WORKING TABLES

Summary Analysis

Name of Program: Master of Arts in Applied Learning
Level of program: Masters
CIP code: 15,0000
Author:

Additional resources needed for new program

Estimated Costs	Total	Current	Reallocation		New E&G	C&G	Cost/fte*	Cost/fte**
Year 1	$49,608	$13,348	$13,348	27%	$36,261	$0	$13,229	$ 13,229
		0						
Year 2	$69,086	$5,000	$5,000	7%	$64,086	$0	$6,699	$ 6,699
Year 3	$102,477	$30,043	$30,043	29%	$72,434	$0	$6,246	$ 6,246
Year 4	$100,477	$5,000	$5,000	5%	$95,477	$0	$5,104	$ 5,104
Year 5	$100,477	$5,000	$5,000	5%	$95,477	$0	$4,872	$ 4,872

* based upon total costs

** based upon current and new costs only, does not include C&G

FTE/Headcount

	Year 1	Year 2	Year 3	Year 4	Year 5
Headcount	10	25	45	55	60
FTE	3.75	10.31	16.40625	19.6875	20.63

Criteria for Program Approval (8 criteria)

Met with Strength	Met	Met with Weakness	Unmet
		0	0

Estimated revenue generated through student enrollment

((fte*32sch/fte)/490sch/fac lines)*1.2 *A36*1.238

Revenue	Year 1	Year 2	Year 3	Year 4	Year 5
490		$0	$41,887	$115,189	$183,255	$219,906
71193					

TABLE 3
ANTICIPATED REALLOCATION OF EDUCATION AND GENERAL FUNDS

Program and/or E&G account from which current funds will be reallocated during Year 1	Base before reallocation	Amount to be reallocated	Base after reallocation
14 26 0001 Educational Studies	$1,809,176	$0.00	$1,809,176
Totals			

	5th year	
Worksheet Table 3 Reallocation	22% Gil	$5,000
	33% Nadelson	7500
Note: reallocation does not occur in Year 1.	11% Hoffman	2500
	11% Allen	2500
	11% Bentley	2500
	11% Hirumi	2500
	11% Sivo	2500
	$25,000	0.013818446

TABLE 2

PROJECTED COSTS AND FUNDING SOURCES YEAR 2 & 3

Instruction & Research Costs (non-cumulative)	Year 2					Year 3				
	Funding Source					Funding Source				
	Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)	Subtotal E&G and C&G	Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)	Subtotal E&G and C&G
Faculty Salaries and Benefits	$0	$50,086	$0	$0	$50,086	$25,043	$58,434	$0	$0	$83,477
A&P Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
USPS Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Personnel Services	$0	$0	$12,000	$0	$12,000	$0	$0	$12,000	$0	$12,000
Assistantships and Fellowships	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Library	$0	$2,000	$0	$0	$2,000	$0	$2,000	$0	$0	$2,000
Expenses	$5,000	$0	$0	$0	$5,000	$5,000	$0	$0	$0	$5,000
Operating Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Special Categories	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs	$5,000	$52,086	$12,000	$0	$69,086	$30,043	$60,434	$12,000	$0	$102,477

*Identify reallocation sources in Table 3.

**Includes recurring E&G funded costs ("reallocated base", "enrollment growth", and "other new recurring") from Years 1-4 that continue into Year 5.

Faculty and Staff Summary

Total Positions (person-years)	Year 2	Year 3	Year 4
Faculty	0.50	0.63	0.83
A&P	0	0	0
USPS	0	0	0

Calculated Cost per Student FTE

		Year 2	Year 3	Year 4
Total E&G Funding		$69,086	$102,477	$100,477
Annual Student FTE		10.3125	16.40625	19.6875
E&G Cost per FTE		$6,699	$6,246	$5,104

TABLE 2

PROJECTED COSTS AND FUNDING SOURCES YEAR 4

Instruction & Research Costs (non-cumulative)	Year 4				
	Funding Source				
	Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)	Subtotal E&G and C&G
Faculty Salaries and Benefits	$0	$83,477	$0	$0	$83,477
A&P Salaries and Benefits	$0	$0	$0	$0	$0
USPS Salaries and Benefits	$0	$0	$0	$0	$0
Other Personnel Services	$0	$0	$12,000	$0	$12,000
Assistantships and Fellowships	$0	$0	$0	$0	$0
Library	$0	$0	$0	$0	$0
Expenses	$5,000	$0	$0	$0	$5,000
Operating Capital Outlay	$0	$0	$0	$0	$0
Special Categories	$0	$0	$0	$0	$0
Total Costs	$5,000	$83,477	$12,000	$0	$100,477

*Identify reallocation sources in Table 3.

**Includes recurring E&G funded costs ("reallocated base", "enrollment growth", and "other new recurring") from Years 1-4 that continue into Year 5.

Faculty and Staff Summary

Total Positions (person-years)	Year 2	Year 3	Year 4
Faculty	0.50	0.63	0.83
A&P	0	0	0
USPS	0	0	0

Calculated Cost per Student FTE

		Year 2	Year 3	Year 4
Total E&G Funding		$69,086	$102,477	$100,477
Annual Student FTE		10.3125	16.40625	19.6875
E&G Cost per FTE		$6,699	$6,246	$5,104

		BUDGET			

This table can be used for interdisciplinary programs where faculty salaries
are different between departments. Used to compute total fte and average cost

	# fac	fac salaries	9 month avg salary	12 month avg salary
Dept 1			61448	81931
Dept 2				
Dept 3				
12 month salary total:			61448	81931

Existing faculty fte to the new program - reallocated base

	1st yr	2nd yr	3rd yr	4th yr	5th yr
Dept 1-	**0.08**	**0.00**	**0.25**	**0.00**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

New faculty fte to the new program - enrollment growth

	1st yr	2nd yr	3rd yr	4th yr	5th yr
Dept 1	**0.22**	**0.50**	**0.58**	**0.83**	**0.83**
Total	**0.22**	**0.50**	**0.58**	**0.83**	**0.83**
Total-check					

New Faculty fte to new program - other new recurring monies (give source)

	1st yr	2nd yr	3rd yr	4th yr	5th yr
Dept 1	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

	1st yr	2nd yr	3rd yr	4th yr	5th yr
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
New faculty fte to new program - new non-recurring monies (give source)					
	1st yr	**2nd yr**	**3rd yr**	**4th yr**	**5th yr**
Dept 1	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
New faculty fte to new program - C&G					
	1st yr	**2nd yr**	**3rd yr**	**4th yr**	**5th yr**
Dept 1	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Faculty costs without benefits					
Existing faculty cost	6759	0	20278	0	0
New faculty cost - enrollment growth	18025	40556	47315	67593	67593
New faculty cost - other recurring monies	0	0	0	0	0
New faculty cost - new non-recurring monies	0	0	0	0	0
New E&G faculty cost	18025	40556	47315	67593	67593
New C&G faculty cost	0	0	0	0	0
Total faculty costs without benefits	24784	40556	67593	67593	67593

BUDGET YEAR 1 & 2

IDENTIFICATION OF CURRENT BASE FUNDS TO SUPPORT THE NEW PROGRAM

NAME OF PROGRAM__   Applied Learning & Instruction
PROGRAM LEVEL__   MA
CIP IDENTIFICATION__   15.0000
DATE SUBMITTED__   Fall 2007

	FIRST YEAR					SECOND YEAR				
		New from Enrollment Growth	New from New Recurring	New from Non-Recurring	New from		New from Enrollment Growth	New from New Recurring	New from Non-Recurring	New from
	Reallocated BASE RESOURCES	NEW PROGRAMS	E&G REVENUE	E&G REVENUE	C&G REVENUE	Reallocated BASE RESOURCES	NEW PROGRAMS	E&G REVENUE	E&G REVENUE	C&G REVENUE
	---------	---------	---------	---------		---------	---------	---------	---------	
POSITIONS (in FTE):										
FACULTY	0.08	0.22	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
A&P			0					0	0	
USPS		0					0			
TOTAL	0.08	0.22	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
	=========	=========	=========	=========		=========	=========	=========	=========	
A&P	0	USPS	0			A&P	0	USPS	0	
SALARY RATE:										
FACULTY	6759	18025	0	0	0	0	40556	0	0	0
A&P			0					0		
USPS		0								
TOTAL	6759.28	18025	0	0	0	0	40556	0	0	0
	=========	=========	=========	=========		=========	=========	=========	=========	
Faculty Salaries and Benefits	8348	22261	0	0	0	0	50086	0	0	0
A&P Salary and Benefits	0	0	0	0	0	0	0	0	0	0
USPS Salary and Benefits	0	0	0	0	0	0	0	0	0	0
Other Personnel Services	0		12000				0	12000		
Assistantships and Fellowships					0					0
Library		2000					2000			
Expenses	5000	0			0	5000	0			0
Operating Capital Outlay										
Special Categories										
TOTAL	13348	24261	12000	0	0	5000	52086	12000	0	0
	=========	=========	=========	=========		=========	=========	=========	=========	

BUDGET YEAR 3 & 4

IDENTIFICATION OF CURRENT BASE FUNDS TO SUPPORT THE NEW PROGRAM

NAME OF PROGRAM__   Applied Learning & Instruction

PROGRAM LEVEL__   MA

CIP IDENTIFICATION__   15.0000
Fall 2007

DATE SUBMITTED__

	THIRD YEAR					FOURTH YEAR				
		New from	New from	New from	New from		New from	New from	New from	New from
		Enrollment	New	Non-			Enrollment	New	Non-	
	Reallocated	Growth	Recurring	Recurring		Reallocated	Growth	Recurring	Recurring	
	BASE	NEW	E&G	E&G	C&G	BASE	NEW	E&G	E&G	C&G
	RESOURCES	PROGRAMS	REVENUE	REVENUE	REVENUE	RESOURCES	PROGRAMS	REVENUE	REVENUE	REVENUE
	---------	---------	---------	---------		---------	---------	---------	---------	
POSITIONS (in FTE):										
FACULTY	0.25	0.58	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00
A&P			0					0		
USPS										
TOTAL	0.25	0.58	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00
	=========	=========	=========	=========		=========	=========	=========	=========	
A&P	A&P	0	USPS	0		A&P	0	USPS	0	
SALARY RATE:										
FACULTY	20278	47315	0	0	0	0	67593	0	0	0
A&P		0	0				0	0		
USPS		0					0			
TOTAL	20277.84	47315	0	0	0	0	67593	0	0	0
	=========	=========	=========	=========		=========	=========	=========	=========	
Faculty Salaries and Benefits	25043	58434	0	0	0	0	83477	0	0	0
A&P Salary and Benefits	0	0	0	0	0	0	0	0	0	0
USPS Salary and Benefits	0	0	0	0	0	0	0	0	0	0
Other Personnel Services	0	0	12000			0		12000		
Assistantships and Fellowships					0					0
Library		2000					0			
Expenses	5000	0			0	5000	0			0
Operating Capital Outlay										
Special Categories										
TOTAL	30043	60434	12000	0	0	5000	83477	12000	0	0
	=========	=========	=========	=========		=========	---------	---------	---------	---------

BUDGET YEAR 5

IDENTIFICATION OF CURRENT BASE FUNDS TO SUPPORT THE NEW PROGRAM

NAME OF PROGRAM__   Applied Learning & Instruction

PROGRAM LEVEL__   MA

CIP IDENTIFICATION__   15.0000

DATE SUBMITTED__   Fall 2007

	FIFTH YEAR			
		New		
		Enrollment		
	Continuing	Growth	Other	C&G
	BASE	E&G	(E&G)	NEW
	RESOURCES	PROGRAMS	REVENUE	REVENUE
	---------	---------	---------	---------
POSITIONS (in FTE):				
FACULTY	0.00	0.83	0.00	0.00
A&P			0	
USPS				
TOTAL	0.00	0.83	0.00	0.00
			======== =	======== =
	=========	=========		
A&P	A&P	0	USPS	0
SALARY RATE:				
FACULTY	0	67593	0	0
A&P		0	0	
USPS		0		
TOTAL	0	67593	0	0
			======== =	======== =
	=========	=========		
Faculty Salaries and Benefits	0	83477	0	0
A&P Salary and Benefits	0	0	0	0
USPS Salary and Benefits	0	0	0	0
Other Personnel Services	0		12000	
Assistantships and Fellowships				0
Library		0		
Expenses	5000	0		0
Operating Capital Outlay				
Special Categories				
TOTAL	5000	83477	12000	0
			======== =	======== =
	=========	=========		

B. FACULTY TABLES

Current faculty contributing to New program					
Proposed Graduate Program Faculty Assignments - Master of Arts in Applied Learning and Instruction					
% Effort for Program					
Faculty Name	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Stephen Sivo	0.11	0.00	0.00	0.00	0.00
Louis Nadelson	0.00	0.00	0.11	0.00	0.00
Atsusi Hirumi	0.00	0.00	0.11	0.00	0.00
C. Bentley	0.00	0.00	0.11	0.00	0.00
Page 2 ASSIGNMENTS	**0.11**	**0.00**	**0.33**	**0.00**	**0.00**

Current and New faculty contributing to New program

Proposed Graduate Program Faculty Assignments - Master of Arts in Applied Learning and Instruction

% Effort for Program

Faculty Name	Year 1	Year 2	Year 3	Year 4	Year 5
Michele Gill	0.00	0.22	0.22	0.22	0.22
Kay Allen	0.00	0.11	0.11	0.11	0.11
B. Hoffman	0.00	0.11	0.11	0.11	0.11
A. Hirumi	0.00	0.00	0.00	0.11	0.11
L. Nadelson	0.22	0.22	0.22	0.33	0.33
C. Bentley	0.00	0.00	0.00	0.11	0.11
Stephen Sivo	0.00	0.00	0.11	0.11	0.11
Page 2 ASSIGNMENTS	**0.22**	**0.66**	**0.77**	**1.10**	**1.10**

TABLE 4

ANTICIPATED FACULTY PARTICIPATION

Faculty Code	Faculty Name or "New Hire" / Highest Degree Held / Academic Discipline or Speciality	Rank	Contract Status	Initial Date for Participation in the Program	Mos. Contract Year 2	FTE Year 2	% Effort for Prg. Year 2	PY Year 2	Mos. Contract Year 3	FTE Year 3	% Effort for Prg. Year 3	PY Year 3	Mos. Contract Year 4	FTE Year 4	% Effort for Prg. Year 4	PY Year 4
A	Michele Gill	Assistant Prof	TE	2009	9	0.75	22%	0.17	12	1.00	22%	0.22	9	0.75	22%	0.17
A	Kay Allen	Associate Prof	Tenured	2009	9	0.75	11%	0.08	9	0.75	11%	0.08	9	0.75	11%	0.08
A	B. Hoffman	Assistant Prof	TE	2009	9	0.75	11%	0.08	9	0.75	11%	0.08	9	0.75	11%	0.08
A	A. Hirumi	Associate Prof	Tenured	2010	9	0.75	0%	0.00	9	0.75	0%	0.00	9	0.75	11%	0.08
A	L. Nadelson	Assistant Prof	TE	2010	9	0.75	22%	0.17	9	0.75	22%	0.17	9	0.75	33%	0.25
A	C. Bentley	Assistant Prof	TE	2010	9	0.75	0%	0.00	9	0.75	0%	0.00	9	0.75	11%	0.08
A	Stephen Sivo	Associate Prof	Tenured	2008	9	0.75	0%	0.00	9	0.75	11%	0.08	9	0.75	11%	0.08
	Total Person-Years (PY)							0.50				0.63				0.83

Faculty CODE		Source of Funding	PY Workload by Budget Classification		
			Year 2	Year 3	Year 4
A	Existing faculty on a regular line	**Current Education & General Revenue**	**0.50**	**0.63**	**0.83**
B	New faculty to be hired on a vacant line	**Current Education & General Revenue**			
C	New faculty to be hired on a new line	**New Education & General Revenue**	0.00	0.00	0.00
D	Existing faculty hired on contracts/grants	**Contracts/Grants**			
E	New faculty to be hired on contracts/grants	**Contracts/Grants**			

	Year 2		Year 3		Year 4	
Overall Totals for		0.50		0.63		0.83

C. LIBRARY MEMOS

Memorandum

To: Michael Arthur, Acquisitions and Collections, Head

From: Terrie Sypolt, Reference Librarian

Subject: Applied Learning and Instruction MA Program Resources Proposal

Date: October 15, 2007

The program proposal for a Master's Degree in Applied Learning and Instruction is targeted at independent scholars in specialized areas of learning and instruction with potential application in post-secondary education, and public and private sector instructional environments. The areas identified for concentration are: learning theory, motivation, cognition, instructional methods, pedagogy, educational psychology, teacher education, and organizational development. For the most part, UCF library holdings in these areas compare favorably with the institutions identified who are granting a master's degree: **Michigan State University and Virginia Tech**. The University of Florida, Stanford and Penn State universities have considerably larger collections, but they also support doctoral programs in Educational Psychology as well. A detailed comparison of indexes, journal titles, reference titles and book counts by subject heading is attached for your review.

Recommendations include the following:

No additional databases/indexes are needed to support the proposed MA program. (See attached)

No additional journal titles are necessary to support this proposed degree. However, should new journal titles become available, additional money would be needed to add them to the collection, especially since they would be recurring funds.

While the book collection at the University of Central Florida is solid enough to support a Master's program in Applied Learning and Instruction, I would recommend that we add $2,000.00 per year over the next three years to strengthen those highlighted areas where we are weak in comparison to other institutions.

$2,000.00 x 3 years = $6,000.00

Proposal for MA Degree in Applied Learning and Instruction
Program Evaluation
By Terrie K. Sypolt,
UCF Reference Librarian
October 12, 2007

Schools identified by Dr. Louis S. Nadelson for comparison include:
      University of Florida
      Michigan State (substituted for U of Michigan)
      Penn State University (Sypolt added)
      Stanford University
      Virginia Tech (Sypolt added)

Topics identified by Dr. Louis S. Nadelson for comparison include:
      Learning theory
      Motivation
      Cognition
      Instructional methods
      Pedagogy
      Educational psychology
      Teacher education
      Organizational development

Databases, indexes and abstracts:

Database name	UCF	UF	MSU	PSU	Va Tech
Annual Review of Psychology				x	
British Education Index				x	
Dissertation & Theses Full-Text	x	x	x	x	x
Education Full-Text/Education Research Complete	x	x	x	x	x
Education: Sage Full-Text Collection	x	x	x	x	
ERIC	x	x	x	x	x
International Encyclopedia of Social & Behavioral Sciences	x	Print	x	x	Print
Mental Measurements Yearbook	x	x	Paper	x	x
MIT CogNet				x	
Professional Development Collection	x	x	x	x	
PsycArticles	x	x	x	x	x
PsycBooks	x	x		x	
PsycINFO	x	x	x	x	x
Psychology: Sage Full-Text Collection	x	x	x		
PubMed (Medline)	x	x	x	x	x
Sociological Abstracts	x	x	x	x	x

	UCF	UF	MSU	PSU	VT	Stanford
Web of Science (Social Science Citation Index; Science Citation Index)	x	x	x	x	x	
What Works Clearinghouse	x			x		
WorldCat	x	x	x	x	x	
ABI Inform	x	x	x	x	x	
Academic Search Premier/Academic OneFile	x	x	x		x	
Blackwell Synergy	x	x	x		x	
Business Source Premier/Business Source Complete	x	x				
Expanded Academic ASAP		x	x		x	
InfoTrac OneFile	x	x	x		x	
Lexis Nexis Academic	x	x	x		x	
OmniFile Full-Text	x	x				
Oxford Journals Online	x	x			x	
Springer LINK	x	x	x		x	
Wiley Interscience	x	x	x		x	

Observation: *Databases at UCF Libraries are sufficient to support the proposal without additions.* While MIT CogNet and the Annual Review of Psychology would be nice additions, they are not imperative at the Master's level.

Books

Topic area translated into subject headings	UCF	UF	MSU	PSU	VT	Stanford
Ability grouping in education	82	191	118	110	61	106
Abstraction	20	41	36	43	24	176
Achievement motivation	191	257	204	241	141	246
Active learning	181	150	159	169	84	85
Adult learning	168	221	134	205	124	117
Apperception	32	47	22	45	22	57
Attention	476	607	567	557	434	300
Attribution Social psychology	63	80	87	68	48	61
Awareness	328	622	57	516	42	525
Child psychology	1595	2906	1778	1915	1135	2611
Cognition **> 1984 (ok)**	**2071** **1662**	**2789** **1961**	**2290** **1447**	**2292** **1614**	**1783** **1440**	**2347** **1473**
Cognition and culture	145	205	131	182	129	201
Cognitive balance	4	3	5	3	1	6
Cognitive consistency	5	4	1	4	5	5
Cognitive dissonance	9	21	22	21	13	36
Cognitive learning	143	145	145	123	81	139

Cognitive maps Psychology	12	16	10	16	9	13
Cognitive psychology	200	200	158	190	131	300
Cognitive styles	185	201	155	167	103	89
Comprehension	539	888	193	525	107	418
Conservation psychology	3	14	10	7	10	14
Differentiation cognition	4	4	8	2	5	8
Education	45,338	91,996	45,330	74,123	45,000	91,546
Education Study and teaching	786	1414	185	1210	72	5548
Educational psychology >1984	**681 333**	**1610 410**	**986 201**	**1446 372**	**1505 460**	**1505 462**
Emotions and cognition	81	82	78	107	59	91
Experiential learning	164	202	234	192	111	111
Field dependence psychology	6	10	14	35	8	6
Imagination	355	635	433	774	323	602
Intelligence levels	104	172	233	140	137	180
Interest psychology	9	52	66	35	16	74
Knowledge management	569	411	466	436	466	454
Knowledge theory of	1442	2362	2162	2857	1419	2048
Learning	**5962**	**7573**	**4937**	**6894**	**6394**	**6396**
Learning psychology of	**1139**	**1529**	**1644**	**1493**	**1520**	**1520**
Learning theory of	2	4	2	41	86	186
Listening	125	266	163	157	103	130
Mastery learning	7	5	5	4	5	3
Metacognition	35	50	39	28	27	23
Motivation	**1553**	**1761**	**1365**	**1730**	**690**	**1425**
Motivation in education	**377**	**450**	**376**	**350**	**231**	**328**
Open learning	52	45	25	59	27	39
Organizational learning	**392**	**294**	**301**	**321**	**278**	**252**
Pedagogy	**477**	**438**	**7**	**423**	**3**	**323**
Perception	2703	3881	828	3935	466	3753
Personality and cognition	13	14	15	51	13	54
Students psychology	238	359	47	286	29	341
Subconsciousness	148	178	174	196	146	291
Teachers Training of	1739	3609	2510	2988	784	2830
Teaching	**25,246**	**44,415**	**17,101**	**41,154**	**1793**	**43,386**
Thought and thinking	730	1032	1025	1022	592	1129
Totals	96,928	174,461	87,041	149,888	66,795	172,434

Sample list of reference book titles in the UCF Libraries:

- Cambridge Handbook of the Learning Sciences LB 1060 .C35 2006
- Oxford Companion to the Mind, 2004. Reference BF 31 .O94
- MIT Encyclopedia of the Cognitive Sciences Reference BF 311. M556
- Handbook of Child Psychology Reference BF 721 .H242 2006
- International Encyclopedia of the Social and Behavioral Sciences
- Handbook of Research on Teaching Reference LB 1028 .H315
- Handbook of Educational Psychology LB 1051 .H2354 2006
- Educational Psychology: Theory and Practice LB 1051 .S615
- Handbook of Education and Human Development: New Models of Learning, Teaching and Schooling LB 1115 .H313 1998
- Encyclopedia of the Human Brain Reference QP 376 .E86

Observations regarding the book collection: The book collection at the University of Central Florida is solid enough to support a Master's program. The only recommendation I would make is an addition of 40 or so titles in the area of educational psychology to strengthen the existing collection. Currently our collection centers upon school or counseling psychology and not educational psychology which is the focus of the proposed program.

The University of Florida, Stanford and Penn State University have strong research collections with Doctorates in Educational Psychology. Should UCF pursue a doctorate in Educational Psychology, then our collection would need to reflect numbers closer to Penn State with its Learning and Instruction emphasis.

Journals:

For a list of education periodicals arranged by subject see
http://library.ucf.edu/Reference/Guides/EducationJournals/

Selective Journal Titles (Owned by the UCF Libraries) that would support the proposed program include:

American Journal of Education
Applied Cognitive Psychology
Brain and Cognition
Cognition
Cognition and Instruction
Cognitive Development
Cognitive Psychology
Consciousness and Cognition
Contemporary Educational Psychology
Current Issues in Education

Curriculum Inquiry
Developmental Psychology
Early Childhood Research and Practice
Early Childhood Research Quarterly
Educational Psychology
Educational Psychologist
Education and Urban Society
Educational and Psychological Measurement
Educational Philosophy and Theory
Elementary School Journal
Human Resource Development Quarterly
Incentive
Instructor
Journal of Cognition and Development
Journal of Counseling Psychology
Journal of Early Childhood Teacher Education
Journal of Education for Students Placed at Risk
Journal of Educational Psychology
Journal of Educational Research
Journal of Management Development
Journal of Management Education: a Publication of the Organizational Behavior
Teaching Society
Journal of Organizational Behavior
Journal of Organizational Behavior Management
Journal of Staff Development
Journal of Teacher Education
Journal of Transformative Education
Leadership and Organization Development Journal
Learning and Motivation
Learning, Memory and Cognition
Pedagogy
Psychology of Learning and Motivation
Review of Education, Pedagogy, Cultural Studies
Review of Educational Psychology
Review of Educational Research
Simulation and Gaming
Teacher Education and Special Education
Teaching History
Teaching Pre K-8
Visual Cognition

Observations about the journal holdings: The current journal titles held by UCF will be sufficient to support the new master's degree program.

TO: Jeannette Ward, Associate Director for Technical Services

FROM: Michael A. Arthur, Head, Acquisitions & Collection Services Department

DATE: October 15, 2007

SUBJECT: Program Proposal for Master of Science Degree in Applied Learning and
                 Instruction

This memorandum is being submitted for your review and approval. As library resources
are essential to any new degree program, an analysis of library holdings in support of a
Master of Science Degree in Applied Learning and Instruction (monographs and
periodicals) was conducted by Terrie Sypolt at the request of Dr. Louis Nadelson,
Assistant Professor in the College of Education. Terrie compared the collection at UCF
against the University of Florida, the University of Michigan, Michigan State University,
Stanford University, and Virginia Tech. I agree with Terrie's request for $6,000.00
($2000.00 per year for three years) based on her conclusion that current collection
strength will adequately support a master's level program.

Previous financial support for the UCF Libraries has resulted in a continued emphasis on
print monographs, the foundation of a strong research library. However, current year funding
levels will not permit the library to purchase any new materials in support of this program,
and the expectations for 2008/2009 are not encouraging. In addition, the library is currently
undergoing cancellations in journals and databases in order to meet the university wide
budget cuts. Therefore, it is essential that the library receive the recommended funding as
outlined by Terrie so that we can strengthen selected areas of the collection where we are
weak against our peer institutions, and provide new materials during this period of reduced
funding.

MEMORANDUM

TO: Dr. Louis S. Nadelson

FROM: Jeannette Ward
              Associate Director of Technical Services

SUBJECT: Proposal for MA Degree in Applied Learning and Instruction

DATE: October 15, 2007

I have reviewed the collection analysis completed by Michael Arthur and Terrie Sypolt. A copy of that report is enclosed.

The Library is requesting $6,000 over three years to strengthen the research collection in such areas as Cognition, Motivation, and Educational Psychology.

Enclosure

cc: Barry Baker, Director of Libraries
        Patricia Bishop, Vice Provost & Dean, Graduate Studies, MH 230
        Michael Arthur, Acquisitions & Collection Services
        Terri Sypolt, Reference Services

EDP 6XXX: Seminar in Applied Learning and Instruction I
University of Central Florida
College of Education

I.   **Descriptive Information**

       Department: Educational Studies
       Course Title: Seminar in Applied Learning and Instruction I
       Course Requirements:
       Mode of Instruction: Lecture, discussion
       Course Number: EDP 6XXX
       Course Credit: 3 semester hours
       Semester:
       Instructor:
       Email Address:
       Office:
       Office Hours:
       Phone:

       Catalog Description:

       An overview of contemporary theories and research related to issues in human
       learning and instruction with an emphasis on practical applications for educational
       and workplace settings. This course will focus on affective and motivational
       issues surrounding learning and instruction.

II.   **Statement of Course Goals and Objectives**

       KEY:
              ESOL = English for Speakers of Other Languages
              FEAP = Florida Educator Accomplished Practices
              PEC = Professional Education Competencies

       Through a seminar style format, using class discussions, video and/or computer
       presentations, student presentations, written assignments, and group interactions,
       the student will, upon completion of the course, be able to:

1. Understand the role of psychology in general, and educational psychology in
    particular, plays in the modern classroom. (FEAP/PEC 7)

2. Distinguish more- from less-facilitating learning environments based on an understanding of educational psychological theory. (FEAP/PEC 3, 7, 9, 12; ESOL 18)
3. Create a positive classroom environment to accommodate the various learning styles and cultural backgrounds of students. (LEP). (ESOL 18/PEC 14)
4. Think critically about issues related optimal motivational, learning and instruction. (FEAP 4, PEC 4)
5. Gain an overview of the key problems issues related to teaching and learning in school and workplace settings.
6. Use problem solving skills to solve instructional challenges for diverse populations (FEAP 5, PEC 5)
7. Evaluate contemporary issues relating to learning such as multiple intelligence, theories, rewards, learning styles, diversity, critical thinking, high stakes testing, beliefs about learning, the role of teacher, and the nature and scope of learning. (FEAP 8, PEC 8)
8. Distinguish learning milestones in the development of expertise. (FEAP 7, PEC 7)
9. Evaluate instruction to promote meaningful learning and transfer. (FEAP 1, PEC 1)
10. Create research-based solutions to successfully address the challenges of learning and instruction found in educational and workplace settings. (FEAP 9)
11. Analyze, synthesize and evaluate at least one topic of interest in the area of educational psychology.
12. Critically evaluate a current practice concerning learning or instruction in an educational or workplace setting. (FEAP 1, PEC 1)

III.   **Required Texts and Readings**
- Course pack of selected readings

Recommended Text:
- Publication Manual of the American Psychological Association (5th ed.). (2001).
  Washington, D.C.: American Psychological Association

IV.   **Academic Course Requirements**

1. Class Participation

Each week you are required to read all materials listed in the course outline. Your ability to discuss the reading material will partially contribute towards earning class participation points. Each week you should be prepared to contribute to class discussion and participate in group activities. Comments, concerns, questions and your personal perspectives will serve as the basis for our weekly class discussions. Thoughtful and creative critique of ideas, including alternative conceptions is warranted and encouraged. Group activities will

consist of practical application of theoretical ideas introduced by your readings or discussions.   You must be in class to earn credit for class participation and class participation points cannot be made up.

2. Problem Selection Assessment

One of the main objectives of this course is to apply theory in educational psychology to an actual instructional issue in the classroom or workplace. Beginning in Week One you should identify an actual or theoretical problem that will serve as the foundation for the entire semester. The problem you identify should be broad in scope and be one that is within your control to influence. The purpose of the problem selection assessment is to provide a foundation for you to apply your knowledge from the class. Each week you will interpret the weekly readings and discussions and apply the knowledge to the problem you have identified.

The problem selection assessment is comprised of a 1 - 2 page double-spaced typed description of the issue you would like to influence or the problem you want to resolve. Your problem description should be completed using APA format and should specifically outline a) the problem, b) your goal, c) key individuals, d) the intended solution, and e) the methodology you plan to use to resolve the problem.

3. Analysis Paper

As a means of demonstrating your ability to apply theory to practice, you will critically analyze a classroom or workplace instructional issue that is of interest and/or concern to you. The analysis paper is the culmination paper for the course. The analysis paper consists of applying the research and theory related to the issue you have identified in the problem assessment. Each week we will review articles that offer various perspectives on instructional issues. Your task is to review key articles that relate to both side of the issue, evaluate the extant research on this topic, and then provide a synthesis of theory and research on this topic in the form of an action plan to address the issue of concern. Further details and a grading rubric are located on Webcourses@UCF.

4. Reflection Papers

Each week, you are required to submit a 1 - 2 page, typed, double-spaced reaction paper based upon the weekly readings. A weekly reaction paper requires you to read and reflect on the assigned reading before each class meeting. Agree or disagree with the authors' position or argument. Provide an example or counterexample that you have come across in your experience or have read in another text, or research article. Use the reaction paper to identify

which aspects of the reading you found most important, or worthy of class discussion. Most importantly, discuss how the weekly readings might bear on the instructional or learning issue you will be addressing in your final paper. Be creative and thoughtful.

5. Lead a class discussion

Each week a student, or group of students will be responsible for leading the discussion on the weekly readings. For each weekly reading(s), student(s) will:

- Prepare a 20-minute discussion that reviews the reading for that day.

- Offer a critique and analysis of the article. What did you find helpful about the article? What was confusing? What are the practical implications of this article for learning or instruction? Ask relevant questions to start the discussion.

- Search for other relevant articles on the topic. It is the responsibility of the student to look for related articles and books in the library to help lead the discussion.

- Prepare overheads or handouts for the class discussion.

V.   Administrative Course Requirements

1.   Attendance and Participation

In the case of illness or emergency, contact the professor via **Course Mail** on **Webcourses** before your absence if possible or soon afterward to explain the absence. *More than 1 absence or 1 day of not being prepared for class may result in up to 10 points being deducted from your final grade.* Pagers and cell phones must be either turned off or set to a silent mode such as vibrate.

2.   Technology Use during F2F Classes

Bringing your laptop to use during class is a privilege; therefore, students are expected to use computers appropriately for note-taking and other class-related purposes. Using a computer or other electronic device (PDA, cell phone, MP3 player, etc.) to engage in non-class related activities such as instant messaging, web surfing, checking email, etc. will result in the loss of such privileges of use during class.

3.   Academic Integrity

Students will be held to the following standards of the UCF Creed:

a) *Integrity*: I will practice and defend academic and personal honesty.
b) *Scholarship*: I will cherish and honor learning as a fundamental purpose of my membership in the UCF community.

c) *Community*: I will promote an open and supportive campus environment by respecting the rights and contributions of every individual.

d) *Creativity:* I will use my talents to enrich the human experience.

e) *Excellence:* I will strive toward the highest standards of performance in any endeavor I undertake.

In addition, all work submitted for this course must be original work, created specifically in response to the course assignments as listed in the syllabus and may not be from assignments submitted for other classes.

4. **A Word on Cheating and Plagiarism:**

Academic dishonesty in any form will not be tolerated! Violations of student academic behavior standards are outlined in The Golden Rule, the University of Central Florida's Student Handbook. See http://www.ucf.edu/goldenrule/ for further details.

1. Cheating is defined as non-permissible written, visual or oral assistance including that obtained from another student that is used on examinations, course assignments or projects. The unauthorized possession or use of examination or course related material shall also constitute cheating.

2. Plagiarism is defined as deliberately using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own. Any student failing to properly credit ideas or materials taken from another has plagiarized. This includes copying and pasting website content into one's papers without proper citation.

NOTE: *Wikipedia*, an online "encyclopedia" is neither a reliable nor reputable source for research. Student papers or projects citing or using Wikipedia as a source will receive a grade of 0.

3. A student who has assisted another in any of the aforementioned breach of standards shall be considered **equally** culpable.

ACADEMIC ACTION
* Taken by Instructor, Chair, or Dean of College*
1. Loss of credit for specific assignment, examination or project.
2. Removal from course with a grade of "F" and/or

CONDUCT REVIEW ACTION
Taken by the Office of Student Conduct
1. Warning
2. Probation
3. Suspension
4. Expulsion
5. Permanent conduct record with UCF accessible by other institutions by request.

For more information, please contact the Office of Student Conduct at 823-2851.

VI.   <u>Evaluation and Grading system</u>

To be fair to all students in this class, *all assignments are due on time*. There is no makeup procedure for missed assignments. An extra credit assignment (see below) is available for those who want to make up missed work. No exams will be given early or late. Special arrangements may be made in cases of emergency. Please contact the professor in such situations.

NOTE: The withdrawal deadline for the semester is posted on the *ucf.edu* website. Incompletes are only given in very rare circumstances involving last minute, grave emergencies, to students of good academic standing in the class at the time of the emergency. Therefore, if you are concerned about a possible failing grade, you are encouraged to withdraw from class before the withdrawal deadline.

1. Grades

Grading Component	% of Grade
Problem selection	10%
Participation	10%
Reflection papers	20%
Facilitation of class discussion	20%
Analysis paper—outline	10%
Analysis paper—final draft	30%
Total	100%

2. Grading Scale

A	93-100%	C	73-76%
A-	90-92%	C-	70-72%
B+	87-89%	D+	67-69%
B	83-86%	D	63-66%
B-	80-82%	D-	60-62%
C+	77-79%	F	0-59%

VII.   <u>**Major Topics of the Course**</u>

- What is educational psychology?
- Current controversies
- Development and individual differences
- Social cognition
- Affect and emotions
- Motivation
- Beliefs and belief change
- Educational contexts
  - Teaching
  - Peers
- Societal and cultural perspectives

VIII.   <u>**Student Disability Statement**</u>

Students with disabilities are not required to register with any office or department on campus. However, when requesting specific classroom accommodations for a disability, these students are required to register with Student Disability Services before receiving accommodations. At the University of Central Florida, the Office of Student Disability Services (SDS) is responsible for coordinating and implementing disability services for students.   Student Disability Services is the located in the Student Resource Center Room 132, phone (407) 823-2371, TTY (Text Telephone) / TDD (Telecommunication Device for the Deaf) only phone (407) 823-2116 or e-mail: sds@mail.ucf.edu.

IX.   Schedule of Classes

EDP 6XXX COURSE SCHEDULE

Date	Topic	Reading Required
Week 1	**What is educational psychology?**	
Week 2	**Current controversies**	Reflection Paper due
Week 3	**Development and individual differences**	Reflection Paper due **Problem assessment due**
Week 4	**Development and individual differences** Student-led discussions: Group A	Reflection Paper due
Week 5	**Social cognition** Student-led discussions: Group B	Reflection Paper due
Week 6	**Affect and emotions** Student-led discussions: Group C	Reflection Paper due **Outline due**
Week 7	**Self beliefs** Student-led discussions: Group D	Reflection Paper due
Week 8	**Motivation: Goal theory** Student-led discussions: Group E	Reflection Paper due
Week 9	**Motivation: Intrinsic vs. extrinsic** Student-led discussions: Group F	Reflection Paper due
Week 10	**Motivation: Praise, & Self-Regulation** Student-led discussions: Group G	Reflection Paper due
Week 11	**Beliefs and belief change** Student-led discussions: Group H	Reflection Paper due **Draft of Final Paper due**
Week 12	**Educational contexts: Teaching** Peer assessment of rough drafts	Reflection Paper due
Week 13	**Educational contexts: Peers** Student-led discussions: Group I	Reflection Paper due **Final paper due**
Week 14	**Societal and cultural perspectives** Student-led discussions: Group J	Reflection Paper due
Week 15	**Current controversies revisited**	**Paper revisions due**
Finals week	**Completion of student-led discussions**	

X.   Teaching Strategies Used:

Peer Tutoring
Problem Solving
Researching
Show Patterns
Summarize
Predictions
Venn Diagrams
Compare/Contrast
Flow Charts
Concept Mapping
Overheads
Brainstorming
Group discussion
Use student's experiences
Graphic organizers
Group reading
Analyze, evaluate, synthesize
Models

XI.   Syllabi Addendum

Course Title & Number: EDP 6XXX: Seminar in Applied Learning and Instruction

Faculty who teach this course (full- time, adjuncts, and TA's): Michele Gill, Ph.D., Bobby Hoffman, Ph. D., Kay Allen, Ph.D. ,

XII.   ESOL STANDARDS

Standard #18: Create a positive classroom environment to accommodate the various learning styles and cultural backgrounds of students. (FEAP/PEC 5, 9)

Assessment: In at least one reflection paper, students will incorporate research and theory on diversity to provide at least one recommendation to improve the learning environment of students with various learning styles and cultural backgrounds.

XIII.   Bibliography

(see attached)

XIV.   <u>**Descriptive Information**</u>

Department:	**Educational Studies**
Course Title:	**Seminar in Applied Learning and Instruction II**
Course Requirements:	
Mode of Instruction:	**Lecture, discussion**
Course Number:	**EDP 6XXX**
Course Credit:	**3 semester hours**
Semester:	
Instructor:	
Email Address:	
Office:	
Office Hours:	
Phone:	

Catalog Description:

An overview of contemporary theories and research related to issues in human learning and instruction with an emphasis on practical applications for educational and workplace settings. This course is a continuation of the Applied Learning and Instruction Seminar I with an emphasis on cognition, critical thinking, problem solving, individual differences, and assessment of learning outcomes.

XV.   <u>**Statement of Course Goals and Objectives**</u>

KEY:
    ESOL = English for Speakers of Other Languages
    FEAP = Florida Educator Accomplished Practices
    PEC = Professional Education Competencies

Through a seminar style format, using class discussions, video and/or computer presentations, student presentations, written assignments, and group interactions, the student will, upon completion of the course, be able to:

13. Understand the role of psychology in general, and educational psychology in particular, plays in the modern classroom. (FEAP/PEC 7)
14. Distinguish more- from less-facilitating learning environments based on an understanding of educational psychological theory. (FEAP/PEC 3, 7, 9, 12; ESOL 18)

15. Create a positive classroom environment to accommodate the various learning styles and cultural backgrounds of students. (LEP). (ESOL 18/PEC 14)
16. Think critically about issues related optimal motivational, learning and instruction. (FEAP 4, PEC 4)
17. Gain an overview of the key problems issues related to teaching and learning in school and workplace settings.
18. Use problem solving skills to solve instructional challenges for diverse populations (FEAP 5, PEC 5)
19. Evaluate contemporary issues relating to learning such as multiple intelligence, theories, rewards, learning styles, diversity, critical thinking, high stakes testing, beliefs about learning, the role of teacher, and the nature and scope of learning. (FEAP 8, PEC 8)
20. Distinguish learning milestones in the development of expertise. (FEAP 7, PEC 7)
21. Evaluate instruction to promote meaningful learning and transfer. (FEAP 1, PEC 1)
22. Create research-based solutions to successfully address the challenges of learning and instruction found in educational and workplace settings. (FEAP 9)
23. Analyze, synthesize and evaluate at least one topic of interest in the area of educational psychology.
24. Critically evaluate a current practice concerning learning or instruction in an educational or workplace setting. (FEAP 1, PEC 1)

XVI.   **Required Texts and Readings**
   - Course pack of selected readings

Recommended Text:
   - *Publication Manual of the American Psychological Association* (5th ed.). (2001).
     Washington, D.C.: American Psychological Association

XVII.   **Academic Course Requirements**

   1. Class Participation

   Each week you are required to read all materials listed in the course outline. Your ability to discuss the reading material will partially contribute towards earning class participation points. Each week you should be prepared to contribute to class discussion and participate in group activities. Comments, concerns, questions and your personal perspectives will serve as the basis for our weekly class discussions. Thoughtful and creative critique of ideas, including alternative conceptions is warranted and encouraged. Group activities will consist of practical application of theoretical ideas introduced by your readings or discussions. You must be in class to earn credit for class participation and class participation points cannot be made up.

2. Problem Selection Assessment

One of the main objectives of this course is to apply theory in educational psychology to an actual instructional issue in the classroom or workplace. Beginning in Week One, you should identify an actual or theoretical problem that will serve as the foundation for the entire semester. The problem you identify should be broad in scope and be one that is within your control to influence. The purpose of the problem selection assessment is to provide a foundation for you to apply your knowledge from the class. Each week you will interpret the weekly readings and discussions and apply the knowledge to the problem you have identified.

The problem selection assessment is comprised of a 1 - 2 page double-spaced typed description of the issue you would like to influence or the problem you want to resolve. Your problem description should be completed using APA format and should specifically outline a) the problem, b) your goal, c) key individuals, d) the intended solution, and e) the methodology you plan to use to resolve the problem.

3. Analysis Paper

As a means of demonstrating your ability to apply theory to practice, you will critically analyze a classroom or workplace instructional issue that is of interest and/or concern to you. You must choose a different issue than the one selected in Current Readings I. The analysis paper is the culmination paper for the course. The analysis paper consists of applying the research and theory related to the issue you have identified in the problem assessment. Each week we will review articles that offer various perspectives on instructional issues. Your task is to review key articles that relate to both side of the issue, evaluate the extant research on this topic, and then provide a synthesis of theory and research on this topic in the form of an action plan to address the issue of concern. Further details and a grading rubric are located on Webcourses@UCF.

4. Reflection Papers

Each week, you are required to submit a 1 - 2 page, typed, double-spaced reaction paper based upon the weekly readings. A weekly reaction paper requires you to read and reflect on the assigned reading before each class meeting. Agree or disagree with the authors' position or argument. Provide an example or counterexample that you have come across in your experience or have read in another text, or research article. Use the reaction paper to identify which aspects of the reading you found most important, or worthy of class discussion. Most importantly, discuss how the weekly readings might bear on the

instructional or learning issue you will be addressing in your final paper. Be creative and thoughtful.

5. Lead a class discussion

Each week a student or group of students will be responsible for leading the discussion on the weekly readings. For each weekly reading(s), student(s) will:

- Prepare a 20-minute discussion that reviews the reading for that day.

- Offer a critique and analysis of the article. What did you find helpful about the article? What was confusing? What are the practical implications of this article for learning or instruction? Ask relevant questions to start the discussion.

- Search for other relevant articles on the topic. It is the responsibility of the student to look for related articles and books in the library to help lead the discussion.

- Prepare overheads or handouts for the class discussion.

XVIII.   Administrative Course Requirements

4.   Attendance and Participation

In the case of illness or emergency, contact the professor via **Course Mail** on **Webcourses** before your absence if possible or soon afterward to explain the absence. *More than 1 absence or 1 day of not being prepared for class may result in up to 10 points being deducted from your final grade*. Pagers and cell phones must be either turned off or set to a silent mode such as vibrate.

5.   Technology Use during F2F Classes

Bringing your laptop to use during class is a privilege; therefore, students are expected to use computers appropriately for note-taking and other class-related purposes. Using a computer or other electronic device (PDA, cell phone, MP3 player, etc.) to engage in non-class related activities such as instant messaging, web surfing, checking email, etc. will result in the loss of such privileges of use during class.

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f) *Integrity*: I will practice and defend academic and personal honesty.
g) *Scholarship*: I will cherish and honor learning as a fundamental purpose of my membership in the UCF community.
h) *Community*: I will promote an open and supportive campus environment by respecting the rights and contributions of every individual.

i) Creativity: I will use my talents to enrich the human experience.

j) Excellence: I will strive toward the highest standards of performance in any endeavor I undertake.

In addition, all work submitted for this course must be original work, created specifically in response to the course assignments as listed in the syllabus and may not be from assignments submitted for other classes.

4. **A Word on Cheating and Plagiarism:**

Academic dishonesty in any form will not be tolerated! Violations of student academic behavior standards are outlined in The Golden Rule, the University of Central Florida's Student Handbook. See http://www.ucf.edu/goldenrule/ for further details.

1. Cheating is defined as non-permissible written, visual or oral assistance including that obtained from another student that is used on examinations, course assignments or projects. The unauthorized possession or use of examination or course related material shall also constitute cheating.

2. Plagiarism is defined as deliberately using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own. Any student failing to properly credit ideas or materials taken from another has plagiarized. This includes copying and pasting website content into one's papers without proper citation.

NOTE: *Wikipedia*, an online "encyclopedia" is neither a reliable nor reputable source for research. Student papers or projects citing or using Wikipedia as a source will receive a grade of 0.

3. A student who has assisted another in any of the aforementioned breach of standards shall be considered **equally** culpable.

ACADEMIC ACTION
* Taken by Instructor, Chair, or Dean of College*
1. Loss of credit for specific assignment, examination or project.
2. Removal from course with a grade of "F" and/or

CONDUCT REVIEW ACTION
Taken by the Office of Student Conduct
1. Warning
2. Probation
3. Suspension
4. Expulsion
5. Permanent conduct record with UCF accessible by other institutions by request.
For more information, please contact the Office of Student Conduct at 823-2851.

XIX.   Evaluation and Grading system

To be fair to all students in this class, *all assignments are due on time*. There is no makeup procedure for missed assignments. An extra credit assignment (see below) is available for those who want to make up missed work. No exams will be given early or late. Special arrangements may be made in cases of emergency. Please contact the professor in such situations.

NOTE: The withdrawal deadline for the semester is posted on the *ucf.edu* website. Incompletes are only given in very rare circumstances involving last minute, grave emergencies, to students of good academic standing in the class at the time of the emergency. Therefore, if you are concerned about a possible failing grade, you are encouraged to withdraw from class before the withdrawal deadline.

3. Grades

Grading Component	% of Grade
Problem selection	10%
Participation	10%
Reflection papers	20%
Facilitation of class discussion	20%
Analysis paper—outline	10%
Analysis paper—final draft	30%
Total	100%

4. Grading Scale

A	93-100%	C	73-76%
A-	90-92%	C-	70-72%
B+	87-89%	D+	67-69%
B	83-86%	D	63-66%
B-	80-82%	D-	60-62%
C+	77-79%	F	0-59%

XX.   Major Topics of the Course

- Current controversies, part two
- Cognition and cognitive processes
  - Critical thinking
  - Problem solving
  - Knowledge versus beliefs
  - Metacognition and skill acquisition
- Individual differences
  - Intelligence and the development of expertise
  - Diversity, learning disabilities, and cultural differences
- Educational contexts
  - Technology
- Assessment of learning and teaching
- The future of educational psychology

XXI.   Student Disability Statement

Students with disabilities are not required to register with any office or department on campus. However, when requesting specific classroom accommodations for a disability, these students are required to register with Student Disability Services before receiving accommodations. At the University of Central Florida, the Office of Student Disability Services (SDS) is responsible for coordinating and implementing disability services for students.   Student Disability Services is the located in the Student Resource Center Room 132, phone (407) 823-2371, TTY (Text Telephone) / TDD (Telecommunication Device for the Deaf) only phone (407) 823-2116 or e-mail: sds@mail.ucf.edu.

XXII.   <u>**Schedule of Classes**</u>

EDP 6XXX COURSE SCHEDULE

<u>Date</u>	<u>Topic</u>	<u>Reading Required</u>
Week 1	**Overview/Introduction**	
Week 2	**Current controversies, part two**	Reflection Paper due
Week 3	**Cognition and cognitive processes**	Reflection Paper due **Problem assessment due**
Week 4	**Critical thinking** Student-led discussions: Group A	Reflection Paper due
Week 5	**Problem solving** Student-led discussions: Group B	Reflection Paper due
Week 6	**Metacognition and skill acquisition** Student-led discussions: Group C	Reflection Paper due **Outline due**
Week 7	**Knowledge versus beliefs** Student-led discussions: Group D	Reflection Paper due
Week 8	**Individual differences** Student-led discussions: Group E	Reflection Paper due
Week 9	**Intelligence and the development of expertise** Student-led discussions: Group F	Reflection Paper due
Week 10	**Diversity, learning disabilities, and cultural differences** Student-led discussions: Group G	Reflection Paper due
Week 11	**Educational contexts: Technology** Student-led discussions: Group H	Reflection Paper due **Draft of Final Paper due**
Week 12	**Assessment of learning and teaching** Peer assessment of rough drafts	Reflection Paper due
Week 13	**Assessment of learning and teaching** Student-led discussions: Group I	Reflection Paper due **Final paper due**
Week 14	**The future of educational psychology** Student-led discussions: Group J	Reflection Paper due
Week 15	**Current controversies, revisited**	**Paper revisions due**
Finals week	**Completion of student-led discussions**	

XXIII.   Teaching Strategies Used:

Peer Tutoring
Problem Solving
Researching
Show Patterns
Summarize
Predictions
Venn Diagrams
Compare/Contrast
Flow Charts
Concept Mapping
Overheads
Brainstorming
Group discussion
Use student's experiences
Graphic organizers
Group reading
Analyze, evaluate, synthesize
Models

XXIV.   Syllabi Addendum

Course Title & Number: EDP 6XXX: Seminar in Applied Learning and Instruction

Faculty who teach this course (full- time, adjuncts, and TA's): Michele Gill, Ph.D., Bobby Hoffman, Ph. D., Kay Allen, Ph.D. ,

XXV.   ESOL STANDARDS

Standard #18: Create a positive classroom environment to accommodate the various learning styles and cultural backgrounds of students. (FEAP/PEC 5, 9)

Assessment: In at least one reflection paper, students will incorporate research and theory on diversity to provide at least one recommendation to improve the learning environment of students with various learning styles and cultural backgrounds.

XXVI.   Bibliography

(see attached)

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E. SAMPLE EMAIL INQUIRIES ABOUT THE MA IN APPLIED LEARNING DEGREE PROGRAM

>>> "Stephenson, Robert J." <stepher@ocps.k12.fl.us> 2/13/2007 10:02 AM >>>

Greetings and salutations, Dr. Gill.

My name is Robert Stephenson and I was in one of your developmental courses about two years ago for the Initial Teacher Preparation Program. I had very little understanding of or exposure to educational psychology from my undergraduate degree in biopsychology from UC Davis, but a new career interest in teaching and developmental theory, as well as you and your course were very inspiring, so I started investigating. I intended on completing the ITPP to finish my teaching certificate and then continuing on into one of the Masters of Education programs at UCF and hopefully on to a doctorate program, however I got a little sidetracked. My daughter was born ten months ago and both my wife and I slowed down to transition into parenthood. Well, that and we ran out of money. (As any proud papa, I attached a picture. Email is now the virtual plastic wallet photo window. Plus I know you like kids so you'll appreciate her fangs and gooey face.)

Now things are starting to align where I can continue my coursework and I noticed on the availability schedule on your door that you are working on an Educational Psychology Masters program. Is any literature available or a description of the program online yet? When will the program officially start? Would you be the mentor professor? (...I say that in a good way, as in "I would very much like to be your student" as opposed to the "Uh oh, not Professor Gill again...")

Any information will be helpful as I make the transition back into university and UCF.

Many thanks,

 - Robert Stephenson

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Bobby Hoffman - MA Degree in Applied Learning & Instruction

From: "Johns, David" <JohnsD@vfservices.com>

To: <mgill@mail.ucf.edu>, <bhoffrnan@mail.ucf.edu>

Date: 2/16/2007 10:53 AM

Subject: MA Degree in Applied Learning & Instruction

To Whom It May Concern:

We have received and reviewed your recent letter regarding possible input to develop a curriculum for a Master of Arts degree in Applied Learning and Instruction. We applaud your efforts and would like very much to be involved in assisting you with this project.

Value has spent many years studying ways to find prospective employees who have **initiative** that can adapt to our way of doing business. We have spent an equal amount of time understanding how best to **engage** our work teams once we have selected the best candidate for the position. **The result of our studies and the implementation of our findings is that Value is the most profitable operation on a per unit basis in our industry in the United States.**

Our research and development of learning experiences for our employees along with our ability to measure and predict productivity have become hallmarks in our industry. In a similar manner, UCF can become a significant contributor to the success of business and industry in Florida by casting a jaundice eye on the worker candidate pool in Florida today (simply stated, **it stinks**) and developing ways to better prepare students for the workplace. At the same time, your mission can be enhanced by teaching about ways to take away obstacles to learning and development in the workplace if the candidate is, indeed, the right candidate.

If you wish to visit with us, we would be pleased to participate in this effort. You should know in advance that we will be candid and straightforward in our discussions about what we have found regarding the lack of preparation on the part of both high school and college graduates relative to the ability of these graduates to become productive participants in a for profit environment.

While his schedule is very crowded, it might be helpful for you to spend some time with our founder and CEO, John Thedford. John has been the driving force behind Value's journey over the past ten years to where we are today. Not only are we the most profitable on a per store basis in our entire industry, but we have an employee turnover figure that is the envy of retail nationwide. We have been told by the Gallup Organization that we are among their very best and most successful clients worldwide. Gallup has further documented that the level of customer satisfaction as well as the level of employee satisfaction at Value is among the highest of all their clients worldwide. This unprecedented level of success has been the result of a vision John has had since opening our first store in the early 90's.

While John is the driving force behind our success, our entire management team, from store managers to our officers, clearly understands and supports our position that any and

all success comes from our people….. **engaged people who have initiative.**

If you can come up with a curriculum that will help educators understand how to define, identify and support engagement and initiative among any workforce, then you will succeeded beyond your wildest dreams.

Visit our web site at www.valuepawnandjewelry.com for more information about our company. Call on us if you feel we can contribute to your effort.

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johnsd @vfservices.com

F. LETTERS TO SCHOOLS AND BUSINESSES

October 28, 2007

Ms. Teacher
School Middle School
Orlando, FL 32816

Dear Ms. T:

Are you or other teachers and administrators at your school interested in obtaining an advanced degree in education that will allow you to apply the latest research on how people learn to improve your ability to teach both children and adults? Would you like a flexible program that is tailored to those who work full-time by offering night and online classes? The Department of Educational Studies at UCF is currently developing a program to address these needs and we would like your help. If you experience one or more of these challenges to learning in your schools, we need your opinion:

- Changing the beliefs, attitudes and behaviors of students, parents, teachers, and administrators as to what constitutes good instruction
- Understanding what motivates learners
- Identifying and implementing the latest findings from important research
- Deciding how, when, where and in what modality to provide the most effective instruction

Our goal is to develop a Master of Arts degree in Applied Learning and Instruction. Individuals completing this combine online and in-person program will be qualified to:

- Diagnosis obstacles to effective learning
- Evaluate evidence-based research to select the most useful instructional methods
- Implement techniques to motivate learners and teachers
- Design and develop customized assessments to enhance learning
- Design and select optimal learning environments
- Assess and measure the success of learning initiatives

With your assistance we can design a program that will work within your existing school structure to help bring the latest skills and strategies to your students and teachers. We will be contacting you by phone within the next few weeks to collect your input and assess your interest in this exciting new program. In the interim, if you would like to designate a particular associate as our contact please email either one of us at mgill@mail.ucf.edu or bhoffman@mail.ucf.edu. Thank you for your time and consideration.

Best regards,

Dr. Michele Gill
Dr. Bobby Hoffman

October 28, 2007

Dr. Michele Bill
Director Human Resources
Progress Energy
Orlando, FL 32816

Dear Dr. Bill:

The rules changed a long time ago. The most successful businesses today are those equipped with the most versatile arsenal of skills, knowledge and talent. Organizations that devote time, energy, and resources to enhancing the development of their staff are simply more profitable ($). The challenge remains in deciphering the best way to design and deliver instruction while simultaneously cultivating a willingness to learn.   The Department of Educational Studies at UCF is currently developing a program to address these needs and we would like your help. If you experience one or more of these challenges to cultivating talent and productivity we need your opinion:

- Changing the beliefs, attitudes and behaviors of employees
- Understanding what motivates employees
- Identifying and implementing the latest findings from important research
- Deciding how, when, where and in what modality to deliver training and instruction

Our goal is to develop a Master of Arts degree in Applied Learning and Instruction. Individuals completing this combine online and in-person program will be qualified to:

- Diagnosis workplace obstacles impeding the enhancement of skills
- Evaluate evidence-based research to increase productivity
- Implement techniques to motivate employees
- Design and develop customized tools to enhance learning
- Identify and perfect learning environments
- Assess and precisely measure the success of learning initiatives

With your assistance we can design a program that will bring the latest skills and strategies to your organization while concurrently enhancing the marketability of program participants. We will be contacting you by phone within the next few weeks to collect your input and assess your interest in this exciting new program. In the interim, if you would like to designate a particular associate as our contact please email either one of us at mgill@mail.ucf.edu or bhoffman@mail.ucf.edu.
Thank you for your time and consideration.

Best regards,

Dr. Gill
Dr. Hoffman

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
UCF Industrial/ Organizational Psychology	The Master of Science degree program in Industrial/Organizational Psychology focuses on the application of psychological principles to organizations and emphasizes the major areas of selection and training of employees, applied theories of organizational behavior including models of motivation, job satisfaction, and productivity; test theory and construction; assessment center technology; statistics and experimental design and a variety of current topics. Industrial/Organizational graduates are involved in many issues of critical importance to society including fairness in the selection and treatment of employees, the creation of work environments that maximize the satisfaction and productivity of	Nonthesis Option Academic Course Work—35 Credit Hours • INP 6058 Job and Task Analysis (3 credit hours) • INP 6080 Advanced Practice in Industrial/Organizational Psychology (3 credit hours) • INP 6094 Current Topics in Industrial/Organizational Psychology (3 credit hours) • INP 6215 Assessment Centers and Leadership (3 credit hours) • INP 6317 Organizational Psychology and Motivation (3 credit hours) • INP 6605 Training and Performance Appraisal (3 credit hours) • PSY 6216 Advanced Research Methodology I (4 credit hours) • PSY 6308 Psychological Testing I (4 credit hours) • PSY 6318 Applied Testing and Selection (3 credit hours) • SOP 5059 Advanced Social Psychology (3 credit hours) • INP 6072 Applied Research Methods in Industrial/Organizational Psychology (3 credit hours)	40	**Psychology** University of Central Florida 4000 Central Florida Orlando, FL 32816 **Phone**: 407-823-4344 **Email**: psyinfo@mail.ucf.edu

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
	employees, and the study of technological influences on human performance.	Practicum—3 Credit Hours • INP 6946 Industrial Psychology Practicum I (3 credit hours) Research—2 Credit Hours • INP 6908 Directed Independent Studies (2 credit hours) Thesis Option Academic Course Work—29 Credit Hours • INP 6058 Job and Task Analysis (3 credit hours) • INP 6215 Assessment Centers and Leadership (3 credit hours) • INP 6317 Organizational Psychology and Motivation (3 credit hours) • INP 6605 Training and Performance Appraisal (3 credit hours) • INP 6080 Advance Practice in Industrial/Organizational Psychology (3 credit hours) • PSY 6216 Advanced Research Methodology I (4 credit hours) • PSY 6308 Psychological Testing I (4 credit hours) • PSY 6318 Applied Testing and Selection (3 credit hours)		

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
		• INP 6072 Applied Research Methods in Industrial/Organizational Psychology (3 credit hours) Elective Course Work—3 Credit Hours Choose one course from the following: • SOP 5059 Advanced Social Psychology (3 credit hours) • INP 6094 Current Topics in Industrial/Organizational Psychology (3 credit hours) • INP 6946 Industrial Psychology Practicum I (3 credit hours) Thesis—8 Credit Hours • INP 6971 (8 credit hours) Students electing the nonthesis option are expected to materially participate in the conduct of research under the supervision of a faculty adviser and in the preparation of a research report of sufficient quality to allow submission for publication or presentation at a national professional association conference. The research report will be evaluated jointly by the faculty adviser and the program director. Practicum Practicum assignments serve to provide the student with experience in an applied setting while also aiding the organization in which the practicum		

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
		occurs to meet some specific project need. Practicum possibilities generated by the I/O faculty and students may involve settings in private industry, federal, state, or local government, educational institutions, or consulting firms. Practicum assignments involve one-semester commitments ranging from 12 to 15 hours per week on the part of the student. Depending on the nature of the assignment, this time may be distributed in a variety of ways among the organization, library, field work, etc. Practicum placements are initiated with a behavioral agreement between the graduate student and the organization. Behavioral agreements and performance objectives are jointly decided by the supervising faculty member, the organization representative, and the student. Full-time students are typically assigned practicum projects for the fall or spring terms of their second year.		
UCF – M.A in Applied Experimental and Human Factors Psychology	Students enrolled in the Applied Experimental and Human Factors (AEHF) Ph.D. track may elect to earn a Master of Arts in AEHF Psychology in route to their doctorate. This is a nonterminal master's degree available only to students in the AEHF	Required Courses—67 Credit Hours • EIN 5248C Ergonomics (3 credit hours) • EIN 6258 Human Computer Interaction (3 credit hours) • EXP 5256 Human Factors I (3 credit hours) • EXP 6257 Human Factors II (3 credit hours)	Minimum of 76 credit hours beyond the bachelor's degree. Required Core	**Psychology** University of Central Florida 4000 Central Florida Orlando, FL 32816 **Phone**: 407-823-4344

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
	Psychology Ph.D. track. For more information, see the requirements for the AEHF Psychology Ph.D. track. "Human Factors" is an integrative approach to practice and design that focuses on the interaction between humans and the environment. It utilizes research, theory, and knowledge of human behavior, capabilities, and limitations to add the "human" into the scientific equation and make life easier, safer, and more enjoyable. The program's mission is to develop the capacity to design, conduct, and apply human factors research in a variety of professional settings. Students learn about the content and techniques of human factors psychology—including statistical and quantitative	- EXP 6258 Human Factors III (3 credit hours) - EXP 5208 Sensation and Perception (3 credit hours) - EXP 6116 Visual Performance (3 credit hours) - EXP 6255 Human Performance (3 credit hours) - EXP 6506 Human Cognition and Learning (3 credit hours) - EXP 6541 Advanced Human-Computer Interaction (3 credit hours) - INP 7089 Human Factors Professional Issues (1 credit hour) - INP 6317 Organizational Psychology and Motivation (3 credit hours) - PSB 5005 Physiological Psychology (3 credit hours) - PSY 6216 Advanced Research Methodology I (4 credit hours) - PSY 6217 Advanced Research Methodology II (4 credit hours) - PSY 6219C Advanced Research Methods III (4 credit hours) - PSY 7980 Doctoral Dissertation (15 credit hours) - SOP 5059 Advanced Social Psychology (3 credit hours) Internship—6 Credit Hours - EXP 6945 Human Factors Internship (8 credit hours; to be completed	Courses—52 Credit Hours	**Email**: psyinfo@mail.ucf.edu

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
	procedures, experimental design, survey methods, computer techniques, and other research methodologies. Students select a concentration area within the Applied Experimental and Human Factors Psychology program, which may be in human-computer interaction, human-machine-environment interface, human performance, human factors in simulation and training, or other areas of interest with the adviser's authorization.	sometime during the last two years of program) Electives—18 Credit Hours Students should choose electives in concentrated course groupings: for example, human-machine systems, performance measurement and evaluation, or simulation and training. Other elective course groupings may be developed for the student's specific interests. Six credit hours of electives must be taken outside of the department. • DEP 5057 Developmental Psychology (3 credit hours) • EIN 5251 Usability Engineering (3 credit hours) • EXP 5067 Human Factors and Aging (3 credit hours) • PPE 5055 Personality Theories (3 credit hours) • INP 5825 Human-Computer Interface (HCI) Design: A Team Approach (3 credit hours)		
UCF-Curriculum and Instruction	The Master's of Curriculum and Instruction program is designed to give educators a broad, general background, and allows them to pursue their interests in a wide variety of topics. It offers	Professional Teaching Certification Courses—15 Credit Hours Social Factors in American Education Principles of Instruction Lifespan Human Development and Learning Measurement and Evaluation in Education An approved special methods course in teaching field Core C&I Courses—12-15 Credit Hours	36-42 credit hours	David Boote, Ph.D., dboote@mail.ucf.edu phone: (407) 823-4160

School	Program Description	Core Courses	Credit Hours	Contact
	specializations in: curriculum studies, foreign language education, gifted middle school, multicultural and global, pre-K handicapped, and sports leadership. The program is designed for educators interested in becoming better classroom teachers, becoming curriculum and instruction leaders in their schools or school district, or performing instructional design tasks in military, industry, or business settings.	Required: Analysis of Classroom Teaching Fundamentals of Graduate Research in Education Curriculum Theory and Organization Integrating Technology into the Curriculum And, if needed, one of the following electives: Learning Theories Applied to Classroom Instruction and Management Assessment of Learning Perspectives on Education Contemporary Issues in Education Concentration—9-12 Credit Hours Option I: Approved electives in subject area to meet certification (9-12 credit hours) Option II: Select one of the track options offered in the M.Ed. Program (12-15 credit hours) Internship—Optional—Only required for students who have no teaching experience. EDG 6940 Graduate Internship (6 hours)		
UCF-Lockstep M.B.A	The 33-month lockstep evening MBA is targeted towards applicants who wish to obtain a MBA degree while continuing in their career path. This	Professional Core (39 hours) Core I: Decision-Making Tools (18 hours) • BUL 6444 Law and Ethics (3 hours)*	39 hours	Graduate Business Programs Office- 407-823-4723 or cbagrad@bus.

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
	program admits only in the fall semester and offers two evening courses per semester allowing for graduation in 33 months. Classes meet two times a week every Fall and Spring semesters and during the second summer of the program.	• ECO 6416 Applied Business Research Tools (3 hours) • MAN 6245 Organizational Behavior & Development (3 hours) • ACG 6425 Managerial Accounting Analysis (3 hours) Accounting undergraduate majors may not take ACG 6425, but may substitute any other business elective. • ECO 6115 Economic Analysis of the Firm (3 hours) • GEB 6365 International Business Analysis (3 hours) Core II: Decision Applications (12 hours) • MAR 6816 Strategic Marketing Management (3 hours) • FIN 6406 Strategic Financial Management (3 hours) • ISM 6367 Strategic Information Systems (3 hours) • MAN 6721 Applied Strategy and Business Policy (3 hours) Requires grade of "B" or better. Electives (9 hours) Unrestricted electives include any 6000 level business course. All pre-requisites must be met for any elective course. A maximum of two courses or 6 hours may be taken outside the College of Business, with permission from the Associate Dean for Graduate Programs prior to taking the course. A maximum of 6 hours may be used toward an internship or independent study.		ucf.edu

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
		The MBA program does not require a thesis or a comprehensive exam.		
UCF- M.B.A	. Applicants selected for the One-Year MBA program will take courses restricted to students in a cohort group, and students will be able to choose from a variety of internship and elective options. The One-Year MBA begins each fall semester and is a limited access program.	MBA Foundation Core (12 hours) Students that do not have an undergraduate degree in Business Administration, or do not have the equivalent undergraduate coursework, will be required to complete the MBA Foundation Core prior to starting the one year MBA. Apply to MBA with foundation core for Spring or Summer admission if you need this option. • Accounting Foundations • Foundations of Finance • Economic Concepts with Math Applications • Business Statistical Concepts and Methods MBA Professional Core (39 hours) Fall Semester (12 hours) • MAN 6245 Organizational Behavior and Development (3 hours) • ECO 6416 Applied Business Research Tools (3 hours) • ECO 6115 Economic Analysis of the Firm (3 hours)		Graduate Business Programs Office- 407-823-4723 or cbagrad@bus.ucf.edu

School	Program Description	Core Courses	Credit Hours	Contact
		• ACG 6425 Managerial Accounting Analysis (3 hours) Spring Semester (9 hours) • BUL 6444 Law and Ethics (3 hours) • MAR 6816 Strategic Marketing Management (3 hours) • FIN 6406 Strategic Financial Management (3 hours) Summer Semester (9 hours) • GEB 6365 International Business Analysis (3 hours) • MAN 6721 Applied Strategy and Business Policy (3 hours) • ISM 6367 Strategic Information Systems (3 hours) MBA Required Elective and/or Internship Options (9 hours) MBA students must complete 9 hours of electives as part of their degree program. One Year MBA students can choose from the following options: • Elective Option (9 hours): If you choose this option and wish to complete the program in three semesters you will follow the current MBA Cohort course schedule for Fall, Spring and Summer. Add one elective to Fall and two electives to Spring term and graduate in Summer. Due to the nature of how elective courses are scheduled and their possible prerequisites, failure to properly plan electives could delay completion of the program.		

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
		• Internship (3 or 6 hours) + Elective (3 or 6 hours) Option: An internship requires 288 work hours to satisfy each 3 credit hour internship course. For more information on internship options, call Robin Hofler at 407-823-6183. For assistance arranging an internship, contact 407-823-JOBS, or click here. • Four Semester Option (9 hours): If you choose this option you will follow the current MBA Cohort course schedule for Fall, Spring and Summer and use the following Fall term to complete your internship or electives. If you choose this option, you will be able to walk with your class at the Summer Graduation Ceremony, and then receive your diploma after you complete the Fall semester.		
UCF-Management-Human resources/ change management	The College of Business Administration offers a Master of Science in Management degree that provides an alternative to the MBA degree for students who desire specialized study and the development of a high level of professional proficiency in a functional area of business. The primary track in the Management program is Human Resources and Change Management.	Required Courses—18 Credit Hours • MAN 6285 Change Management (3 credit hours) • MAN 6305 Human Resources Management (3 credit hours) • MAN 6311 Advanced Topics in Human Resources Management (3 credit hours) • ECO 6416 Applied Business Research Tools (3 credit hours) • MAN 6395 Leadership Development and Coaching	30	Foard Jones, Ph.D. , Associate Professor Phone Number: 407-823-2925 cbagrad@bus.ucf.edu

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
	Students completing the master's program in Human Resources and Change Management will be prepared to work in organizations in such areas as human resources, strategic planning, organizational effectiveness, staffing, and employee relations	(3 credit hours) • MAN 6385 Strategic Human Resources Management (3 credit hours) Elective Courses—12 Credit Hours • MAN 6286 Innovation and Strategic Change (3 credit hours) • MAN 6323 Human Resources Information Systems (3 credit hours) • MAN 6448 Conflict Resolution and Negotiation (3 credit hours) • MAN 6915 Applied Field Project (3 credit hours) • MBA Core Class • Other 6000-level Approved Electives (e.g., Industrial and Organizational Psychology		

COMPETITOR ANALYSIS – UCF PROGRAMS

School	Program Description	Core Courses	Credit Hours	Contact
UCF-Lockheed Martin K-8	The mission of the K-8 Mathematics and Science Education M.Ed. degree is to improve the quality of mathematics and science teaching and leadership in central Florida by providing leadership efforts to strengthen the quality of teaching and learning in mathematics and science, create a networks of school-based leadership in mathematics and science education, increase the number of students who enter high school and choose to enroll in mathematics and science courses that will prepare them for careers in mathematics, science and technology fields.	EDS 6938 - Supervision of Professional Laboratory Experiences IDS 6939 - Curriculum Reform in Mathematics and Science SCE 6146 - Environmental Education MAE 6641 - Problem Solving and Critical Thinking Skills EDF 6481 - Fundamentals of Graduate Research in Education IDS 6934 - Using Technology in Mathematics and Science IDS 6937 - Reflecting on Instruction of Mathematics and Science IDS 6933 -SCE 5825 - Space Science for Educators Seminar in Teaching Mathematics and Science Elective IDS 6971 Thesis - Planning, Completion Action Research Paper	39	Dr. Lisa Dieker 407-823-3885 ldieker@mail.ucf.edu

COMPETITOR ANALYSIS – OTHER UNIVERSITIES

		Program Description	Core Courses	Credit Hours	Contact
FSU		The masters degree program in Learning and Cognition is designed for professionals who are involved with learning, cognition, development, and group processes in a variety of contexts, such as the classroom at any level (including adults), the military, government, private enterprise, the courts, and other organizational settings, and for students who are interested in pursuing a career in these areas.	Four courses (12 hours) from the following list: EDP 5068 Lifespan Development (3) EDP 5216 Theories of Learning and Cognition in Instruction (3) EDP 5217 Principles of Learner Motivation (3) EDP 5275 Development of Children in School (3) SYP 5105 Theories of Social Psychology (3) EDP 5285 Group Processes in Instruction (3) EDG 6328 Alternate Views of Teaching and Learning (3) EDG 6363 Practicum in Experimental Learning Research (3) EXP 5508 Cognition and Perception (3) EDP 6937 Seminar in Special topics (3) EXP 6609r Seminar in Higher Mental Processes (3) EXP 6920r Current Issues in Cognitive/ Behavioral Science (1) **12 hours (typically four courses) in your area of specialization** Students develop their program of study in conjunction with their advisor. For example, an elementary teacher or secondary teacher who is interested in studying children's learning as a teacher researcher would select courses from programs in early childhood, elementary or secondary education, foundations of education, instructional systems, multicultural/multilingual education, reading, special education, or other relevant fields of study. In contrast, a program supervisor from a state agency might select courses from adult education, educational leadership, human services, management, psychology, social work, or sociology. **Research and Data Analysis 9 Hours (typically three courses)** Again, please select courses in consultation with your advisor. Here are possible courses: EDF 5400 Basic statistics (4 hours) EDF 5443 Measurement and Evaluation in the Classroom (3 Hours)	39	Gary Peterson Department Chair 850-644-9445 gpeterso@admin.fsu.edu

	Program Description	Core Courses	Credit Hours	Contact
		EDF 5461 Introduction to Program Evaluation (3 Hours) EDF 5462 Evaluation of New Programs (3 Hours) EDF 5464 Qualitative Evaluation (3 Hours) EDF 5481 Methods of Educational Research (3 hours) LAE 5738 Linguistic Research in Language Arts (3 Hours)		
UF	The Educational Psychology program prepares students to become highly accomplished professionals dedicated to the production and application of research-based knowledge about human development and learning. Graduates of the program pursue careers in colleges and universities and in private and public local, state, and federal agencies. The program focuses on developing students' expertise in (a) investigating and developing knowledge that will enhance learners' cognitive, social, emotional, and motivational development and (b) determining how that knowledge can be applied to foster optimal teaching and learning and development. The educational psychology program offers the M. Ed., the M.A.E., and the Ph.D. degree	A. Basic Requirements (6 Hours) EDF 6113 – Human Development EDF 6215 – Learning Theory B. Supervised Research (3 Hours) Each student must complete 3 hours of EDF 6910—Supervised Research, working in collaboration with an educational psychology faculty member on a research topic of mutual interest. D. Research Requirement (6 Hours) Students are expected to develop an understanding of quantitative and qualitative methods of research. A basic course in statistics (STA 2023, 2122, EDF 6401, or the equivalent) is a prerequisite for courses needed to meet this requirement. Students who have taken a basic statistics course but have no other background in statistics should take EDF 6403 Quantitative Foundations of Educational Research (6 credits). Students who have a good mathematics background and competence in basic statistics should begin with EDF 7405 followed by EDF 6481 Quantitative Methods in Education (4 credits). Thesis Requirement (6 Hours) All students pursuing a M.A.E. are required to write an acceptable thesis and to defend the thesis at an oral examination. All students are required to enroll for at least 6 hours of EDF 6971, Research for Master's Thesis.	36	Educational Psychology University of Florida 1403 Norman Hall P.O. Box 117047 Gainesville, FL 32611-7047 Phone: (352) 392-0724 Fax: (352) 392-5929 E-mail: lparsons@coe.ufl.edu Department Chair: Dr. Mark Shermis P.O. Box 117047 1403 Norman Hall Gainesville, FL 32611-7048 392-0725, ext. 224 mshermis@coe.uf

COMPETITOR ANALYSIS – OTHER UNIVERSITIES

	Program Description	Core Courses	Credit Hours	Contact
	in educational psychology. *Specializations include learning and cognition, human development, and other areas specially designed to meet the individual student's interests and needs related to educational psychology.* Students in the educational psychology program develop expertise in conducting research using a variety of experimental, qualitative, and quantitative methods. As part of the program students collaborate with faculty to research topics of shared interest, including the psychology of reading and memory, the development of logical reasoning, motivation, and social and emotional development in the context of education.			l.edu
University of WI @ Madison	The Educational Psychology program at UWI at M is a joint Master's and Doctoral program. Students may choose to exit the program after completing a Master's degree, however, this is not how the	*MS Course Requirements* 709: Seminar in Research in Educational Psychology **AND** 710: Seminar in Research in Educational Psychology 723 Developmental Processes Across the Life Span **OR**	32 hours for MS and 48 for Ph.D	Department Chair: Ron Serlin, PhD Department Address: Educational Sciences, Rm 880B

	Program Description	Core Courses	Credit Hours	Contact
	program is designed. Students running the full course of the program will graduate with a Doctorate in Educational Psychology with a specialization in one of four areas: Learning Sciences, Human Development, Quantitative Methods, or School Psychology. The program in human development adopts a life-span approach to individual change. Studying development in context is an important component of the program, so that research can make conceptual/theoretical contributions to the understanding of human behavior and can address practical concerns of educators, parents, and others concerned with the developing person.	725 Theories and Issues in Human Development 720: Advanced Child Development **OR** 920: Seminar in Child Development 721:Adolescent Development **OR** 921: Seminar in Adolescent Development 722: Adult Development and Aging **OR** 922: Seminar in Adult Development and Aging 760: Statistical Methods Applied to Education I 761: Statistical Methods Applied to Education II *Note that at least one of the Human Development course taken for the MS degree must be at the 900 level or be a 711 course that the Human Development area faculty approve as being equivalent to a 900-level course. In the latter case, approval must be received prior to completion of the MS degree requirements.*		1025 W Johnson St. Madison, WI 53706-1796 Phone: (608) 262-3432 Fax: (608) 262-0843 Graduate Admissions Coordinator: Barbara Lienau Department Address: Educational Sciences, Rm 880E 1025 W Johnson St. Madison, WI 53706-1796 Phone: (608) 262-9407 Fax: (608) 262-0843 balienau @wisc.edu

COMPETITOR ANALYSIS – OTHER UNIVERSITIES

	Program Description	Core Courses	Credit Hours	Contact

University of Maryland	Students who fulfill the requirements of the specialization will gain expertise in the scientific domain of Educational Psychology. The domain of Educational Psychology involves the application of psychological theory and research methodology to educational issues. In particular, this specialization is designed to: (a) attract research-oriented students into Human Development, and (b) give students more experience and greater proficiency in research in such areas as learning and cognition, achievement motivation, self-regulated learning, strategic processing, and the influence of parental and teacher beliefs on student achievement and self-concept. Educational psychologists utilize their research expertise as university professors or as research scientists who work at state, federal, or private agencies. Graduate Courses for EDHD Education, Human Development	EDHD 600 Introduction to Human Development
		   OR
		EDHD 690 History and Systems in Human Development 3
		   OR
		EDHD 760 Educational Psychology
		EDMS 645 Quantitative Research Methods I 3
		EDHD 602 Social Bases of Behavior
		OR
		EDHD 720 Social Development and Socialization Processes 3
		EDHD 721 Cognitive Development and Learning
		   OR
		EDHD 692 Cognitive Basis of Instruction 3
		EDHD 601 Biological Bases of Behavior
		   OR
		EDHD 775 Psychophysiological Processes in Human Development 3
		EDHD 700 Infant Development
		EDHD 711 Peer-culture and Group Processes in Human Development
		EDHD 750 Culture, Context, and Development
		EDHD 770 Designing Multimedia Computer Environments for Learning
		EDHD 779 Special Topics in Human Development
		EDHD 835 Achievement Motivation
		EDHD 850 Social Cognition and Moral Development
		Up to 2 courses in other departments (EDMS, EDCI, Psychology, etc.)
			30	Department of Human Development, Institute for Child Study 3304 Benjamin Building (#143) University of Maryland College Park, MD. 20742 Phone Number: 301-405-2827 Fax Number: 301-405-2891 Email: humandev@umd.edu

COMPETITOR ANALYSIS – OTHER UNIVERSITIES

	Program Description	Core Courses	Credit Hours	Contact
U of GA	The M.Ed. in Educational Psychology was developed to enhance students' knowledge of human development, learning, and motivation as well as knowledge about behavior problems in the school setting that interfere with academic achievement. Students may pursue one of three MEd.programs (i.e., Cognition and Development, Statistics and Measurement, or Gifted and Creative Education), each of which has distinct goals as detailed below. **M. Ed. Program in Applied Cognition and Development** You will enhance your knowledge of basic human development, learning, and motivation, PLUS develop your professional knowledge and skills in the area(s) most important to you. As an M.Ed. student in Educational	*Core Theory Foundation Courses* The Department requires M.Ed. students to take one 6000-level theoretical foundations courses. Students may select from EPSY 6010: Foundations of Human Development, EPSY 6800: Foundations of Cognition for Education or EPSY 6060: Foundations of Motivation. Program areas may have additional required courses. *Core Research Methodology and Statistics Courses* The Department requires M.Ed. students to take two courses on research methodology or measurement offered under ERSH 7800 or an equivalent. Program areas may have additional required courses. **M. Ed. Program in Applied Cognition and Development** In addition to the departmental requirements, students take either seven (with project) or eight (without project) courses in an area of concentration. Each of the concentrations listed below meets all departmental and university requirements for an M.Ed. in Educational Psychology. Of course, these are only examples. You can choose to focus on any area of concentration you create with approval of your advisory committee. This master's program truly lets you construct a coherent program of courses to gain the knowledge and skills you want to meet your personal and professional goals. *Core Statistics, Research Methodology and Measurement* _____ Two courses on research methodology or measurement offered under ERSH such as ERSH 6200, 6300, 6600, 7600, 7250, or equivalent *Core Theory Foundation Courses* Select two of the following three courses _____ EPSY 6010: Foundations of Human Development, EPSY 6800: _____ Foundations of Cognition for Education or EPSY 6060: Foundations of Motivation *Area of Concentration* _____ EPSY 7650: Applied Project in Ed. Psych (applied track) _____ EPSY 6990: Research Seminar in Educational	33-36	Dr. Paula Schwanenflugel, program coordinator, Applied Cognition and Development Email: pschwan@uga.edu Dr. Tarek Grantham, program coordinator, Gifted and Creative Education Email: grantham@uga.edu

COMPETITOR ANALYSIS – OTHER UNIVERSITIES

	Program Description	Core Courses	Credit Hours	Contact
	Psychology in the program, you will choose one or two areas of specialization and design your own program to meet your needs and professional goals. Therefore, we have designed the program with a minimal number of required courses.	Psychology		
Harvard	The Human Development and Psychology (HDP) Program is designed for students interested in the development of children and adults and how knowledge of development can be applied to educational issues. The purpose of the program is to introduce practitioners and future researchers to theory and research on child, adolescent, and adult development and to reflect on potential applications to education. The program in Human Development and Psychology seeks to bridge traditional divisions between academic disciplines and between basic and applied research, building on developmental thinking and incorporating an understanding	Students are required to complete 8 courses in various subject areas relating to human development and psychology: Culture and Social Development (1 course), Cognitive and Language Development (1 course), Research Methods and Data Analysis (1 course), 3 additional courses which focus on human development and psychology (see attached or http://www.gse.harvard.edu/academics/masters/hdp/curriculum/additional_courses.html), and 2 elective courses either from the Harvard Graduate School of Education or other graduate schools within Harvard.	32 credits	Program Coordinator: Mary Kiesling (617) 496-1568 mary_kiesling@harvard.edu

COMPETITOR ANALYSIS – OTHER UNIVERSITIES

	Program Description	Core Courses	Credit Hours	Contact
	of diversity. It focuses on the cognitive, emotional, communicative, and relational development of the individual, from birth through early adulthood, considering sociocultural and other contexts in which this development takes place.			
Nova, UM, FIU, FAU, FAMU, UNF, UWF, Barry	No such programs exist as of yet			

Florida Board of Governors

Request to Offer a New Degree Program

___University of Central Florida_   _____Fall 2008_____
University Submitting Proposal   Proposed Implementation Date

Engineering & Computer Science   __Engineering Technology_
Name of College or School   Name of Department(s)

_Engineering Technology_____   Master of Science in Technology 15.0000
Academic Specialty or Field   Complete Name of Degree
                                        (Include Proposed CIP Code)

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

_____   _____   _____
Date Approved by the University Board of Trustees   President   Date

_____ _____   _____ _____
Signature of Chair, Board of Trustees   Date   Provost and Executive Vice President   Date

Provide headcount (HC) and full-time equivalent (FTE) student estimates of majors for Years 1 through 5. HC and FTE estimates should be identical to those in Table 1. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Table 2. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 (Total E&G divided by FTE).

Implementation Timeframe	Projected Student Enrollment (From Table 1)		Projected Program Costs (From Table 2)		
	HC	FTE	Total E&G Funding	Contract & Grants Funding	E&G Cost per FTE
Year 1	25	4.22	$41,298		$9,786
Year 2	80	14.88			
Year 3	120	24.89			
Year 4	125	29.05			
Year 5	125	33.36	$110,129		$3,301

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INSTITUTIONAL READINESS

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Academic Program Reviews, 2005-2006

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Note: This outline and the questions pertaining to each section <u>must be reproduced</u> within the body of

the proposal to ensure that all sections have been satisfactorily addressed.

INTRODUCTION

I.   Program Description and Relationship to System-Level Goals

> **A.   Briefly describe within a few paragraphs the degree program under consideration, including (a) level; (b) emphases, including concentrations, tracks, or specializations; (c) total number of credit hours; and (d) overall purpose, including examples of employment or education opportunities that may be available to program graduates.**

The Master of Science in Technology (MST) is an interdisciplinary program emphasizing partnership between industry and academia. It provides an integrated curriculum in technology and leadership. High-tech companies face significant challenges as they try to maintain an advantage in a global economy that offers great business opportunities. Achieving and managing the continuous growth of their core technology competencies and product lines are among the challenges that these companies face. To meet these challenges, managers must possess two sets of competencies: technical knowledge and management skills.

The MST program can greatly help individuals in businesses of all types who are moving into management positions and recognize that advanced technical knowledge must be coupled with strong communication and administrative skills. It also provides useful tools for managers, business and educational leaders who recognize that an understanding of issues in specific technology fields is critical in maintaining a competitive advantage in a global market. Key to this program is that a formal engineering background is not required for program admission.

Engineering Technology is a vital part of today's growing world economy. Communities with skilled technology workforces directly benefit from the growing global economy. Recently, Central and South Florida have become rapidly growing centers for software developers, Internet Service Providers, telecommunications companies, Electronic Businesses, and widely diverse technology based businesses.

The skills expected from Engineering Technologists are reaching far beyond any specific engineering disciplines. It is important to recognize that Computer Science and Engineering students are concerned with the science and engineering aspects associated with modern Technology, rather than its technical implementation and administration. While there is a shortage of skilled Engineering Technology professionals to fill these core areas, the demand for their expertise is increasing along with the level of expertise required.

The proposed program, Master of Science in Technology is designed to meet these needs by providing students a high quality and strong curriculum with emphasis on hands-on experience.

The following is a partial list of core skills that are expected of employees working in a field that would hire graduates of this program:

- Ability to administer and lead research teams
- Understanding of technology roles in business processes

- Ability to manage a technical projects
- Ability to understand the utilization of statistical models in managing technology projects

As mentioned above, the Master of Science in Technology program will be concerned with and give emphasis to the technical implementation and administration of areas that are also covered by our Engineering programs.

Goals:

- To meet the increasing demand for advanced education in technology and applied engineering

- To develop highly skilled and adaptable professionals who design, implement and manage modern technological systems

Objectives for the Program

- Provide a solid understanding of the methodologies and foundations of managing technology, and engineering systems
- Provide hands-on practical designing, implementing and administering of technical systems
- To prepare and educate students for immediate employment upon graduation, in the fields that have a technical base
- To provide an opportunity for BA/BS graduates to earn M.S. degrees in technology

Online Delivery

We expect all required courses to be offered online in order to reach a broader and more diverse student population. Online students need to show evidence of adequate access to computing and networking facilities, and must have sufficient computer background through education and/or work experience. These students may complete the entire degree online by choosing proper elective courses of the proposed curriculum. Online -- or web-based -- courses allow students from any geographical location to participate, regardless of geographic proximity to UCF. A second advantage is that online courses offer flexibility for those individuals who are unable to attend traditional classroom lectures. The flexibility offered by online courses will facilitate the completion of the degrees, as well as allow us to reach a broader and more diverse population of students.

Target Audience

- Graduates of all majors who are interested in technology or technology based careers

- Community college faculty desiring graduate degrees

Start Date and Expected Graduation Date

The Master of Science in Technology degree program will begin in Fall of 2008, following approval by the UCF BOT in fall of 2007. The first group of graduates is expected in spring of 2009.

Student Outcomes Expected

Students are expected to fully understand and be able to design, implement, and manage contemporary technological systems. As the program matures it is expected that technical specializations in key fields will be made available.

Program Outcomes

This program has been designed based on local and national industry needs with emphasis on certain areas of Technology. As the program expands throughout the years, it will increase in the number of technical elective courses so students' areas of specialization will grow with industry needs.

The program's effectiveness in training technology leaders will be assessed in a variety of ways, including the students' graded work, evaluations by external technology professionals, and the evaluation of written surveys of employers of recent graduates. The external evaluations will serve, not only to evaluate the performance of the students, but also to provide data regarding the extent to which the program is meeting its intended learning objectives. Based upon these annual assessments, all aspects of the program will be evaluated in order to determine whether the coursework experiences and assessment procedures are in need of revision. This continual process of assessment and evaluation is essential in ensuring that the program's requirements, courses and experience produce the desired outcomes.

Credit Hours and Courses

The MS in Technology requires a total of 30 credit hours of graduate-level course work (5000 level or above, of those, a minimum of 50% of the semester hours must be at the 6000-level or higher and part of the approved program). Students admitted to the program will be selected on a competitive basis and must meet the following minimum requirements: an appropriate baccalaureate degree from an accredited college or university, a competitive GRE score, a 3.0 GPA on the last 60 hours of attempted undergraduate coursework, a letter of professional intent and a resume, and three letters of recommendation. A student who enters a graduate degree is expected to have undergraduate educational experiences, including general education studies similar to those required for the baccalaureate degree at UCF.

Deficiencies for admission to the graduate program, if any, are specified at the time of admission. The applicant's past work and professional experience is also evaluated and taken into consideration when

determining admission classification. To be considered for regular admission, a 3.0 GPA is required.

The structure of the curriculum is briefly described below:

Requirements	Hours
Core Courses	15
Electives	12
Directed Research	3
Total Credit Hours	**30**

Required Core Courses:
Students will be required to complete a set of core courses. These core courses provide an in-depth study of the foundational knowledge and skills required of the discipline, including coursework in project management, quality control, process improvement, management information systems, Statistics, and applied research methods. These courses will be offered by Engineering Technology, IEMS, and other departments.

Restricted Elective Courses:
Students will choose electives from prescribed groups of courses. These courses are used to provide roadmaps specific to each area of technology, by offering advanced topics in concentration areas leading to better problem solving skills.

Directed Research:
Students will have to complete a directed research course. The research will be worth 3 credit hours; the student will work with a faculty advisor typically for one semester. The research results are expected to advance students' knowledge, leading to publications in peer-reviewed journals or conference proceedings. Research is a significant component of a professional graduate degree.

Summary of MS Requirements:
The proposed Master of Science in Engineering Technology Program curriculum consists of the following components:

Upon completion of core courses, students will choose four elective courses from a list of technical electives in order to gain their specialization skills. Elective courses must be chosen based on students' background and his/her goals and advisor's approval. Finally, every student must complete a three-credit hour directed research course. Additional courses may be assigned by the faculty advisor depending on the background of the candidate.

Graduate Program of Study

The program of study is designed to promote greater depth of understanding and preparation in technology as it can be applied to industry and education. the program of study is planned in consultation with an appointed advisor. it is designed for flexibility, permitting the student to select a combination of courses to meet individual career goals.

> **B. Describe how the proposed program is consistent with the current State University System (SUS) Strategic Planning Goals. Identify which goals the program will directly support and which goals the program will indirectly support. (See the SUS Strategic Plan at http://www.flbog.org/StrategicResources/)**

State University System of Florida Strategic Plan

The State University System of Florida's Strategic Plan for 2005 – 2013, adopted by the Board of Governors on June 9 of 2005, identifies targeted degree programs to meet statewide professional and workforce needs as one of the Strategic Plan's main goals (http://www.flbog.org/StrategicPlan/pdf/StrategicPlan_05-13.pdf). Technology is included as part of education, emerging technology, and information technology, which the State University Strategic plan lists as a targeted discipline.

The Board of Governors adopted the State University System of Florida's Strategic Plan 2005-2013 on June 9, 2005. The Board established system goals for 2012-2013 in the following areas:

- Goal 1: Access to and production of degrees
- Goal 2: Meeting statewide professional and workforce needs
- Goal 3: Building world-class academic programs and research capacity
- Goal 4: Meeting community needs and fulfilling unique institutional responsibilities

The proposed MST degree will directly support all four goals which is described in more detail of this proposal: in Sections II, Need and Demand (Goals 2 and 4), Section IV, Project Benefit (Goals 1 and 2), Section VI, Related Institutional Mission and Strength (Goal 4), and Section VII, Program Quality Indicators (Goal 3).

The proposed program will support UCF's mission and vision by being one of the few of its kind in the United States, with high quality teaching, research, and service, including developing partnerships with

industry, community colleges, and government agencies. Technology is our future, and this program will prepare students for employment in community colleges as educators, government, and industry.

Supports UCF Strategic Plan Goals
http://president.ucf.edu/mission.html

Goal 2: Achieve national prominence in key programs of graduate study and research

Currently there are just a few universities in the U.S. that offer this degree and one university in Florida (FAMU) which offers a graduate degree in engineering technology. The degrees offered by all these universities address a specific field in the technology while our proposed program is flexible and can be tailored to the needs of individual students and industry. In that sense it is a unique graduate program, it provides an integrated curriculum in technology and leadership.

High-tech companies face significant challenges as they try to maintain an advantage in a global economy that offers great business opportunities. Achieving and managing the continuous growth of their core technology competencies and product lines are among the challenges that these companies face. To meet these challenges, managers must possess two sets of competencies: technical knowledge and management skills.

The Master of Science in Technology program can greatly help the engineers, scientists, technologist, and business leaders who are moving into management positions and recognize that advanced technical knowledge must be coupled with strong communication and administrative skills. It also provides useful tools for managers, business and educational leaders who recognize that an understanding of issues in specific technology fields is critical in maintaining a competitive advantage in a global market.

Because of the demand for such skills, our program should draw from the top students who are interested in pursuing a graduate degree in technology. Moreover, the diversity of the program will draw students from diverse educational backgrounds and skills.

The proposed program, Master of Science in Technology is designed to meet these needs by providing students a high quality and strong curriculum with emphasis on hands-on experience.

Goal 5: Be America's Leading Partnership University

The Department of Engineering Technology has partnership and articulation agreements with almost all of central Florida community colleges and some other community colleges around the state. This proposal has been discussed with them and has gained their support. They all have expressed significant of availability of this degree to their instructors. A master's degree required for all community college instructors in order to teach a transfer course.

The Industrial Advisory Board of the department has reviewed and endorsed offering a graduate technology degree program. Members of the Board represent almost all major industries in central Florida. In addition, we have discussed this program with the executive committee of Society for Information Management and gained their approval.

Once the degree is in place we expect these partnerships to grow in kind to include a more diverse audience. Support letters for partnership and collaboration from community colleges and private industry are attached in the appendix.

Supports UCF's Strategic Initiatives

In pursuing and enacting its mission, the UCF Strategic Plan identifies three pathways and 12 strategic initiatives. **Those that are directly supported by the proposed MST degree are described as follows:**

Pathway One: Enhance UCF's Academic Mission

Strategic Initiative 2: Increase Prominence in Graduate Studies

The degree would increase our prominence as one of the few universities to have a program that addresses the growing need for professionals who possess two sets of competencies: technical knowledge and management skills.

Strategic Initiative 3: Foster Excellence in Research and Creative Activities

The diverse skill sets of the faculty members provide a foundation for excellence in teaching and research. These faculty members all possess Ph.D. degree with a diverse educational background in electrical and computer engineering, mechanical and aerospace engineering, civil and environmental engineering, industrial engineering, and physics. They all have earned their degrees in top U.S. and international universities such as M.I.T, New York State, Ohio State, UCF, etc. They all have at least over a dozen publications in peer-reviewed journals and conference proceedings.

These faculty members will serve as the core of the program and will foster research and creative activities consistent with their previous duties. Their publications are listed at the end of this document in each person's vita.

Pathway Two: Serve the Central Florida Metropolitan Region

The Department of Engineering Technology has established partnership with all local government agencies of Central Florida and has been instrumental in helping them to solve some of their more complicated problems and issues. FINDER project which helps law enforcement agencies in fighting crime, SCIENET project with Seminole county government, Crimenet with Orange county government, Fire & arson with Volusia county Fire services, just to name a few. This proposal has been discussed with Central Florida's leading community colleges and also industry and has gained their support. They all have expressed significant of availability of this degree to their instructors and employees. A master's degree required for all community college instructors in order to teach a transfer course.

Currently the majority of our students come from the Central Florida metro area. Many are working, part-

time students who take our courses 'online.' We expect that, initially, most of our students will be from Central Florida, and they will take the knowledge and skills that acquire from our degree back to their local jobs.

Strategic Initiative 7: Enhance Collaboration

This program brings together collaborators from various colleges and departments at UCF to establish this graduate degree with desired high quality. Efficient collaboration is required of our interdisciplinary team of departments including engineering technology, Engineering, business administration, and sciences. 30% of our faculty has joint appointment with University research centers and other departments. Number of our faculty work very closely with The National Center for Forensic Science (NCFS) at UCF.

Pathway Three: Strengthen UCF's Services and Processes

Strategic Initiative 11: Increase Visibility

Being the very first Master's of Science in Technology in the state of Florida and among very few in the United States will clearly increase UCFs visibility. It is also important that the program is of the highest quality. Being the first is not necessarily that important if the program is not of high quality. We are building this program from the ground up to provide students with a quality education in Technology.

In addition, the proposed MST will support the shared mission of the SUS identified in the Strategic Plan, which states: "The State University System of Florida consists of ten public universities and one Shared Mission public liberal arts college, each with its distinctive mission, collectively dedicated to serving the needs of a diverse state through excellence in teaching, research and public service."

INSTITUTIONAL AND STATE LEVEL ACCOUNTABILITY

II.   **Need and Demand**

>   A. **Need: Describe national, state, and/or local data that support the need for more people to be prepared in this program at this level. Reference national, state, and/or local plans or reports that support the need for this program and requests for the proposed program which have emanated from a perceived need by agencies or industries in your service area. Cite any specific need for research and service that the program would fulfill.**

The initial demand for this program was identified in consultation with the Florida Community Colleges. The SACS requirements for instructors required at least 18 hours of graduate work for these instructors, specifically in technology. Because of the extremely diverse nature of Engineering Technology at the Community Colleges they were finding it difficult to find qualified instructors to meet both the domain knowledge of necessary for the topics taught and the education background to meet the SACS qualifications. Because the majority of these instructors did not have an engineering undergraduate degree – they also were unable to enroll in programs in graduate engineering.

Future investigation into the needs for technology education showed that the need was both acute and well documented. Reports from NSF, NAS, NASA, and others have done a good job of not only documenting the need at a national level, the report "Technically Speaking: Why All Americans Need to Know More About Technology" available from the National Science Foundation and the Battelle Memorial Institute (ISBN-10: 0-309-08262-5) alliterates and describes this need in full detail.

B. Demand: Describe data that support the assumption that students will enroll in the proposed program. Include descriptions of surveys or other communications with prospective students.

The degree program is available to undergraduate students from all majors and is designed to allow all majors to complete a program of study with minimal pre-requisites. The degree will initially recruit undergraduate students in engineering technology, information systems technology, management information systems, and related disciplines, who are currently enrolled at UCF. A strong demand for this program has been observed based on interaction with and inquiries from graduates of these programs. Recent graduates will also be contacted for their interest in the proposed master's degree. We plan to contact central Florida community colleges and employers in the greater metropolitan Orlando area for their interest in the proposed graduate degree.

C. If similar programs (either private or public) exist in the state, identify the institution(s) and geographic location(s). Summarize the outcome(s) of any communication with such programs with regard to the potential impact on their enrollment and opportunities for possible collaboration (instruction and research). Provide data that support the need for an additional program.

The program is modeled after similar programs that have enjoyed success at other Universities nationally. Notable models for the program are Arizona State University College of Technology and Innovation (http://technology.poly.asu.edu/) and Purdue (http://www.tech.purdue.edu/academics/graduate/grad_options.cfm) among others.

D. Use Table 1 (A for undergraduate and B for graduate) to categorize projected student headcount (HC) and Full Time Equivalents (FTE) according to primary sources. Generally undergraduate FTE will be calculated as 40 credit hours per year and graduate FTE will be calculated as 32 credit hours per year. Describe the rationale underlying enrollment projections. If, initially, students within the institution are expected to change majors to enroll in the proposed program, describe the shifts from disciplines that will likely occur.

Initial headcounts are based upon projections and inquiries made about the program. Ten community colleges have a need to certify between 5-10 instructors at each community college which would provide an early estimate of 50 students of which half will likely enroll in the program. We have received approximately 20 inquiries about the program from elsewhere.

TABLE 1-B

PROJECTED HEADCOUNT FROM POTENTIAL SOURCES

(Engineering Technology Master of Science Degree Program)

SOURCE OF STUDENTS (Non-duplicated headcount in any given year)*	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
	HC	FTE	HC	FTE	HC	FTE	HC	FTE	HC	FTE
Individuals drawn from agencies/ industries in your service area (e.g., older returning students)	15	4.22	35	7.50	55	10.16	65	11.53	70	11.53
Students who transfer from other graduate programs within the university**	0	0	5	1.41	10	2.97	5	1.41	0	0
Individuals who have recently graduated from preceding degree programs at this university	5	0.00	5	2.32	10	4.64	10	4.64	10	4.64
Individuals who graduated from preceding degree programs at other Florida public institutions	5	0.00	10	0.84	15	2.34	15	5.22	15	8.03
Individuals who graduated from preceding degree programs at non-public Florida institutions	0	0.00	10	0.00	10	0.00	10	0.00	10	0.00
Additional in-state residents***	0	0.00	5	0.00	5	0.56	5	2.03	5	4.94
Additional out-of-state residents***	0	0.00	10	2.81	15	4.22	15	4.22	15	4.22
Additional foreign residents***	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Other (Explain)***	0	0.00	0	0.00	0	0.00	0	0.00	0	0.000
Totals	25	4.22	80	14.88	120	24.89	125	29.05	125	33.36

* List projected yearly cumulative ENROLLMENTS instead of admissions.
** If numbers appear in this category, they should go DOWN in later years.
*** Do not include individuals counted in any PRIOR category in a given COLUMN.

E. Indicate what steps will be taken to achieve a diverse student body in this program, and identify any minority groups that will be favorably or unfavorably impacted. <u>The university's Equal Opportunity Officer should read this section and then sign and date in the area below.</u>

The College of Engineering and Computer Science proposes to actively recruit minority students and under-represented populations for the M.S. in Technology in the following ways:

- A marketing strategy to increase diversity will be developed to include broad advertising on campus. UCF has minority student associations (http://www.osa.ucf.edu/a-z/EthnicMinority-International.html) that include the African American Student Union, the Asian Student Association, and the Hispanic American Student Association. These groups will be the focus of a special effort to increase diversity in our program.
- Regional and local minority-targeted media sources such as *FLAVOR: Black Life and Style*, and *El Sentinel* are also important outlets to attract minority students.
- The program will maintain an active, carefully constructed website of the proposed program, faculty, research opportunities, internship sites, career opportunities, as well as providing information about admission, curriculum, and graduation requirements.
- Information announcing the program will be sent to all colleges and universities, including those universities that have high minority student enrollment.

_____   _____

Equal Opportunity Officer   Date

III. Budget

A. Use Table 2 to display projected costs and associated funding sources for Year 1 and Year 5 of program operation. Use Table 3 to show how existing Education & General funds will be shifted to support the new program in Year 1. In narrative form, summarize the contents of both tables, identifying the source of both current and new resources to be devoted to the proposed program. (Data for Year 1 and Year 5 reflect snapshots in time rather than cumulative costs.)

TABLE 2

PROJECTED COSTS AND FUNDING SOURCES

Instruction & Research Costs (non-cumulative)	Year 1						Year 5			
	Funding Source						Funding Source			
	Reallocated Base * (E&G)	Enrollment Growth (E&G)	Other New Recurring (E&G)	New Non-Recurring (E&G)	Contracts & Grants (C&G)	Subtotal E&G and C&G	Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)
Faculty Salaries and Benefits	$27,532	$13,766	$0	$0	$0	$41,298	$27,532	$82,597	$0	$0
A&P Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
USPS Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Personnel Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Assistantships and Fellowships	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Library	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Expenses	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Special Categories	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs	$27,532	$13,766	$0	$0	$0	$41,298	$27,532	$82,597	$0	$0

*Identify reallocation sources in Table 3.

**Includes recurring E&G funded costs ("reallocated base", "enrollment growth", and "other new recurring") from Years 1-4 that continue into Year 5.

***Identify if non-recurring.

Faculty and Staff Summary

Total Positions (person-years)	Year 1	Year 5
Faculty	0.11	0.55
A&P	0	0
USPS	0	0

Calculated Cost per Student FTE

		Year 1	Y
Total E&G Funding		$41,298	$1
Annual Student FTE		4.22	
E&G Cost per FTE		$9,786	$

B. **If other programs will be impacted by a reallocation of resources for the proposed program, identify the program and provide a justification for reallocating resources. Specifically address the potential negative impacts that implementation of the proposed program will have on related undergraduate programs (i.e., shift in faculty effort, reallocation of instructional resources, reduced enrollment rates, greater use of adjunct faculty and teaching assistants). Explain what steps will be taken to mitigate any such impacts. Also, discuss the potential positive impacts that the proposed program might have on related undergraduate programs (i.e., increased undergraduate research opportunities, improved quality of instruction associated with cutting-edge research, improved labs and library resources).**

The proposed MST degree will not have a negative impact on participating departments and programs due to reallocation of resources. The curriculum of the degree (described in more detail in Section VIII) is mainly based on existing, regularly offered graduate-level courses out of College of Business Administration and College of Engineering & Computer Science. The only exceptions are new courses proposed by Engineering Technology Department. However, Engineering Technology has hired additional faculty in 2005-2006 in anticipation of the MST degree. All new courses out of Engineering Technology will be taught by existing faculty given their research interests and expertise.

As the enrollment of the MST degree grows there will be a need for offering additional sections of both required and elective courses. Therefore, additional faculty lines and supporting staff will be needed once the number of students grows over 50.

C. **Describe other potential impacts on related programs or departments (e.g., increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the proposed major).**

The most significant impact on participating programs and departments is the concern of accommodating additional students of the MST degree placed into existing courses. These increased enrollments might require additional offerings of the course which will be scheduled. The cost of these additional offerings would be offset by the increased student credit hour generation. To also alleviate part of this concern, a high level of flexibility in course requirements is part of the program.

D. **Describe what steps have been taken to obtain information regarding resources (financial and in-kind) available outside the institution (businesses, industrial organizations, governmental entities, etc.). Describe the external resources that appear to be available to support the proposed program.**

The degree program is designed as a professional program designed for completion by part time students working full time in a professional capacity. As such resource requirements for program support are expected to be minimal.

IV. Projected Benefit of the Program to the University, Local Community, and State

> **Use information from Table 1, Table 2, and the supporting narrative for "Need and Demand" to prepare a concise statement that describes the projected benefit to the university, local community, and the state if the program is implemented. The projected benefits can be both quantitative and qualitative in nature, but there needs to be a clear distinction made between the two in the narrative.**

The proposed degree is a collaborative effort between various programs and departments of UCF, offering a great opportunity for both faculty and especially students to work on challenges presented by today's sophisticated technology. The MST degree is built on the strength of the existing engineering technology program, interests from undergraduate students and working professionals wishing to pursue a graduate degree, and research expertise and professional experiences of participating faculty.

Technology has become increasingly important in today's world, affecting individuals, businesses, local, state and government agencies, and the society as a whole. The proposed MST degree offers a set of core courses that cover the fundamental subject areas of the discipline; the degree allows flexible electives for students to tailor the curriculum based on their interests and needs. The degree will also provide internship opportunities for students to gain real world experience working with local businesses or government agencies.

The Industrial Advisory Board of the department has reviewed and endorsed offering a graduate technology degree program. Members of the Board represent almost all major industries in central Florida. In addition, we have discussed this program with the executive committee of Society for Information Management and gained their approval.

As other states and institutions are becoming aware of and starting to offer courses and programs in technology, UCF has the momentum and capability to advance its engineering technology program to the next level, taking a leader's role in promoting and advancing technology education within the state of Florida.

V. Access and Articulation – Bachelor's Degrees Only

N/A

INSTITUTIONAL READINESS

VI. Related Institutional Mission and Strength

> **A. Describe how the goals of the proposed program relate to the institutional mission statement as contained in the SUS Strategic Plan and the University Strategic Plan.**

University of Central Florida Strategic Plan

The proposed degree is related to UCF's Mission, Vision, Goals, and Strategic Initiatives. The curriculum is timely and important for the growth of a metropolitan research university. One UCF goal is increasing the quantity and quality of education in technology and information technology. Not only will the curriculum provide excellent educational experience for UCF students, but the collaborative research will continue to enhance the national and international prominence and visibility of UCF.

UCF's Mission

The University of Central Florida is a public, multi-campus, metropolitan research university, dedicated to serving its surrounding communities with their diverse and expanding populations, technological corridors, and international partners. The mission of the university is to offer high-quality undergraduate and graduate education, student development, and continuing education; to conduct research and creative activities; to provide services that enhance the intellectual, cultural, environmental, and economic development of the metropolitan region, address national and international issues in key areas, establish UCF as a major presence, and contribute to the global community.

UCF's Vision

The University of Central Florida will be the nation's leading metropolitan research university recognized for its intellectual, cultural, technological, and professional contributions and renowned for its outstanding programs and partnerships.

Supports UCF Mission and Vision

The proposed program will support UCF's mission and vision by being one of the few of its kind in the United States, with high quality teaching, research, and service, including developing partnerships with industry, community colleges, and government agencies. Technology is our future, and this program will prepare students for employment in community colleges as educators, government, and industry.

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Goal 2: Achieve national prominence in key programs of graduate study and research

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Strategic Initiative 2: Increase Prominence in Graduate Studies

The degree would increase our prominence as one of the few universities to have a program that addresses the growing need for professionals who possess two sets of competencies: technical knowledge and management skills.

Strategic Initiative 3: Foster Excellence in Research and Creative Activities

The diverse skill sets of the faculty members provide a foundation for excellence in teaching and research. These faculty members all possess Ph.D. degree with a diverse educational background in electrical and computer engineering, mechanical and aerospace engineering, civil and environmental engineering, industrial engineering, and physics. They all have earned their degrees in top U.S. and international universities such as M.I.T, New York State, Ohio State, UCF, etc. They all have at least over a dozen publications in peer-reviewed journals and conference proceedings.

These faculty members will serve as the core of the program and will foster research and creative activities consistent with their previous duties. Their publications are listed at the end of this document in each person's vita.

Pathway Two: Serve the Central Florida Metropolitan Region

The Department of Engineering Technology has established partnership with all local government agencies of Central Florida and has been instrumental in helping them to solve some of their more complicated problems and issues. FINDER project which helps law enforcement agencies in fighting crime, SCIENET project with Seminole county government, Crimenet with Orange county government, Fire & arson with Volusia county Fire services, just to name a few. This proposal has been discussed with Central Florida's leading community colleges and also industry and has gained their support. They all have expressed significant of availability of this degree to their instructors and employees. A master's degree required for all community college instructors in order to teach a transfer course.

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This program brings together collaborators from various colleges and departments at UCF to establish this graduate degree with desired high quality. Efficient collaboration is required of our interdisciplinary team of departments including engineering technology, Engineering, business administration, and sciences. 30% of our faculty has joint appointment with University research centers and other departments. Number of our faculty work very closely with The National Center for Forensic Science (NCFS) at UCF.

Pathway Three: Strengthen UCF's Services and Processes

Strategic Initiative 11: Increase Visibility

Being the very first Master's of Science in Technology in the state of Florida and among very few in the United States will clearly increase UCFs visibility. It is also important that the program is of the highest quality. Being the first is not necessarily that important if the program is not of high quality. We are building this program from the ground up to provide students with a quality education in Technology.

> **B. Describe how the proposed program specifically relates to existing institutional strengths, such as programs of emphasis, other academic programs, and/or institutes and centers.**

This program proposal is directly linked to Engineering Technology Information Systems and Software Lab. The laboratory has the ability and experience to:

- Map business processes
- Develop full-scale software systems
- Perform high-end software testing
- Deploy and deliver full software systems
- Perform maintenance and support for software systems

The laboratory is a production software shop that has the purpose of supporting research efforts that require production level software. In the past three years the Engineering Technology Center has performed over $3 million in funded research and currently has over five funded research projects. The Engineering Technology Center is trying to expand its area of research to include non-software technologies.

Two faculty members from the Department of Engineering Technology have dual appointments at NCFS (Craiger, Pollitt), and have brought in approximately $450,000 in digital forensics-related research programs in the last two years alone. The department has a very close relationship and research collaboration with the National Center for Forensic Science (NCFS).

The program faculty is primarily located in the Departments of Engineering Technology in the College of Engineering and Computer Science. The faculty has taught Electrical, Computer, Mechanical, Industrial, Civil engineering and Information Systems related topics for years at the university level. Faculty members have an extensive track record in Technology related topics, including several dozen publications and conference presentations. (See appendix that includes faculty member vitas).

Strengths of Research Labs and Research Faculty

UCF Engineering Technology faculty have a strong record in performing applied research at the local and national level. The following is a brief explanation of ongoing research in this area.

Research Labs

Faculty from Engineering Technology has access to state-of-the-art facilities for their digital forensics research projects. The Digital Evidence Research Lab has approximately twenty workstations, running a combination of Windows, Linux and Mac OS X. These workstations are used for an assortment of purposes, including the creation and analysis of research material. We have recently acquired several Intel-based Mac computers for additional research. Within our lab we run several networks; our primary internal network is isolated from the Internet and provides basic communication and storage for the analysis workstations. Other networks are used for testing and research. For research storage we currently employ a Linux-based 1.5 Terabyte NAS (Network Attached Storage) connected to our isolated internal network. Additional research is performed using a (Apple Xserve) seven Terabyte SAN (Storage Area Network) connected to workstations via fibre channel. For presentations to visiting researchers and students we have a widescreen 37" LCD television.

UCF Engineering Technology Faculty have access to ENT's research labs for their digital, electronics, feedback & control, software development, Database, and network research projects.

Engineering Technology Center

The Engineering Technology Department operates a full scale software development and operations laboratory (ENT Information Systems and Software Lab). The laboratory has the ability and experience to:

- Map business processes
- Develop full-scale software systems
- Perform high-end software testing
- Deploy and deliver full software systems
- Perform maintenance and support for software systems

The laboratory is a production software shop that has the purpose of supporting research efforts that require production level software. The lab's full-time staff are:

1. Dan Burroughs – Development and Project Management
2. Kunal Motwani – Development and Project Management
3. Carlos Martinez – Development and Deployment Specialist
4. Damir Krimer – Maintenance, Support, and Development Engineer
5. Brad Mundt – Development and Testing Engineer
6. Eduardo Rocha – Maintenance and Support Engineer
7. Karla Alvarado – Business Process Engineer
8. Harish Ramakrishnan – Software Development Engineer

In addition to the full time staff we also draw from a pool of talented and expert faculty and graduate/undergraduate students at the University of Central Florida. The Lab has completed many large and small software projects.

Research Projects and Faculty

1. FINDER Project
FINDER stands for Florida Integrated Network for Data Exchange and Retrieval. It pertains to the software application that provides the network as well as the information sharing network itself.
http://finder.ucf.edu/

2. SCINET Project
In keeping with its goal of ***providing customer service that exceeds expectations***, the Planning and Development Department, Seminole County, Florida, has begun the process of revising its current organization and use of technology in an effort to implement changes that will automate and integrate related process and services. The overall goal is to revamp the way we provide information to the customer, making the best use of technology to create a fully automated and integrated local government. Seminole County Government, by authority of the Board of County Commissioners, has entered into a partnership with the University of Central Florida's College of Engineering and Computer Science (CECS) (Engineering Technology Department)
http://druid.engr.ucf.edu/seminolescinet/index.html

3. CRIMENET Project
Crime mapping & analysis project (ID: 36044) sponsored by Orange County Sheriffs Department. Funded $ 578,925.00.
http://www.cfcrimelinewarrants.com/

4. Virtual Digital Evidence Lab (Research by Dept of Engineering Technology/ NCFS. Funded by National Institute of Justice. Funding totaling $204,000)

Our researchers are developing a virtual 'digital evidence lab' that consists of the tools and resources required for digital forensic examinations, but these resources may be located in various geographic locations, and administered and maintained by different entities. These geographic locations are connected via a high-speed network. Examiners access the virtual lab through a single portal, over the Internet. Examiners can upload evidence for secure storage to one location and analyze the evidence using tools from a second location. Reports could be located at a third location. Prosecutors and attorneys would access the results through the same portal. PI: Phil Craiger.

5. Assessing trace evidence of secure deletion tools (Research by NCFS/Dept of Engineering Technology. Funded by State of Florida. Funding totaling $12,000)

Secure delete programs often erase the actual contents of the file, but most leave behind digital artifact, or 'trace evidence' on the file system. Trace evidence can be used by forensic examiners to determine whether a secure delete program was employed, in addition to providing additional information about the original file (metadata). This research examines different programs currently on the market to discern what trace evidence remains after a secure delete operation is performed.

6. Digital Evidence Markup Language (Research by NCFS/Dept of Engineering Technology. Funded by National Institute of Justice. Funding totaling $141,000)

DEML is a schema based on XML that supports the standardization of digital evidence-related artifacts. Below we provide an overview of DEML. DEML must be built with extensibility and flexibility in mind as technology changes will require consistent and continual changes in the language to appropriately model changes in the technologies used in computer-related crime.

7. Portable Electronic Device Forensics (Research by NCFS/Dept of Engineering Technology. Funded by State of Florida. Funding totaling $16,000)

In the past five years no other technology has grown more than personal electronic devices (PEDs). PEDs are typically small, handheld mobile devices with embedded computers chips and memory to store personal information, for instance, personal digital assistants (PDAs), cell phones, wrist watches, and even game consoles. Some of these devices are hybrid devices that perform more than one function. These generally cause two problems for law enforcement. First is that these devices are often overlooked by law enforcement at the scene of a crime due to ignorance about their functionality. A second problem is that even when seized, there is no PED-based forensic software or hardware to create forensically-sound copy of the contents of the device, or software to perform a logical or physical analysis of the device. Microsoft's Xbox game console is little more than a low-end personal computer; with little effort it can be modified to run additional operating systems, enabling it to store gigabyte's worth of non-game related files in addition to allowing it to run various computer services. Little has been published, however, on the proper forensic procedures to be employed in determining whether an Xbox has been modified, and if so, how to create an unadulterated forensic duplicate, and conduct a proper digital forensics investigation. Given the growing number of these devices, it will be important to understand how to identify, image, and examine these systems while reducing the potential for adulterating the media. We approach Xbox forensics from an applied research methodology, providing a set of forensically-sound procedures to be followed during the acquisition and subsequent analysis of an Xbox. PI: Phil Craiger

8. Digital Forensics Tool and Process Validation (Research by Dept of Engineering Technology/ NCFS. Funded by State of Florida, $20,000). PI: Phil Craiger

Digital forensic professionals commonly employ cryptographic one-way hash algorithms for multiple purposes, including identifying notable and known files, and verifying media integrity. While conducting a validation study of proficiency test media we found that applying the same hash algorithm against a single CD using different applications resulted in different hashes. This was unexpected because the only plausible explanation of the different hashes would be if the CD media changed in between hashing procedures. We formulated a series of experiments using several variables to determine the cause of the anomalous results. The results suggested that certain burn options might cause hash applications to report various and unpredictable hashes. We conclude with a discussion of possible consequences of these anomalies in a court of law, and recommendations on how to handle this situation. PI: Phil Craiger.

C. **Provide a narrative of the planning process leading up to submission of this proposal. Include a chronology (table) of activities, listing both university personnel directly involved and external individuals who participated in planning. Provide a timetable of events necessary for the implementation of the proposed program.**

Summer 2000 – Dr. Bob Williams of Daytona Beach Community College approached the department with the idea of developing a graduate degree program that does not require specific undergraduate degree knowledge so their instructors could earn a quality degree in order to qualify them to teach in Community colleges. The need for this program was based on the SACS requirements of the community colleges.

Fall 2000 – Engineering Technology Department Chair, Dr. Ronald Eaglin discussed the idea of developing a graduate degree in faculty meeting. All faculty members welcomed the idea and discussed what would be the best approach. Dr. Eaglin asked Dr. Bahman Motlagh to research and find out about similar programs in the nation.

Summer 2001 – Department decided that developing a graduate degree is an achievable goal providing that department will hire a number of new faculty members who have demonstrated strong research capabilities.

Summer 2003 – Department chair and IST program coordinator started discussing the feasibility of the proposed degree program with local industry and government leaders. Feedback was extremely favorable.

Spring 2005 – Department officially started hiring new faculties as funds became available. It was determined that all faculty hires would need to be qualified to teach graduate level courses and the hiring has followed this objective.

Summer 2006 – Dr. Bahman Motlagh was asked by department chair to start working on proposal to develop a graduate program.

VII.   Program Quality Indicators - Reviews and Accreditation

Identify program reviews, accreditation visits, or internal reviews for any university degree programs related to the proposed program, especially any within the same academic unit. List all recommendations and summarize the institution's progress in implementing the recommendations.

The most recent reviews for UCF programs occurred in the period of spring 2005 through summer 2006. The Engineering Technology was reviewed by Dr. Warren R. Hill, Dean, College of Applied Science and Technology at Weber State University. The Engineering Technology offers three Bachelor's degrees (Engineering Technology, Electrical

Engineering Technology, and Information Systems Technology). The Appendix of this proposal contains details of the review reports including department data, enrollment figures, graduation rates, program highlights, and recommendations for program enhancement.

Engineering Technology Program review

Below are the results of the program review for the Department of Engineering Technology, including responses.

- **Faculty felt good about leadership and program in department. Concern that Dr. Eaglin does not spread himself too thin with research, teaching, and administrative duties.**
  - Action: Dr. Eaglin has delegated many duties to program coordinators and also delegates research duties to focus on priorities with the department.

- **Faculty have broad range of experience and cared about students. Small sampling of students and very satisfied with programs with what they were learning and being taught (happy with content and delivery).**
  - Action: Continue to gather feedback from students and assess content, delivery. Ensure the primary goal of employability of the students is being met.

- **Excellent potential for growth in ET. Two issues: where do you get your students (good input from community colleges for recruitment enrollment). High demand for ET graduates because of hands on experience in program**.
  - Action: A strategic growth plan was developed for the department that has investigated and implemented actions based on potential new programs and existing programs.
  - Action: Faculty and laboratory resources to allow the growth are currently being sought from private sources.

- **Look at admissions process for AS degree students; ENT has developed an AS to BS program, not under AS to BS umbrella but directly into the program concentration area and not into ENT in general. Need articulation for example with students from Daytona into Space program. ENT general BAS can develop into this type of program. Probably get funding from legislatures and board of governors to do this type of program.**
  - Action: The department is continuing to work with branch campus programs to develop more AS to BS articulation agreements and pursuing fixed goals for the development of AS to BS articulation agreements.

- **Utah has university centers funded by legislature that provides years 3 and 4 on regional campuses (2+2). Florida has same type of structure. Cocoa Campus and Valencia West Campus possibilities.**

o   Action: The department is pursuing having a local 2+2 program at a minimum of two community colleges (Brevard and Valencia). Faculty and resources are being sought to make this operational.

ENT Program Weaknesses

- **Lack of lab space complaint by faculty and student. Not sufficient for size of program. Will severely limit ability to grow program.**
    o   Action: Additional laboratory space is being sought at off-campus locations.
    o   Action: The department has informed the College and University Administration as to the critical space needs of the program.

- **Department has 7 programs in 3 degree areas. Department has not clearly articulated what the goals for each of those 7 are which will have to be done for ABET. Also of benefit to faculty and students, then can articulate specific learning outcomes, then decide which courses meet those learning outcomes.**
    o   Action: The department has developed clear and published goals for each program.
    o   Action: An internally review of programs was conducted and is being studied to determine the need for the programs and further to consider reducing the number of programs.
    o   Action: The BSET Design program has been renamed and clarified, which is really civil construction by another name
    o   Action: The BSET Operations program has been renamed and clarified, which is really industrial operations degree.

- **Department currently offers a large number of courses (over 3+ pages); need to look at course offerings and pare it down with only 13 faculty.**
    o   Action: A curriculum audit was performed and unnecessary and outdated courses have been removed from the catalog.

- **There needs to be a resolution with IST and IT. Confusion on part of students (maybe employers) difference between IST and IT. IST computer-related technology work. IT for CS students who cannot make it in CS not as academically rigor**ous.
    o   Action: The curriculum was reviewed to prevent overlap in IST and IT. E.g., security minor issue junior and senior years are about the same courses for CS and IT.
    o   Action: The department has planned for advisement to ensure that students are placed in the correct program.
    o   Information: Freshman and sophomore years are different. IST transfers more with students with AA qualifications, who are working professionals.   The IT program is more FTIC driven. The population served is different for the 2 programs, but in terms of outcome, graduates from both programs look similar regardless of background and tend to get the same kinds of jobs.   Approximately 2/3 of the courses are taught through ENT and1/3 through IT, but students in each take courses out of each

department's offerings. Although it is not unhealthy to operate both programs, it is confusing to differentiate. Having both programs does not require much faculty time and effort.

- **Faculty stretched in teaching and not time to do research. Yet giant overlap in instruction and streamlining courses can free up time.**
  - o Action: Courses have been streamlined to free up faculty time;.

Suggestions

- **ET has a different teaching load from the rest of the college, need to look at different PNT since ENT faculty have higher teaching loads.**
  - o Information: UNC has PNT requirement for ENT different from engineering faculty.
  - o Action: Review and develop PNT requirements that truly meet the goals and objectives of the department.

- **Need more faculty to support growth in ENT.**
  - o Action: A strategic growth plan was developed for the department that outlines the program growth and new program development objectives.
  - o Action: Work to obtain more lines to meet strategic growth plan of the department.

- **With program growth their will be a need to come up with a different advising model**.
  - o Information: Program coordinators are advising 100-200 students each. (There is a staff coordinator who advising also, Kim Small.) Also, another advisor position open in Cocoa.
  - o Action: Work the undergraduate advising office to ensure adequate advising occurs for all ENT students.

- **Look at adding a graduate program for ENT as it grows.**
  - o Information: ENT typically has a technical type of MS that is an extension of the ENT program or a broad-base management of technology program typically done with the school of business (or IEMS). Market is there for ENT graduates who will be attracted to this type of program.
  - o Information: Best example Arizona State or Purdue for a technical ENT MS program. May get a lot of corporate support for an ENT MS program. Very important to keep curriculum current; very easy to get obsolete in technology.
  - o Information: The only outlet at the moment for UCF ENT students is to go into the IEMS MS track. CECS considering a good fit with merging ENT and IEMS program; IEMS has low BS enrollment but high graduate enrollment, ENT high BS enrollment but no graduate program. Course content is related in certain fields (e.g., management). Technology Administration course should be required in all programs; only course that provides an introduction into supervision and lots of grads will end up in supervision. Also has Ethics component which is an ABET requirement.

        ○   Action: Begin research for development of an MS program.

- **IST Program should require senior design.**
  - ○   Action: Look at adding Senior Design to the required courses in IST.

VIII.   Curriculum

    A. Describe the specific expected student learning outcomes associated with the proposed program. If a bachelor's degree program, include a web link to the Academic Learning Compact or include the document itself as an appendix.

The Master of Science in Technology (MST) is an interdisciplinary program emphasizing partnership between industry and academia. It provides an integrated curriculum in technology and leadership. High-tech companies face significant challenges as they try to maintain an advantage in a global economy that offers great business opportunities. Achieving and managing the continuous growth of their core technology competencies and product lines are among the challenges that these companies face. To meet these challenges, managers must possess two sets of competencies: technical knowledge and management skills.

The MST program can greatly help the engineers, scientists, technologist, and business leaders who are moving into management positions and recognize that advanced technical knowledge must be coupled with strong communication and administrative skills. It also provides useful tools for managers, business and educational leaders who recognize that an understanding of issues in specific technology fields is critical in maintaining a competitive advantage in a global market.

Engineering Technology is a vital part of today's growing world economy. Communities with skilled technology workforces directly benefit from the growing global economy. Recently, Central and South Florida have become rapidly growing centers for software developers, Internet Service Providers, telecommunications companies, Electronic Businesses, and widely diverse technology based businesses.

The skills expected from Engineering Technologists are reaching far beyond any specific engineering discipline graduates. It is important to recognize that Computer Science and Engineering students are concerned with the science and engineering aspects associated with modern Technology, rather than its technical implementation and administration. While there is a shortage of skilled Engineering Technology professionals to fill these core areas, the demand for their expertise is increasing along with level of expertise required.

The following is a partial list of core skills that are expected of employees working in a field that would hire graduates of this program:

- Ability to administer and lead research teams
- Understanding of technology roles in business processes
- Ability to manage a technical projects
- Ability to understand and utilization of statistical models in managing technology projects

As mentioned above, the Master of Science in Technology program will be concerned with and give emphasis to the technical implementation and administration of areas that are also covered by our Engineering programs.

Goals:

- To meet the increasing demand for advanced education in technology and applied engineering

- To develop highly skilled and adaptable professional who design, implement and manage modern technological systems

Objectives for the Program

- Provide a solid understanding of the methodologies and foundations of managing technology, and engineering systems
- Provide hands-on practical designing, implementing and administering of technical systems
- To prepare and educate students for immediate employment upon graduation, in the fields that have a technical base
- To provide an opportunity for BA/BS graduates to earn M.S. degrees in technology

Student Outcomes Expected

Students are expected to fully understand and be able to design, implement, and manage contemporary technological systems. As the program matures it is expected that technical specializations in key fields will be made available.

Program Outcomes

This program has been designed based on local and national industry needs with emphasis on certain areas of Technology. As the program expands throughout the years, it will increase in the number of technical elective courses so students' areas of specialization will grow with industry needs.

The program's effectiveness in training technology leaders will be assessed in a variety of ways, including the students' graded work, evaluations by external technology professionals, and the evaluation of written surveys of employers of recent graduates. The external evaluations will serve, not only to evaluate the performance of the students, but also to provide data regarding the extent to which the program is meeting its intended learning objectives. Based upon these annual assessments, all aspects of the program will be evaluated in order to determine whether the coursework experiences and assessment procedures are in need of revision. This continual process of assessment and evaluation is essential in ensuring that the program's requirements, courses and experience produce the desired outcomes.

B. Describe the admission standards and graduation requirements for the program.

The Department of Engineering Technology requires an appropriate baccalaureate degree from an accredited college or university. An applicant must have a GPA of 3.0 (scale is 4.00 = A) or the equivalent, in the last two years of work leading to the bachelor's degree. A student who enters a graduate degree is expected to have undergraduate educational experiences, including general education studies similar to those required for the baccalaureate degree at UCF. The department also requires completion of the Graduate Record Examination (Quantitative and Verbal sections) and three letters of recommendation assessing the applicant's potential to do Masters-level work. A letter of professional intent and a resume should be submitted by the candidate to the Department.

Deficiencies for admission to the graduate program, if any, are specified at the time of admission. The applicant's past work and professional experience is also evaluated and taken into consideration when determining admission classification. To be considered for regular admission, a 3.0 GPA is required.

Graduation requirement

All candidates for the Master of Science in Technology degree program are required to complete a minimum of 30 semester hours of graduate credit. Of those, a minimum of 50% of semester hours must be at the 6000-level courses or higher and part of the approved program. Additional courses may be assigned by the faculty advisor depending on the background of the candidate.

Program Administration

A faculty member of the engineering technology department will be selected to serve as the Graduate Program Coordinator. Staff support will be necessary to assist the Graduate Program Coordinator and will come from the engineering technology department.

Graduate Program Coordinator

The Graduate Program Coordinator will administer the M.S. Program in Technology. The Department Chair will appoint a faculty member to the Graduate Program Coordinator position. The Graduate Program Coordinator must be active in the graduate program and research. The Graduate Program Coordinator will receive some FTE for this responsibility each semester, including summer. The Chair will periodically re-assess this assignment for possible additional FTE to be allocated to the Graduate Program Coordinator as the program grows.

The duties of the Graduate Program Coordinator will include, but not be limited to, the following:

- Coordinating the recruitment of students into the M.S. program.
- In consultation with the Department Chair, developing the annual budget for the graduate program.

- Assigning incoming students to a temporary Academic Advisor if necessary, and assisting students in selecting a permanent Academic Advisor if necessary.
- Monitoring the progress of graduate students.
- In consultation with the Department Chair, assigning duties of Teaching Assistants.
- Informing graduate students of opportunities such as fellowships, awards, professional meetings, or other forms of professional advancement.
- Ensuring compliance to all rules and guidelines at all levels of university governance.
- In consultation with the Department Chair, allocating office space to graduate students.
- In consultation with the Department Chair, establishing and monitoring a mentoring program for Technology faculty who have not had experience in chairing an M.S. or other similar type of committee such as Honors in the Major.

*Also, include an institutional effectiveness matrix for the program.

C. Describe the curricular framework for the proposed program, including number of credit hours and composition of required core courses, restricted electives, unrestricted electives, thesis requirements, and dissertation requirements. Identify the total numbers of semester credit hours for the degree.

The proposed Master of Science in Technology Program curriculum consists of the following components:

	Credits
Core Courses	15
Electives	12
Directed Research	3
Total	**30**

Upon completion of core courses, students will choose four elective courses from a list of technical electives in order to gain their specialization skills. Elective courses must be chosen based on students' background and his/her goals and advisor's approval. Finally, every student must complete a three-credit directed research course.

All candidates for the Master of Science in Technology degree program are required to complete a minimum of 30 semester hours of graduate credit. Of those, a minimum of 50% semester hours must be 6000-level courses and part of the approved program. Additional courses may be assigned by the faculty advisor depending on the background of the candidate.

Graduate Program of Study

The program of study is designed to promote greater depth of understanding and preparation in technology as it can be applied to industry and education. The program of study is planned in consultation with an appointed advisor. It is designed for flexibility, permitting the student to

select a combination of courses to meet individual career goals.

Required Core Courses:
Students will be required to complete a set of core courses. These core courses provide an in-depth study of the foundational knowledge and skills required of the discipline, including coursework in project management, quality control, process improvement, management information systems, Statistics, and applied research methods. Students are required to take one core course in each category from the list for a total of 15 hours.

Core Courses:

- **Research Methods**:   3 Cr.

  o   ETG 5xxx   Applied Research Methods

- **Technology Management**:   3

  o   ETI 6xxx   Technology for Project Management

  o   EIN 5140   Project Management

- **Quality Planning and Assurance**:   3

  o   ETI 6xxx   Quality Planning & Analysis for Enterprise

  o   ESI 5227   Total Quality Improvement

- **Information Systems**:   3

  o   EIN 5117   Management Information Systems

  o   ISM 5021   Introduction to Management Information Systems

- **Statistics:**   3

  o   STA 5206   Statistical Analysis

  o   ESI 5219   Engineering Statistics

                                                                    Total   15 Cr.

Elective Courses:
Students will choose electives from prescribed groups of courses. These courses are used to provide roadmaps specific to each area of technology, by offering advanced topics in concentration areas leading to better problem solving skills. Elective courses are not limited to the sample electives given below. Electives will be chosen based on students' goal and background and has to be approved by student's faculty advisor.

Electives:

- CET 6xxx   Enterprise Architecture   3
- CET 6xxx   Advanced Topics in Technology   3
- CET 6xxx   Practice of Digital Forensics   3
- CET 6xxx   Intrusion Response Technologies   3
- CET 6xxx   OS and File System Forensics   3
- ETM 5xxxC   Applied CFD and Heat Transfer   3
- ETM 5xxxC   Applied Finite Element Analysis   3
- CGS 5131   Computer Forensics I   3
- CGS 5132   Computer Forensics II   3
- EIN 5255   Interactive Simulation   3
- EIN 6645   Real Time Agents   3
- ECO 6115   Economic Analysis of the Firm   3
- MAN 6245   Organizational Behavior & Development   3
- MAN 6115   Entrepreneurship   3
- MAN 6296   Executive Leadership   3
- MAN 6395   Leadership Development and Coaching   3
- MAR 6406   Sales Management and Control   3
- MAR 6677   Marketing Engineering   3
- MAR 6809   Digital Marketing Management   3
- MAR 6816   Strategic Marketing Management   3
- MAR 6839   Marketing of High-Technology Products   3
- ISM 6367   Strategic Information Systems   3
- STA 6106   Statistical Computing   3
- STA 6662   Statistical Methods for Industrial Practice   3
- STA 5103   Advanced Computer Processing of Statistical Data   3

- STA 6714   Data Preparation   3

- STA 5703   Data Mining Methodology I   3

- STA 5704   Data Mining Methodology II   3

Directed Research:
Students will have to complete a directed research course. The research will be worth 3 credit hours; the student will work with a faculty advisor typically for one semester. The research results are expected to advance students' knowledge, leading to publication in peer-reviewed journals or conference proceeding.

     D. Provide a sequenced course of study for all majors, concentrations, or areas of emphasis within the proposed program.

A typical program of study

Fall 2008	Instructor
ETG 5xxx Applied Research Methods	Eaglin/Divo
EIN 5117 Management Information Systems	IE Faculty
STA 5206 Statistical Analysis	COS Faculty

Spring 2009	Instructor
ETI 6xxx Technology for Project Management	Yousef
ETI 6xxx Quality Planning & Analysis for Enterprise	Eaglin
Electives	UCF Faculty

Summer 2009	Instructor
Electives	UCF Faculty
Electives	UCF Faculty
Electives	UCF Faculty

Fall 2009	Instructor
CET 6xxx Directed Research	Motlagh

Course Offerings for the Next Five Years

Course	# Course Description	2008 SP	SU	FA	2009 SP	SU	FA	2010 SP	SU	FA	2011 SP	SU	FA	2012 SP	SU	FA
	Required Courses															
ETG 5xxx	**Applied Research Methods**			X			X			X	X		X	X		X
EIN 5117	**Management Information Systems**			X			X			X			X			X
STA 5206	**Statistical Analysis**			X			X			X			X			X

ETI 6xxx	Technology for Project Management	X			X			X			X			X		
ETI 6xxx	Quality Planning & Analsis for Enterprise	X			X			X			X			X		
	Elective Courses															
CET 6xxx	Enterprise Architecture				X			X			X			X		
ETG 6xxx	Advanced Topics in Tech.				X			X			X			X		
CET 6xxx	Practice of Digital Forensics	X		X	X		X	X		X	X		X	X		X
CET 6xxx	Intrusion Response Technologies	X		X	X		X	X		X	X		X	X		X
CET 6xxx	OS and File System Forensics			X			X			X			X			X

E. Provide a one- or two-sentence description of each required or elective course.

ETG 5xxx. Applied Research Methods
3(3,0). Broad overview of applied research methods from the literature review process to investigation, modeling, experimental design, analysis of results, and technical reports.

CET 6xxx. Advanced Topics in Technology
3(3,0). PR: ETG 5xxx or C.I.

ETI 6xxx. Technology for Project Management
3(3,0). All around the globe IT is playing an increasingly vital role in helping organizations gain the competitive advantage around the globe. This course offers a global perspective on how IT is transforming business. The course provides information on how organizations operate and compete in the digital economy, and how IT can assist this transformation.

ETI 6xxx. Quality Planning and Analysis for Enterprises
3(3,0). Systematic Road Map to Quality. Defines most major activities that managers and change agents must include if they want to see sustainable results. Provides a set of sequential activities that must be implemented to achieve Enterprise Quality. Also provides tools to identify gaps in their current quality plan.

CET 6xxx. Incidence Response Technologies
3(3,0). Covers security incidents and intrusions, including identifying and categorizing incidents; responding to incidents; log analysis; network traffic analysis; tools; and creating an incident response team.

CET 6xxx. OS and File System Forensics
3(3,0). In-depth coverage of computer forensics-related issues associated with multiple Operating systems, multiple file systems, and applications.

CET 6xxx. Enterprise Architecture
3(3,0). Technology has revolutionized business and government. And while these technologies have made possible many things and tremendously improved productivity, it remains difficult to integrate technology and the enterprise. During the last decade, a discipline known as enterprise architecture has developed to effectively and efficiently harmonize business processes and technology. In this class, we will study the underlying principles of enterprise architecture (EA),

look at how it has evolved and then apply these lessons to a case study.

CET 6xxx: Practice of Digital Forensics
3(3,0). PR: CGS 5131 or C.I. Application of digital scientific techniques to solve information assurance, forensic and legal problems.

ETM 5xxxc: Applied Computational Fluid Dynamics and Heat Transfer
3(2,2). Introduction to CFD analysis with hands-on applications using commercial packages. Grid generation, property selection, boundary conditions, turbulence models, and post-processing are topics to be covered.

ETM 5xxxC. Applied Finite Element Analysis
3(2,2). Introduction to Finite Element analysis with hands-on applications using commercial packages. Meshing, property selection, load, boundary conditions, post-processing, and reporting are topics to be covered.

CGS 5131. Computer Forensics I: Seizure and Examination of Computer Systems
3(3,0). PR: Computer literacy and C.I. Legal issues regarding seizure and chain of custody. Technical issues in acquiring computer evidence. Popular file systems are examined. Reporting issues in the legal system.

CGS 5132. Computer Forensics II: Network Security, Intrusion, Detection, & Forensic Analysis
3(3,0). PR: CGS 5131. Computer network protocols and security, network intrusion detection and prevention, digital evidence collection and evaluation, and legal issues involved in network forensics analysis.

STA 5206. Statistical Analysis
3(3,0). PR: STA 2023. Graduate status or senior standing or C.I. Data analysis; statistical models; estimation; tests or hypotheses; analysis of variance, covariance, and multiple comparisons; regression and nonparametric methods.

ESI 5219. Engineering Statistics
3(3,0). PR: C.I. Discrete and continuous probability distributions, hypothesis testing, regression, nonparametric stats and ANOVA.

EIN 6645. Real-Time Simulation Agents
3(3,0). PR: EIN 5255C. Mathematical modeling and computer simulation of engineering and scientific systems as agents within a simulation. Examination of hardware, software, and solution methods for real-time systems.

ESI 6224. Quality Management
3(3,0). PR: STA 3032 or equivalent or C.I. Philosophy and concepts of quality management,

organization for quality, quality cost, quality audits and corrective actions, tools and techniques for improvement.

ESI 6225. Quality Design and Control
3(3,0). PR: STA 3032 or equivalent. Concepts and methods for quality design and control, including statistical process control (SPC), control charts, process capability, product and process design and improvement, Taguchi methods, case studies. May be repeated for credit.

ESI 6247. Experimental Design and Taguchi Methods
3(3,0). PR: STA 3032 or ESI 4234. Introduction to Taguchi Concepts and Methodologies, use of design of experiments for quality design and improvement.

EIN 5117. Management Information Systems I
3(3,0). PR: C.I. The design and implementation of computer-based Management Information Systems. Consideration is given to the organizational, managerial, and economic aspects of MIS.

EIN 5255. Interactive Simulation
3(2,2). PR: graduate standing or C.I. Introduction to significant topics relative to the development and use of simulators for knowledge transfer in the technical environment.

EIN 5140. Project Engineering
3(3,0). PR: Graduate standing or C.I. Role of engineer in project management with emphasis on project life cycle, quantitative and qualitative methods of cost, schedule, and performance control.

ESI 5227. Total Quality Improvement
3(3,0). PR: STA 3032 or equivalent. Quality improvement (QI) tools and techniques, advanced QI techniques, quality improvement systems, total quality management concepts and implementation, planning and management tools, and case studies.

ISM 5021. Introduction to Management Information Systems
3(3,0). PR: Acceptance into the graduate program. Designed to provide the student with the fundamentals of business data processing and management information systems used by organizations in a modern society.

ECO 6115. Economic Analysis of the Firm
3(3,0). PR: CBA Master's Program of Study Foundation Core. Commodity price and output determination; factor price determination and functional income distribution; analysis of different types of markets.

MAN 6245. Organizational Behavior and Development
3(3,0). PR: CBA master's program of Study Foundation Core. The analysis of human behavior in organizations in terms of the individual, small group, inter-group relationships, and the total organization.

MAN 6296. Executive Leadership
3(3,0). PR: Admission to the Executive MBA Program. A review of the theory, research, and practice of leadership in organizations. Special attention to contemporary leadership issues, including transactional and transformational leadership.

MAN 6395. Leadership Development and Coaching
3(3,0). PR: Graduate standing or C.I. Course is designed to prepare students to understand the nature and role of leadership development with an emphasis on coaching.

MAR 6406. Sales Management and Control
3(3,0). PR: Graduate standing and MAR 5055 or equivalent. Designed to provide an analysis of the sales and management process. Topics covered include selection and training, compensation, behavioral issues and sales planning, evaluation, and control.

MAR 6677. Marketing Engineering
3(3,0). PR: CBA master's program of Study Foundation Core. Acquire knowledge about a variety of planning and decision models used to creatively solve marketing problems.

MAR 6809. Digital Marketing Management
3(3,0). PR: CBA master's program of Study Foundation Core. Understand how digital marketing differs from conventional marketing. Develop an ability to formulate digital marketing applications and build viable digital marketing strategies.

MAR 6816. Strategic Marketing Management
3(3,0). PR: MBA Professional Core I. Marketing competitive strategy formulation with respect to product, pricing, promotion and distribution. Course aims at developing strategic thinking, functional marketing expertise and analytical skills.

MAR 6839. Marketing of High-Technology Products
3(3,0). PR: CBA master's program of Study Foundation Core. Understand high technology marketing issues. Acquire concepts and tools to develop high technology business models. Develop insights into branding, new product development, forecasting and CRM.

ISM 6367. Strategic Information Systems
3(3,0). PR: MBA Professional Core I. This course concerns the strategic deployment and management of information technology (IT) within today's complex business organizations.

STA 5103. Advanced Computer Processing of Statistical Data
3(3,0). PR: STA 4163 and knowledge of a programming language, graduate status or senior standing, or C.I. Use of SAS and other statistical software packages; data manipulation; graphical data presentation; data analysis; creating analytical reports.

STA 5703. Data Mining Methodology I
3(3,0). PR: STA 5103 and STA 5206, graduate status or senior standing, or C.I. Data mining to uncover valuable information through SEMMA (Sample, Explore, Model, Modify, and Access).

Process with neural network and decision tree.

STA 6106. Statistical Computing I
3(3,0). Computer systems, approximating probabilities/percentiles, random number generation, linear model computations, density estimation.

STA 6662. Statistical Methods for Industrial Practice
3(3,0). Variance components, PCRs, autocorrelation structures, charting, EVOP, design strategies, calibration, standards, and associated awards.

STA 6704. Data Mining Methodology II
3(3.0). PR: STA 5703 and STA 6106. Statistical techniques for data mining that include discriminant analysis, logistic regression, and factor analysis.

STA 6714. Data Preparation
3(3,0). PR: STA 5103. Variable reduction, variable clustering, missing value inputation, and data survey. Additional data preparation topics associated with data mining techniques.

> **F. For degree programs in the science and technology disciplines, discuss how industry-driven competencies were identified and incorporated into the <u>curriculum and identify if any industry advisory council exists to provide input for curriculum development and student assessment.</u>**

The core courses of the MST, project management, quality control & analysis for enterprise, management information systems, statistics, and applied research methods, cover the essential knowledge and skills required of a Technologist; the elective courses provide a broader range of topics in related disciplines to further the understanding of scientific and technical issues for advanced investigation and research. the combination of core and elective courses attempt to satisfy the competencies required of the technology discipline.

> **G. For all programs, list the specialized accreditation agencies and learned societies that would be concerned with the proposed program.   Will the university seek accreditation for the program if it is available? If not, why? Provide a brief timeline for seeking accreditation, if appropriate.**

There are no accrediting bodies that perform accreditation for graduate programs in technology. However, Dr. Motlagh is a program evaluator for ABET/TAC for last six years. He has been trained by ABET and has made six accreditation visits to nationally known universities such as Texas A&M, University, Western North Carolina, Cleveland , etc. Once, such accreditation program becomes available, the department will apply for accreditation.

H. **For doctoral programs, list the accreditation agencies and learned societies that would be concerned with corresponding bachelor's or master's programs associated with the proposed program. Are the programs accredited? If not, why?**

N/A

I. **Briefly describe the anticipated delivery system for the proposed program (e.g., traditional delivery on main campus; traditional delivery at branch campuses or centers; or nontraditional delivery such as distance or distributed learning, self-paced instruction, or external degree programs). If the proposed delivery system will require specialized services or greater than normal financial support, include projected costs in Table 2. Provide a narrative describing the feasibility of delivering the proposed program through collaboration with other universities, both public and private. Cite specific queries made of other institutions with respect to shared courses, distance/distributed learning technologies, and joint-use facilities for research or internships.**

We expect all required courses to be offered online in order to reach a broader and more diverse student population. Online students need to show evidence of adequate access to computing and networking facilities, and must have sufficient computer background through education and/or work experience. These students may complete the entire degree online by choosing proper elective courses of the proposed curriculum. Online -- or web-based -- courses allow students from any geographical location to participate, regardless of geographic proximity to UCF. A second advantage is that online courses offer flexibility for those individuals who are unable to attend traditional classroom lectures. The flexibility offered by online courses will facilitate the completion of the degrees, as well as allow us to reach a broader and more diverse population of students.

IX. Faculty Participation

A. **Use Table 4 to identify existing and anticipated ranked (not visiting or adjunct) faculty who will participate in the proposed program through Year 5. Include (a) faculty code associated with the source of funding for the position; (b) name; (c) highest degree held; (d) academic discipline or specialization; (e) contract status (tenure, tenure-earning, or multi-year annual [MYA]); (f) contract length in months; and (g) percent of annual effort that will be directed toward the proposed program (instruction, advising, supervising internships and practica, and supervising thesis or dissertation hours).**

TABLE 4
ANTICIPATED FACULTY PARTICIPATION IN

CODE	Faculty Name or "New Hire"	Academic Discipline/Specialty	Rank	(For Existing Faculty Only)		Initial Date for Participation in Proposed Program	5th Year Workload in Proposed Program (Portion of Person-year)
				Contract Status (Tenure status or equivalent)	Highest Degree Held		
A	Ronald Eaglin	Eng. Technology	Assc.	Tenure earning	Ph.D.	2008	0.20 FTE
A	Bahman Motlagh	Eng Technology	Assc.	Tenured	Ph.D.	2008	0.25 FTE
A	Eduardo Divo	Eng. Technology	Asst.	Tenure earning	Ph.D.	2008	0.25 FTE
A	Philip Craiger	Eng. Technology	Asst	Tenure-earning	Ph.D.	2008	0.25 FTE
A	Scott Shepard	Eng. Technology	Asst	Tenure-earning	Ph.D.	2008	0.10 FTE
A	Nebil Misconi	Eng. Technology	Prof.	Tenured	Ph.D.	2009	0.10 FTE
A	T. Ali	Eng Technology	Asst	Tenure earning	Ph.D.	2009	0.10 FTE
C	Nebil Yousef	Eng. Technology	Asst.	Non-tenure	Ph.D.	2008	0.25 FTE
C	Mark Pollitt	Eng Technology	Asst.	Non-tenure	MS	2009	0.25 FTE

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B. **Use Table 2 to display the costs and associated funding resources for existing and anticipated ranked faculty (as identified in Table 2). Costs for visiting and adjunct faculty should be included in the category of Other Personnel Services (OPS). Provide a narrative summarizing projected costs and funding sources.**

TABLE 2

PROJECTED COSTS AND FUNDING SOURCES

Instruction & Research Costs (non-cumulative)	Year 1						Year 5				
	Funding Source					Subtotal E&G and C&G	Funding Source				Subtotal E&G and C&G
	Reallocated Base * (E&G)	Enrollment Growth (E&G)	Other New Recurring (E&G)	New Non-Recurring (E&G)	Contracts & Grants (C&G)		Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)	
Faculty Salaries and Benefits	$27,532	$13,766	$0	$0	$0	$41,298	$27,532	$82,597	$0	$0	$110,129
A&P Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
USPS Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Personnel Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Assistantships and Fellowships	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Library	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Expenses	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Special Categories	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs	$27,532	$13,766	$0	$0	$0	$41,298	$27,532	$82,597	$0	$0	$110,129

The program utilizes a large number of existing courses, and has in the required core only 3 new course developments. This leads to a relatively low cost for the program. All projected costs are to provide faculty for the new courses.

C. Provide the number of master's theses and/or doctoral dissertations directed, and the number and type of professional publications for each existing faculty member (do not include information for visiting or adjunct faculty).

Faculty Name	Theses	Dissertations	Professional Publications
Ronald Eaglin			• 1 Book authored • 6 Ph.D Students Committees • Over 20 Masters Students Committees
Bahman Motlagh			• 1 Book Authored/Edited. • 5 Refereed Journal Papers. • 23 Refereed Conference Papers. • 18 Refereed Conference Abstracts/Oral Presentations. • 1 Research reports • 2 Technical reports
Eduardo Divo			• 3 Books Authored/Edited. • 3 Book Chapters Authored. • 30 Refereed Journal Papers. • 72 Refereed Conference Papers. • 13 Refereed Conference Abstracts/Oral Presentations.
Philip Craiger			• 1 Books Authored/Edited. • 17 Book Chapters Authored. • 11 Refereed Journal Papers. • 13 Refereed Conference Papers. • 61 Refereed Conference Abstracts/Oral Presentations.
Scott Shepard			
Nebil Misconi			
T. Ali	2		• 6 Refereed Journal Papers. • 13 Refereed Conference Papers. • 11 Refereed Conference Abstracts/Oral Presentations.
Nebil Yousef			• 1 Refereed Journal Papers. • 13 Refereed Conference Papers.
Mark Pollitt			

D. Provide evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student HC in major or service courses, degrees granted, external funding attracted, as well as qualitative indicators of excellence.

Current productivity levels in the Engineering Technology department are high by both College and University standards. The standard course load for ENT faculty is 3/3 with at least 2 courses taught in the Summer term. The program review data given in the appendix provide quantitative indicators of the productivity in student enrollments and research funding supports.

Table 5 demonstrates the research productivity for the Department of Engineering Technology for years 1999-2007.

Table 5. Engineering Technology Research Productivity.

Engineering Technology

FY	# Faculty*	Researchers	New Funding	Pre Encumb.	Total Expenditures
1999	9	4	$43,765.00	$0.00	$30,624.09
2000	9	3	$49,442.00	$0.00	$33,343.64
2001	10	5	$169,241.00	$0.00	$103,347.85
2002	9	4	$103,465.80	$0.00	$95,362.04
2003	12	4	$249,674.50	$0.00	$195,362.64
2004	10	6	$362,900.80	($636.29)	$332,982.05
2005	11	7	$946,150.95	($40,815.85)	$668,135.10
2006	13	7	$728,899.14	$40,815.85	$885,675.57
2007	16	7	$1,375,270.38	$2,244.60	$538,363.85

Table 6 below shows the head counts for the Engineering Technology courses taught between 2004 and 2005

Table 6: Head counts of Engineering Technology Courses Fall 2004 through Spring 2007.

Course #	Course Description	FA 04	SP 05	SU 05	FA 05	SP 06	SU 06	FA 06	SP 07
		L/D/T	L/D/T	L/D/T	L/D/T				
CET 2123	Microprocessors Electr I								
CET 2364	Systems Applications in C	32/40/72	37/36/73		32/47/79	58		70	75
CET 3010	Introduction to Information Tech.	50/34/84	32/38/70		46/30/76	55		70	72
CET 3144C	Applied Microprocessor Tech.								
CET 3198C	Digital Systems		39/39-15/24/39			39			35
CET 3323C	Digital Technology	60/60-14/46/60			64/64-23/41/64	40		38	32
CET 3383	Applied Systems Analysis I	13/19/32	30/42/72			78			77
CET 3503	Microcomputer Technology I				12/20/32				
CET 3529	Linux/ Unix Sys Administration				30/28/58	57		38	57
CET 3752	Intro to Telephony	35/39/74			37/25/62				
CET 3930	Linux Administration and Applications		52/20/72						
CET 4134C	Microprocessor Electronics II			0/19/19-6/13/19			31		
CET 4138	Digital Programmable Devices			0/19/19-9/10/19					
CET 4333	Computer Organization and Design						87		
CET 4334C	Applied Computer Systems II								

Course	Title								
CET 4427	Applied Database I	30/28/58	30/31/61		34/24/58	55		53	40
CET 4429	Applied Database II		20/11/31			28			22
CET 4469C	Applied Infobases								
CET 4483	Intro to Local Area Network Tech.		55/46/101			94			88
CET 4505	Applied Operating Systems I	35/21/56			47/38/85				
CET 4523	Applied Systems Analysis II			7/8/15					
CET 4583	Web-based Systems I			58/36/94			70		
CET 4584	Web-based Systems II	22/9/31			24/18/42				
CET 4663	Computer and Network Security				45/44/89				48
CET 4741L	Computer Networking Laboratory								
CET 4748	Wide Area Network I	24/36/60			35/17/52				
CET 4749	Wide Area Network II		10/8/18			16			19
CET 4884	Security Method & Practice	0/16/16				62		2	42
CET 4932	Investigative Digital Technologies		40/30/70				15		
CET 4889	Sec Senor & Biometrics					26			21
CET 4915C	Senior Design Project								
CET 4931	Current Topics Tech			31/15/46					
CET 4932	Prac Info Secty						16		
EET 3085C	Electricity and Electronics	40/40-40/40	20/18/38-38/38	34/34-34/34	70/70-70/70	47	29		35
EET 3143C	Elect Devices/Circuits						11		
EET 3716	Network Analysis		7/11/18	9/8/17		16	13		32
EET 3930	Photonics Simulation								21
EET 4158C	Linear Integrated Circuits	20/20			0/22/22				
EET 4329C	Communications Systems								11
EET 4339C	Antennas and Propagation								
EET 4359C	Digital Communications Systems								
EET 4389C	Satellite Communications Systems								
EET 4548	Power Systems	5/12/17			11/15/26				
EET 4732C	Feedback Control Systems		20/20			20			18
EET 4915C	Senior Design Project								
EMA 4103	Space Environment					14			
EST 3211	Wave Photonics		5/9/14			16			11
EST 3213	Photonics Simulation	0/6/6			0/8/8				
EST 3222	Photonics Technology			12/18/30	4/9/13				
EST 3543C	Prog Logic Apps and Devices	20/20-20/20	20/20-20/20	20/20-9/11/20	19/19-3/16/19	20	18	20	19
EST 4227	Photonics Sensors & Devices		0/8/8			4			
EST 4236	Laser Systems Technology	11/7/18			7/3/10				
EST 4256	Photonics Communication		1/9/10			5			5
EST 4502C	Metrology and Instrumentation		0/37/37-15/22/37			33			40

Course	Title	C1	C2	C3	C4	C5	C6	C7	C8
ETC 4206	Construction Estimating		0/0/0						17
ETC 4241C	Construction Materials and Methods				10/16/26				
ETC 4242	Construction Contracts & Specs		6/11/17			15			20
ETC 4243	Building Systems					11			
ETC 4414C	Applied Structural Design I	7/10/17							
ETC 4415C	Applied Structural Design II				3/3/06				
ETD 3350C	Applied CADD	0/29/29			0/31/31				
ETG 3533C	Applied Engr Strength and Materials		19/13/32-13/19/32			38			38
ETG 3541	Applied Mechanics	11/31/42	22/27/49	0/0/0	11/33/44	42		77	47
ETG 4950C	Senior Design Project	0/24/24	0/29/29		27/0/27	38		32	38
ETI 3116	Applied Engr. Quality Assurance	20/30/50		7/18/25	18/38/56				
ETI 3418C	Comp Numerical Controls, Mach Apps			5/20/25-9/16/25		20			
ETI 3421	Materials and Processes	13/22/35			17/26/43				
ETI 3651C	Computer Applications	0/30/30	0/52/52	0/49/49	0/26/26	16	30	35	34
ETI 3671	Technical Economic Analysis		26/36/62	10/24/34		64	52	64	75
ETI 3690	Technical Sales					24			
ETI 4186	Applied Reliability		######						18
ETI 4205	Applied Logistics	6/10/16			14/6/20				
ETI 4448	Applied Project Management		28/26/54	31/32/63		46	68		
ETI 4635	Technical Administration	19/14/33	14/18/32		21/20/41	25			
ETI 4640	Process Planning & Work Measure	11/6/17			7/8/15				
ETI 4661C	Applied Facilities Planning & Design								
ETI 4700	Occupational Safety						62		
ETI 4835	Rocket Propulsion Technology	3/2/05			13/3/16				
ETI 4836	Space Systems Technology	11/7/18			10/3/13				
ETI 4837	Tech. of Small Space Payloads				0/12/12				
ETI 4838	Flight Dynamics Technology		11/4/15			7			
ETI 4839	Space Electro-Optics Technology								
ETI 4932									
ETM 4220	Applied Energy Systems		14/20/34			46			
ETM 4225	Manuf of Photonics				2/6/08				
ETM 4232C	Applied Heat Transfer		0/0/0						
ETM 4331C	Applied Fluid Mechanics			15/5/20					

ETM 4403C	Applied Kinematics									
ETM 4512C	Applied Design of Machine Elements									
ETM 4755	Applied Air Conditioning				0/0/0					
MAP 3401	Problem Analysis	8/18/26	6/14/20		14/9/23	16				
STXXXX	Introduction to IT									
SUR 3930										2
Totals		380/746/1126	540/818/1358	218/409/627	557/868/1425					

X. Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the proposed program through Year 5. Provide the total number of volumes and serials available in this discipline and related fields. List major journals that are available to the university's students. Include a signed statement from the Library Director that this subsection and subsection B have been reviewed and approved for all doctoral level proposals.

Waiting for library analysis.

B. Describe additional library resources that are needed to implement and/or sustain the program through Year 5. Include projected costs of additional library resources in Table 3.

Waiting for library analysis.

_____   _____

Library Director   Date

C. Describe classroom, teaching laboratory, research laboratory, office, and other types of space that are necessary and currently available to implement the proposed program through Year 5.

Classroom

All proposed graduate courses offered by the Engineering Technology department will be online, and therefore will require no or minimum classroom usage. ENT also has a large lab room that could be used for classes during evening. This lab holds 20 students. ENT computer lab will be most useful in providing hands-on experience.

D. Describe additional classroom, teaching laboratory, research laboratory, office, and other space needed to implement and/or maintain the proposed program through Year 5. Include any projected Instruction and Research (I&R) costs of additional space in Table 2. Do not include costs for new construction because that information should be provided in response to X (J) below.

No additional classrooms or teaching or research laboratories are needed to implement this program. Since no new faculty are planned, no new office space is required either.

E. **Describe specialized equipment that is currently available to implement the proposed program through Year 5. Focus primarily on instructional and research requirements.**

None are needed.

F. **Describe additional specialized equipment that will be needed to implement and/or sustain the proposed program through Year 5. Include projected costs of additional equipment in Table 2.**

None are needed.

G. **Describe any additional special categories of resources needed to implement the program through Year 5 (access to proprietary research facilities, specialized services, extended travel, etc.). Include projected costs of special resources in Table 2.**

None are needed.

H. **Describe fellowships, scholarships, and graduate assistantships to be allocated to the proposed program through Year 5. Include the projected costs in Table 2.**

Because UCF currently does not have a graduate program in Technology, it does not have any graduate fellowships, scholarships, or dedicated graduate assistantships allocated to the program. We plan on using funds from research grants to provide our best students with graduate assistantships.

I. **Describe currently available sites for internship and practicum experiences, if appropriate to the program. Describe plans to seek additional sites in Years 1 through 5.**

The program is designed as a Masters program for working professional students. As such it is expected that the vast majority of students will be working professionals and thus have no need for internship or practicum experiences.

J. **If a new capital expenditure for instructional or research space is required, indicate where this item appears on the university's fixed capital outlay priority list. Table 2 includes only Instruction and Research (I&R) costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form below. It is expected that high enrollment programs in particular would necessitate increased costs in non-I&R activities.**

No new capital expenditures are needed.

Appendix

Academic Program Reviews, 2005-2006

College of Engineering and Computer Science
Department of Engineering Technology
(B.S.E.T., B.S.E.E.T., B.S.I.S.T.)

Department Data

Total Student Credit Hours by Level:

Category	Engineering Technology SCH	Total
	2003-04	**2004-05**
Lower	270	432
Upper	7,465	7,931
Graduate		
Thesis		
Total	7,735	8,363

Faculty Information:
(TENURED OR TENURE-EARNING, NON-TENURE TRACK, VISITING, ADJUNCT, GTA)

Category	Engineering Technology SCH	Total
	2003-04	**2004-05**
Lower	270	432
Upper	7,465	7,931
Graduate		
Thesis		
Total	7,735	8,363

Sponsored Research:
(These data have been provided by the Office of Research and include only external funds that flow through that office.)

Engineering Technology			
Year	Federal	Non-federal	Total
2000-01	$129,200	$40,041	$169,241
2001-02	$5,285	$96,552	$101,837
2002-03	$323,290	$165,238	$488,528
2003-04	$237,298	$329,667	$566,964
2004-05	$298,607	$578,803	$877,410

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Program Data

Enrollment and Degree Production by Level and Ten-year Projections (from Spring 2004):

Year	Enrollment Engineering Technology, B.S.	Academic Year	Degrees Granted Engineering Technology, B.S.
Fall 2000	93	2000-01	20
Fall 2001	118	2001-02	15
Fall 2002	117	2002-03	26
Fall 2003	137	2003-04	20
Fall 2004	169	2004-05	23

Year	Enrollment Projection Engineering Technology, B.S.	Academic Year	Degree Projection Engineering Technology, B.S.
Fall 2004	145	2004-05	25
Fall 2005	157	2005-06	28
Fall 2006	168	2006-07	30
Fall 2007	179	2007-08	31
Fall 2008	195	2008-09	33
Fall 2009	211	2009-10	35
Fall 2010	217	2010-11	36
Fall 2011	221	2011-12	37
Fall 2012	227	2012-13	38
Fall 2013	232	2013-14	39

Year	Enrollment Electrical Engineering Technology, B.S.	Academic Year	Degrees Granted Electrical Engineering Technology, B.S.
Fall 2000	156	2000-01	28
Fall 2001	189	2001-02	34
Fall 2002	216	2002-03	28
Fall 2003	190	2003-04	29
Fall 2004	111	2004-05	29

Year	Enrollment Projection Electrical Engineering Technology, B.S.	Academic Year	Degree Projection Electrical Engineering Technology, B.S.
Fall 2004	215	2004-05	31
Fall 2005	290	2005-06	38
Fall 2006	339	2006-07	41
Fall 2007	387	2007-08	46
Fall 2008	462	2008-09	54
Fall 2009	467	2009-10	55
Fall 2010	466	2010-11	54
Fall 2011	464	2011-12	54
Fall 2012	463	2012-13	54
Fall 2013	462	2013-14	53

Year	Enrollment Information Systems Technology, B.S.	Academic Year	Degrees Granted Information Systems Technology, B.S.
Fall 2000		2000-01	
Fall 2001		2001-02	
Fall 2002		2002-03	
Fall 2003	85	2003-04	19
Fall 2004	169	2004-05	38

Year	Enrollment Projection Information Systems Technology, B.S.	Academic Year	Degree Projection Information Systems Technology, B.S.
Fall 2004	68	2004-05	0
Fall 2005	76	2005-06	6
Fall 2006	84	2006-07	7
Fall 2007	92	2007-08	8
Fall 2008	100	2008-09	8
Fall 2009	107	2009-10	9
Fall 2010	115	2010-11	10
Fall 2011	121	2011-12	10
Fall 2012	130	2012-13	11
Fall 2013	136	2013-14	11

Highlights

Department of Engineering Technology

- Engineering Technology Department goals are:
  - Goal 1: A national caliber, diverse faculty who are recognized leaders in teaching.

  - Goal 2: Distinguished, innovative undergraduate and graduate programs.

  - Goal 3: A model for university outreach, globalization, and partnerships.

  - Goal 4: An organization committed to obtaining the highest quality standards in all phases of its operations, processes, and management.

  - Goal 5: An organization successful in obtaining resources to support academic development.

- There are three faculty members in the department currently active in research with the Public Safety Technology Center working on software development and application in information systems; one faculty member has a joint appointment with the MMAE department, one faculty member is actively engaged in NSF curriculum development grant work; one faculty member holds a joint appointment with the National Center for Forensic Sciences working primarily in digital forensics. One faculty member holds a joint appointment with the Center for Research and Education in Optics and Lasers (CREOL).

- Provide faculty and staff with more opportunities for professional development (organized development). Provide faculty with more financial resources for equipment purchases and lab development.

- The lower level and upper level required courses are delivered using the following formats because many students are employed:
  a) Live (face-to-face)instruction
  b) FEEDS/Live (lecture on FEEDS, lab is live)
  c) FEEDS (video streamed over Internet)

B.S. Electrical Engineering Technology
- Last accredited by the Accreditation Board for Engineering & Technology (ABET) in 2003. The next accreditation visit is in 2009.

- Engineering Technology ranked 36th by ASEE in 2003-04 for engineering technology bachelor's degrees awarded by school; ranked 22nd in terms of degrees awarded to women by school; and ranked 47th in terms of enrollment by school.

- The number of degrees granted has maintained since 2000-01. The program enrollment is expected to grow at an average of 20 percent per year over the next ten-year period. The decrease in enrollment seen from 2001-03 was due to the opening of the IST program.
- 16.2% of the Engineering Technology B.S.E.E.T. students were female (Fall 2004), compared to 16.7% in the Fall 2000. This compares to 13.8% of the students in the College of Engineering and Computer Science being female.
- Student Enrollment Status: 36.9% of our B.S.E.E.T. students were full time and 63.1% part time (Fall 2004) compared to 25% full time and 75% part-time students in Fall 2000.
- Compared to the college and university, there is a higher percentage of ethnic minority students and a higher percentage of community college transfers.
- 100% of the FTIC (first time in college) students graduate in five years or less.
- To remain current, the program would like to hire a faculty member with the expertise in RF and Analog/Digital Communications.
- There are three concentrations: in Engineering Technology B.S.E.E.T. Program: electrical systems, computer systems, and photonics. The photonic concentration is a new concentration within the B.S.E.E.T. major that was added based on the needs of the local community.
- A very high percentage (over 70%) of the Electrical Engineering Technology graduates remain employed in the state of Florida. The average annual first year salary is in the high $40,000 range. The program serves the state of Florida very well by providing education and skills necessary for successful employment.

B.S. Engineering Technology
- Last accredited by the Accreditation Board for Engineering & Technology (ABET) in 2003. The next accreditation visit is in 2009. It is the only Engineering Technology Distance ABET accredited degree program offered in Florida and one of only a few in the country.
- Engineering Technology ranked 36th by ASEE in 2003-04 for engineering technology bachelor's degrees awarded by the school; ranked 22nd in terms of degrees awarded to women by the school. Also ranked 47th in terms of enrollment by the school.
- There are three concentrations in the Engineering Technology B.S.E.T. Program,: operations, design, and space systems. The entire degree of the B.S.E.T., Operations, is delivered using state-of-the-art technology, which includes real-time video streaming (FEEDS) and course management software assisted instruction.
- Space systems is taught at KSC and is able to use up-to-date labs on site. Many of the classes use virtual teams as a part of teaching.
- Fall 2005, the B.S.E.T. program has 5.5 full-time faculty members, one adjunct. Two females, one minority (international). Sixty-three are tenured. Several teaching and research labs support the

program including Harris Computer Laboratory, Manufacturing and Development Lab, ENT Computer Lab, PLC/Feedback Control Lab.
- Enrollment was projected for Fall 2004 at 145. Actual count for Fall 2004 was 169. Now the enrollment for Fall is projected at 232, a 37% increase.
- The number of males has increased from 80.6% in 2000 to 85.2% in 2004, with CECS higher at 86.2%. The percentage of full-time students has increased to 60.9% from 40.9%.The number of minorities has gone from 22.3% to 25.9%.
- 69.2% of our CC transfer students graduate in 4 years or less, compared to 94.2% of all UCF students. Many of our students are older and are working full time.

B.S. Information Systems Technology
- The only A.S. to B.S. program IST in the state of Florida and is one of a few A.S. to B.S. programs to offer a degree totally online. It requires 33 hours of lower level technical course work in the networking area. All upper level courses are hands-on or very practical.
- The IST program enrollment has grown 242.4% since program inception in 2002 through 2005. The IST program enrollment is expected to grow at an average of 10% per year over the next ten-year period.
- The number of IST degrees granted has increased 200% from AY 2003-04 to 2004-05.
- Student enrollment status: 40.2% of the IST students were full time and 59.8% part time (Fall 2004). (College: full time 73.7%, part time 26.3%)
- Student ethnicity (Fall 2004): White - 65.7%; African American - 5.3%; Hispanic - 16%; Asian - 3.6%; American Indian - 2.4%; Non-Resident Alien - 1.2% ; Not Reported - 5.8%
- Community college transfer rates (Fall 2004): FTIC - 21.9%; CC Transfer - 74.6%; Other Transfer - 3.6% Female Representation: 10.7% of the IST students were female (Fall 2004). This compares to 13.8% of the students in the College of Engineering and Computer Science being female.
- The program is not accredited by ABET because there are no completely established criteria for this program.

Recommendations from Consultants, Dean and Program Review Committee:

Department of Engineering Technology
1. Develop joint courses where appropriate with other departments such as the security minor, Secure Computing and Networks (SCAN) developed with IT.
2. Consolidate and streamline programs.
3. Establish a core curriculum for all ENT programs.
4. Develop M.S. programs for ENT; e.g., M.S. IT in collaboration with IT in CS, a general ENT M.S., etc.
5. Develop curricula for construction engineering and construction management undergraduate programs in collaboration with the Civil Engineering and Industrial Engineering and Management Systems departments.
6. Involve more departmental faculty in academic and professional career advising.
7. Explore 2+1+1 (A.S. at the community college, junior level at UCF regional campus, senior level at UCF Orlando campus) programs at UCF regional campuses

Recommendations for all B.S. Programs in Engineering Technology
1. Increase program offerings and increase courses with consideration of student-faculty ratios.
2. Expand program opportunities and space at Cocoa Campus and consider expansion to other regional campuses.

SUMMARY OF 2005-06 PROGRAM REVIEWS

Program Name	CIP	Level	Result of Review
Electrical Engineering Technology	15.0303	B.S.	Maintain
Engineering Technology	15.0899	B.S.	Maintain
Information Systems Technology	15.1202	B.S.	Maintain

New Course Proposals

UNIVERSITY OF CENTRAL FLORIDA
COLLEGE OF ENGINEERING AND COMPUTER SCIENCE
DEPARTMENT OF ENGINEERING TECHNOLOGY

ETG 5xxx: APPLIED RESEARCH METHODS

COURSE OUTLINE

**Catalogue Title
and Description:**   **ETG5xxx. 3(3,0). APP RESEARCH METH.** Broad overview of applied research methods from the literature review process to the investigation, modeling, experimental design, analysis of results, and technical reports.

**Prerequisites and
Co-Requisites:**   Bachelors degree or senior standing.

Textbook and References:

L. Lock, S. Silverman, and W. Spirduso, *Reading and Understanding Research*, Second Edition, Sage Publications, 2004.

J. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Second Edition, Sage Publications, 2003.

H. Michaelson, *How to Write and Publish Engineering Papers and Reports*, Third Edition, Oryx Press, 1990.

L. Chow, Presentation handout: "The Research Process: A How-To Manual for Doing Basic and Applied Research."

K. Houp, T. Pearsall, and E. Tebeaux. *Reporting Technical Information*, 9th edition, Allyn and Bacon, 1998.

R. Day, *How to Write and Publish a Scientific Paper*, 4th edition, Oryx Press, 1994.

Goals/Objectives:

- to understand the steps and methodology of an effective research process,

- to be familiar with and be able to conduct literature reviews,

- to define research objectives and hypotheses,

- to conduct the preliminary investigations of a research idea,

- to understand the concept and importance of modeling,

- to understand the concept and importance of experimentation,

- to review the concept of uncertainty in a model or experiment,

- to be able to gather and analyze results,

- to be able to convey the findings written and orally,

- to understand the report writing process,

- to determine publication avenues,

- to determine funding opportunities and explore the proposal writing process.

Instructor: **Dr. Eduardo Divo**
Phone: (407) 823-4753
Email: edivo@mail.ucf.edu
Website: http://pegasus.cc.ucf.edu/~edivo

Class Meetings:
Lecture: iCLS

Office Hours: ENG1-247
M-R: ?
No appointment necessary

Computer Usage: Use of internet to perform inquiries for added information, searches, and literature reviews.

Library Usage: Students are encouraged to consult library and internet references to aid in researching course material.

Projects: A case study of an applied research process will be conducted during the semester.
Course Topics:
- What is research? Motivations and requirements.
- Research methodologies and habits.
- Literature reviews.
- Problem description and hypothesis.
- Proof of concept and preliminary tests.
- Design of experiments.
- Modeling and simulation.
- Uncertainty.
- Analysis of results.
- Reporting: Written and Orally.
- Publication and the peer-review process.
- Sponsored research, funding opportunities, and proposal writing.

Guidelines: Reading assignments are to be completed prior to class discussion.

Any change to the schedule will be notified at least two weeks in advance.

Attendance is mandatory not only by university regulations but also by new immigration policies.

Course Grading: The final grade will be based upon the following proportions:

Case Study:	
Abstract	10%
Literature Review	30%
Hypothesis	10%
Results and Discussion	40%
Conclusions	10%

Grade Distribution:

$88.00 - 89.99 = A-$	$\geq 90.00 = A$	
$78.00 - 79.99 = B-$	$80.00 - 85.99 = B$	$86.00 - 87.99 = B+$
$68.00 - 69.99 = C-$	$70.00 - 75.99 = C$	$76.00 - 77.99 = C+$
$58.00 - 59.99 = D-$	$60.00 - 65.99 = D$	$66.00 - 67.99 = D+$
$\leq 57.99 = F$		

UNIVERSITY OF CENTRAL FLORIDA
DEPARTMENT OF ENGINEERING TECHNOLOGY
COURSE OUTLINE

Title and Course
Number: ETI 6XXX
                     Quality Planning and Analysis for Enterprises
                     Hours 3 (3, 0)

Instructor: Dr. Nabeel Yousef
Office: RM. 248 Eng. I, Orlando Campus
Office Hours:
Phone: (407) 823-5104
E-mail: nyousef@mail.ucf.edu

Course Description: Systematic Road Map to Quality. The course defines most major activities that managers and change agents must include if they want to see sustainable results. It also provides a set of sequential activities that must be implemented to achieve Enterprise Quality. Also provides tools to identify gaps in their current quality plan.

Prerequisites: **PR: STA 3032 or equivalent.**

Textbook: Juran's Quality Planning & Analysis for Enterprise Quality, 5th Edition, Gryna, Chua and Defeo, McGraw Hill 2007

References: Management and Control of Quality by James R. Evans and William M. Lindsay, 5th Edition, 2001.
                   Introduction to Statistical Quality Control by Montgomery, Wiley, 4th Edition
                   Taguchi's Quality Engineering Handbook, Taguchi and Yano, Wiley, 2004
                   Modern Methods for Quality Control and Improvement: by Harrison M., Wadsworth, Kenneth S. Stephens and A. Blanton Godfrey, 2nd Edition, 2001.
                   Principles for Quality Control by Jerry Banks Wiley 1989

                   Goals/Objectives: Prepare the student for the management of quality in an environment where companies need to excel in a competitive world that features global supply chains, mass customization, and instant communication. Customers' demands for perfection in quality are becoming the norm and failure to meet such goals produces massive shifts in market share.

Computer Usage: Use of spreadsheets (Excel), statistical software(for example Minitab), charts, and graphs for data measurement and presentation.

TENTATIVE COURSE OUTLINE

TOPIC	CHAPTERS	COMPLETION DATE	PRACTICE PROBLEMS	ASSIGNMENTS DUE DATE
BASIC CONCEPTS				
COMPANYWIDE ASSESSMENT OF QUALITY				
QUALITY IMPROVEMENT & COST REDUCTION				
QUALITY CONTROL				
PROCESS MANAGEMENT				
STRATEGIC QUALITY MANAGEMENT				
DEVELOPING A QUALITY CULTURE				
EXAM 1				
CUSTOMER NEEDS				
DESIGNING FOR QUALITY				
OPERATIONS – MANUFACTURING & SERVICE				
INSPECTION, TEST AND MEASUREMENT				
QUALITY AUDITS				
STATISTICS AND PROBABILITY REVIEW				
DATA ANALYSIS				
TOOLS FOR DESIGNING FOR QUALITY				
STATISTICAL PROCESS CONTROL				
EXAM2				

Grading:

Element	Maximum Points
Exam 1 (individual)	**100**
Exam 2 (individual)	**100**
Project (team)	**300**
Research papers	**200**
Case Studies and Assignments	**300**
TOTAL	**1000**

Grading: (continued)

Based on 1000 points

Numerical Grade	Letter Grade
900 to 1000 points	A
800 to 899 points	B
700 to 799 points	C
600 to 699 points	D
Below 600 points	F

UNIVERSITY OF CENTRAL FLORIDA
DEPARTMENT OF ENGINEERING TECHNOLOGY
COURSE OUTLINE

Title and Course
Number: ETI 6XXX
                          Technology for Project Management
                          Hours 3 (3, 0)

Instructor: Dr. Nabeel Yousef
Office: RM. 248 Eng. I, Orlando Campus
Office Hours:
Phone: (407) 823-5104
E-mail: nyousef@mail.ucf.edu

Course Description: All around the globe IT is playing an increasingly vital role in helping organizations gain the competitive advantage around the globe. This course offers a global perspective on how IT is transforming business. The course provides information on how organizations operate and compete in the digital economy, and how IT can assist this transformation.

Prerequisites: **CET3010, ENC3241, ETI4448 or equivalent.**

Textbook: Information Technology for Management: Transforming Organizations in the Digital Economy, 5th Edition, Efraim Turban, Dorothy Leidner, Ephraim McLean, James Wetherbe, Wiley 2005
                   ISBN-10: 0471705225

References:

- Essentials of Strategic Management, 4th Edition by J. David Hunger and Tom Wheelen; Prentice Hall 2006. ISBN: 0131485237
- Managing and Using Information Systems, 3rd edition by Keri E. Pearlson and Carol S. Saunders; Wiley 2005. ISBN: 0471715387
- Fundamentals of Technology Project Management, by Colleen Garton and Erika McCulloch. Mc Press 2005. ISBN: 1583470534
- Information Technology Project Management, 4th Edition by Kathy. Course Technology 2005. ISBN: 0619215267

Goals/Objectives: Prepare the student for transforming their organization in a competitive digital economy using information technology. The course will also prepare students to understand how organization operates on the global level with the existence of the web and the e-business.

Computer Usage: During that different software will be used to design and help in the scheduling and organization of projects within the organization such as MS Visio and MS Project.

TENTATIVE COURSE OUTLINE

TOPIC	CHAPTERS	COMPLETION DATE	PRACTICE PROBLEMS	ASSIGNMENTS DUE DATE
STRATEGIC USE OF INFORMATION TECHNOLOGY IN THE DIGITAL ECONOMY	CH1	2ND WEEK	BOOK: STRATEGIC USE OF INFORMATION TECHNOLOGY FROM OXFORD PRESS AND ANSWER THE ASSIGNMENT QUESTIONS	THE END OF THE SECOND WEEK
INFORMATION TECHNOLOGY CONCEPTS AND MANAGEMENT	CH2	3RD WEEK	**PROJECT DESCRIPTION**	AT THE END OF THE SEMESTER
NETWORK COMPUTING DISCOVERY, COMMUNICATION AND COLLABORATION	CH3	4TH WEEK		
E-BUSINESS AND E-COMMERCE	CH4	5TH WEEK	Case Study: E-Business and Supply Chain Integration	THE END OF THE 6TH WEEK
MOBILE WIRELESS AND PERVASIVE COMPUTING	CH5	6TH WEEK		
TRANSACTION PROCESSING FUNCTIONAL APPLICATIONS, AND INTEGRATION	CH6	7TH WEEK		
ENTERPRISE SYSTEMS: FROM SUPPLY CHAIN TO ERP TO CRM	CH7	8TH WEEK	Case Study: Implementing Enterprise Resource Planning	THE END OF THE 9TH WEEK
EXAM 1		*9TH WEEK*		
INTER-ORGANIZATIONAL AND GLOBAL INFORMATION SYSTEMS	CH8	10TH WEEK	**PROJECT DISCUSSION**	
KNOWLEDGE MANAGEMENT	CH9	11TH WEEK		
DATA MANAGEMENT: WAREHOUSING, ANALYZING, MINING, AND VISUALIZATION	CH10	12TH WEEK		
MANAGEMENT DECISION SUPPORT AND INTELLIGENT SYSTEMS	CH11	13TH WEEK		
USING INFORMATION TECHNOLOGY FOR	CH12	14TH WEEK	City of Winston-Salem Information Technology	THE END OF THE 15TH

STRATEGIC ADVANTAGE			Strategic Plan	WEEK
INFORMATION TECHNOLOGY ECONOMICS	CH13	15TH WEEK		
ACQUIRING IT APPLICATIONS AND INFRASTRUCTURE	CH14	16TH WEEK	**PROJECT DUE DATE**	**PROJECT DUE**
MANAGING INFORMATION RESOURCES AND SECURITY	CH15	17TH WEEK		
THE IMPACT OF INFORMATION TECHNOLOGY ON ORGANIZATIONS, INDIVIDUALS AND SOCIETY	CH16	18TH WEEK		
EXAM2 (FINAL EXAM)				

Grading:

Element	Maximum Points
Exam 1 (individual)	**100**
Exam 2 (individual)	**100**
Project (team)	**300**
Research papers	**200**
Case Studies and Assignments	**300**
TOTAL	**1000**

Grading: (continued)

Based on 1000 points

Numerical Grade	Letter Grade
900 to 1000 points	A
800 to 899 points	B
700 to 799 points	C
600 to 699 points	D
Below 600 points	F

Title: OS and File System Forensics
        CET 6xxx

Course Description: In-depth coverage of computer forensics-related issues associated with multiple operating systems, multiple file systems, and applications.

Prerequisites: PR: CGS 5131 or CI.

Course Objectives:

By the end of the semester students should be able to :

  (i) Demonstrate an understanding of the following file systems including their structure and functioning:
    1. NTFS
    2. EXT2/3
    3. FAT
    4. HFS/HFS+
  (ii) Demonstrate an understanding of the following operating systems including their structure and functioning:
    1. Linux distributions
    2. Windows
      a. Non NT
      b. NT-based (2K, XP, 2003, Vista)
    3. Mac OS X
    4. UNIX (*BSD)
  (iii)Demonstrate an understanding of major applications under multiple operating systems, including the ability to identify sources of trace evidence.
  (iv)Demonstrate the ability to recover trace evidence from multiple file and operating systems.
  (v) Demonstrate an understanding and appreciation of sound forensic procedures.

Course Outline :

 1. Introduction
 2. Review of computer forensics procedures
 3. File Systems

        a. EXT2
        b. EXT3 (journalized EXT2)
        c. NTFS
        d. HFS/HFS+
        e. Others (UFS, FFS, HPFS)
4. Operating Systems & Applications
        a. Linux distributions
                i. Redhat-based
                ii. Debian-based
                iii. Trace evidence locations
                iv. Recovery methods
                v. Applications
                        1. Mail
                        2. Web
                        3. Documents
        b. Windows (non NT)
                i. 95
                ii. 98/ME
                iii. Trace evidence locations
                iv. Recovery methods
                v. Applications
                        1. Mail
                        2. Web
                        3. Documents
        c. Windows NT-based
                i. 2K, XP
                ii. 2003,Vista
                iii. Trace evidence locations
                iv. Recovery methods
                v. Applications
                        1. Mail
                        2. Web
                        3. Documents
        d. Mac OS X
                i. Pre OS X systems
                ii. Trace evidence locations
                iii. Recovery methods
                iv. Applications
                        1. Mail
                        2. Web
                        3. Documents

<u>Textbook:</u>
Required:

- Brian Carrier, File System Forensic Analysis, Addison-Wesley Professional, March 17, 2005, ISBN: 0321268172

Optional:

- Advances in Digital Forensics, Volume 1, International Federation of Information Processing, 2006.
- NOTE: There is NO perfect textbook for this course. Therefore, the majority of the readings will be derived from online readings and other sources. See below.

Required Readings:

1. Craiger, P. (2006) *Computer forensics methods and procedures* In H. Bigdoli, (Ed), *Handbook of Information Security* John Wiley & Sons.

2. Craiger, P., Pollitt, M & Swauger, J (2006) *Digital Evidence and law enforcement.* In H Bigdoli, (Ed), *Handbook of Information Security* John Wiley & Sons.

3. Craiger, P. (2006). Recovering digital evidence from Linux systems. In S. Shenoi & M Pollitt (Eds), *Advances in Digital Forensics* International Federation of Information Professing, pp. 233-234.

4. Craiger, P., Swauger, J, & Marberry, C. (2005). Digital evidence obfuscation: recovery techniques. T*he Proceedings of the International Society for Optical Engineering.*

5. Craiger, P, Swauger, J., Marberry, C., (in press). Digital forensic software tool validation In P. Kanellis (Ed) *Digital Crime and Forensic Science in Cyberspace.* Idea Group.

6. Craiger, P., & Burke, P. (in press). Mac Forensics: OS X and the HFS+ File System. To appear in M. Olivier and S. Shenoi (Eds.), Advances in Digital Forensics Volume 2. International Association of Information Processing.

7. Burke, P., & Craiger, J.P. (in press). Digital Trace Evidence from Secure Deletion Programs. To appear in M. Olivier and S. Shenoi (Eds.), Advances in Digital Forensics Volume 2. International Association of Information Processing.

8. NTFS. http://www.ntfs.com/

9. Apple Computer, Target Disk Mode. (http://developer.apple.com/documentation/Hardware/Developer_Notes/Macintosh _CPUs-G4/PowerMacG4_16Jan01/3Input-Output/Target_Disk_Mode_.html), 002.

10. Apple Computer, Technical Note TN1150: HFS Plus Volume Format. (http://developer.apple.com/technotes/tn/tn1150.html), 2004.

11. Microsoft Corporation, How the Recycle Bin Stores Files. (http://support.microsoft.com/default.aspx?scid=kb;en-us;13617&Product=w95), 2004.

12. Network Working Group, RFC 4155 - The application/mbox Media Type. (http://www.faqs.org/rfcs/rfc4155.html), 2005.

13. EXT2/3 File System. http://olstrans.sourceforge.net/release/OLS2000-ext3/OLS2000-ext3.html

14. Apple Computer, Working with Spotlight. (http://developer.apple.com/macosx/spotlight.html), 2005.

Student Products: Products include: written reports; assignments to include acceptable use and security policies; analyzing and correlating log files from multiple devices to determine incident source; demonstration of procedures to recover from various incidents on various operating systems and platforms. Students must be able to demonstrate effective communication skills in order to pass this course.

Course Policies:

- Unless explicitly stated by me, all assignments must be completed individually. Discussion of course topics is welcomed, but each student must complete his/her own assignments and exams. Each of you will sign an ethics statement on day one indicating your understanding of the consequences of cheating and/or plagiarism in this course.
- All assignments must be completed on time to receive credit.
- All assignments must be submitted via WebCT to receive credit.
- All course related communication with the instructor should be done through the WebCT email system.
- The only exceptions to the above rule will be in extreme circumstances and must be arranged with the instructor ***before*** the assignment due date.
- Assignments are graded on the following factors:
  - Technical accuracy
  - Completeness
  - Professionalism
    - The quality of communicating your ideas
      - THIS IS CRITICAL.
    - The overall appearance of your document

EVALUATION

Grades will be determined on the basis of the student's participation and performance on approximately seven hands-on assignments, including a report with an executive summary written for managers, and a technical summary written for technical peers.

Grading Scale

97 - 100 = A+	77 - 79 = C+
94 - 96 = A	74 - 76 = C
90 - 93 = A-	70 - 73 = C-
87 - 89 = B+	67 - 69 = D+

84 - 86 = B   64 - 66 = D
80 - 83 = B-   60 - 63 = D-
Below 60 is an F

<div align="center">

Enterprise Architecture
CET-6XXX
Prof. Mark Pollitt

</div>

DESCRIPTION

Technology has revolutionized business and government. And while these technologies have made possible many things and tremendously improved productivity, it remains difficult to integrate technology and the enterprise. During the last decade, a discipline known as enterprise architecture has developed to effectively and efficiently harmonize business processes and technology.

In this class, we will study the underlying principles of enterprise architecture (EA), look at how it has evolved and then apply these lessons to a case study.

PREREQUISITES

CET XXXX

COURSE OUTCOMES

Students completing this course will be able to:

1. Define enterprise architecture
2. Draw and describe at least three EA models
3. Explain, in detail the Zachman Framework
4. Define and explain what is an EA artifact
5. Describe at least three techniques to describe the business model
6. Describe the components of the EA^3 Framework
7. Explain the use of a EA Web Repository
8. Develop selected components of an EA
9. Understand the relationship between IT and the business process

TEXTBOOK

Required:

An Introduction to Enterprise Architecture (2nd Edition). Scott A. Bernard. Authorhouse Inc., Bloomington, IL. ISBN 1420880500. 2005.

READINGS

A Practical Guide to Implementing Federal Enterprise Architecture; CIO Council, 2001. (Download from: http://www.gao.gov/bestpractices/bpeaguide.pdf)

Federal EA Practice Guidance, Office of Management and Budget, 2006 (download from: http://www.whitehouse.gov/omb/egov/documents/FEA_Practice_Guidance.pdf)

STUDENT PROJECTS

Primary student outcomes will be assignments. All assignments will include written papers as well as some hands-on exercises. Students must be able to communicate well in order to pass this course.

Department of Engineering Technology
College of Engineering
University of Central Florida
Dr. Philip Craiger

Title: Incident Response Technologies
               CET 6xxx

Course Description: Covers security incidents and intrusions, including identifying and
               categorizing incidents; responding to incidents; log analysis; network
               traffic analysis; tools; and creating an incident response team.

Prerequisites: PR: CGS 5131 or CI.

Course Goals :

1.   Detect and characterize various incident types
2.   Demonstrate a practical understanding of the analysis of artifacts
      left on a compromised system
3.   Demonstrate an understanding of the complexity of and effectively
      respond to privileged and major event incidents.
4.   Obtain practical experience in the analysis of vulnerabilities and
      the coordination of vulnerability handling tasks
5.   Formulate effective advisories, alerts, and management briefings

Course Outline :

5. Introduction to incident and intrusion handling
    a. Definition of incident
    b. Criteria for incidents
    c. Categories of incidents
    d. Types of incidents
    e. Response level to incidents
6. Definition of incident handling
    a. Purpose of incident handling
    b. Steps in incident handling
        i. Preparation
        ii. Identification
        iii. Containment
        iv. Eradication
        v. Recovery
        vi. Follow up
7. Technical Analysis
    a. Log Analysis

            i.   utmp/wtmp
            ii. messages
            iii. dmesg
    b. Configuration files
            i.   /etc/<services>
            ii. passwd/shadow
            iii. access control
            iv. initab
            v.   fstab
    c. Network Traffic analysis
            i.   Protocol analyzers
            ii. Traffic signatures

8. System Devices
    a. Windows servers
    b. Mac OS X servers
    c. Unix servers
        i. Solaris
        ii. BSD
        iii. Linux
9. Creating a CIRT
    a. Motivation
    b. Benefits
    c. Task of CIRT
    d. Stage of CIRT development
    e. Information gathering
    f. Implementation
10. Common problems
    a. CIRT component & constituency
11. Policies & Procedure
    a. Standard Operating Procedure (SOP)
12. Case Studies

Textbook: Required:

Grance, T., Kent, K., & Kim, B. (2004). *Computer Security Incident Handling Guide: Recommendations of the National Institute of Standards and Technology*. National Institute of Standards and Technology.

West-Brown, M.J., Stikvoort, D., & Kossakowski, K. (2003). *Handbook for Computer Security Incident Response Teams (CSIRTs)*. Computer Emergency Response Team, Carnegie-Mellon University.

Student Products: Products include: written reports; assignments to include acceptable use

and security policies; analyzing and correlating log files from multiple devices to determine incident source; demonstration of procedures to recover from various incidents on various operating systems and platforms. Students must be able to demonstrate effective communication skills in order to pass this course.

Course Policies:

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- All assignments must be completed on time to receive credit.
- All assignments must be submitted via WebCT to receive credit.
- All course related communication with the instructor should be done through the WebCT email system.
- The only exceptions to the above rule will be in extreme circumstances and must be arranged with the instructor ***before*** the assignment due date.
- Assignments are graded on the following factors:
    - Technical accuracy
    - Completeness
    - Professionalism
        - The quality of communicating your ideas
            - THIS IS CRITICAL.
        - The overall appearance of your document

EVALUATION

Grades will be determined on the basis of the student's participation and performance on approximately seven hands-on assignments, including a report with an executive summary written for managers, and a technical summary written for technical peers.

<u>Grading Scale</u>

97 - 100 = A+   77 - 79 = C+
94 - 96   = A   74 - 76 = C
90 - 93   = A-   70 - 73 = C-
87 - 89   = B+   67 - 69 = D+
84 - 86   = B   64 - 66 = D
80 - 83   = B-   60 - 63 = D-
Below 60 is an F

CET 6xxx - The Practice of Digital Forensics
Standard Course Outline

Catalog Description:	**CET 6XXX (previously IDS 5790) The Practice of Digital Forensics** (3 credits) Application of digital scientific techniques to solve information assurance, forensic and legal problems. Course prerequisites: CGS 5131 or C.I.
Goals/Objectives of the course:	**The Practice of Digital Forensics:** This course will explore the application of digital scientific techniques to solve information assurance, forensic and legal problems. The course will focus on how practitioners can define customer needs, ensure technically and forensically sound evidence collection, plan an effective examination strategy, employ efficient tools and techniques, and be an effective advocate for the product and the process. Students will utilize case studies to test different scientific and investigative approaches. The Course will culminate with a Moot Court exercise based upon an examination conducted by the student.

Course Outcomes:	**CO-1 Setting the Stage of Digital Forensics**
	
	     At the conclusion of this section, the student will have a clear understanding of the origins, nature, process and terminology used in the practice of digital forensics. Students will be able to define: digital evidence, digital forensics, forensic acquisition, imaging, Standard Operating Procedures (SOP's), forensic examination and investigative analysis.
	
	CO-2 Customer Requirements
	
	     Before committing time, effort and money to a digital forensic matter, it is essential to define the customer requirements along with any limitations. The student will be able to effectively evaluate a forensic request, conduct a follow-up interview and document an examination goal, requirements statement, and proposed forensic product.
	
	CO-3 Process Limitations
	
	     There are many constraints placed on the examiner and the examination process. The students will be able to articulate a number of practical, legal and temporal limitations and how to design an examination process while

staying within these bounds. Students will be able to clearly state a cost-benefit proposition given a hypothetical examination request. Emphasis will be placed on protecting the examiner from liability in connection with the examination process.

CO-3 Developing an Examination Plan

The key to an efficient and effective forensic examination is to develop a plan which will seek to meet the customer's requirements, stay within the process constraints, and provide the best product for the investment. The students will be able to design and document an Examination Plan for a hypothetical case.

CO-4 Selecting Tools for Implementation

The tools available to conduct digital forensic examinations are rapidly evolving and students will be exposed to a number of tool types, including proprietary, commercial and open source. Specific tools will be reviewed for strengths and weaknesses. Students will be exposed to the tool validation including the Computer Forensic Tool Testing Program at the National Institute of Standards and Technology. Students will be able to suggest appropriate tools for specific hypothetical examinations.

CO-5 Analysis versus Examination

Forensic examination is only one phase of the information lifecycle. It is important for the student to understand the roles and responsibilities of each of investigators, examiners, analysts, and attorneys. By understanding the knowledge, skills and abilities of each of these roles, the examiner will be able to effectively perform his or her function and assist in developing a high performance team. Students will be asked to role play in connection with a hypothetical case.

CO-5 Effectively Presenting the Product

An examination is of little or no value if it is not communicated. Students will examine several methods of documenting and presenting the results of a digital forensic examination. Students will be required to perform a simulated

	examination, create several different reports and do a formal presentation, using exhibits, as an expert witness. •
Relationship to ET Program Outcomes:	CET 6XXX contributes the following to the ENT program outcomes: • ------------------------------(Outcome #) • ------------------------------(Outcome #) • ----------------------------- (Matrix showing relationship will be added here)
Textbook:	George Mohay, Alison Anderson, Byron Collie, Olivier de Vel and Rodney McKemmish, Computer and Intrusion Forensics (Norwood, MA: Artech House, 2003) ISBN 1-58053-369-8
References:	www.swgde.org
Topics Covered:	1. Introduction to Forensics 2. Legal Issues – Constitutional, Criminal and Civil Law 3. The Digital Forensic Process 4. Quality Assurance 5. Examination Planning and Design 6. Forensic Tool Selection and Application 7. Forensic and Investigative Roles and Responsibilities 8. Legal Issues – the Law of Evidence and Testimony 9. Forensic Examination Competency and Proficiency 10. Expert Testimony, Trial Exhibits 11. Moot Court
Computer Usage:	Students are required to use word processing, spreadsheets, PowerPoint's and conduct research on forensic software, tools, techniques and programs. Students must perform forensic examinations using both Window XP and Linux operating systems and tools.
Laboratory Exercises:	1. Imaging tools 2. Command line DOS forensic Examination 3. Windows GUI tool forensic examination 4. Linux GUI tool forensic examination 5. Examination of log files 6. Examination of Windows Registry 7. Examination of email
Required Equipment:	N/A
Course Grading:	Course Grading Policies are left to the discretion of the individual instructor
Library Usage:	Students are encouraged to consult library and Internet references to aid in researching course material, complete written projects, and prepare oral presentations.
Course Assessment:	Useful methods for assessing the success of this course in achieving

	the intended outcomes listed above:
	- CO1: Forensic examination & discussion - CO2: Forensic examination & discussion - CO3: Forensic examination & discussion - CO4: Forensic examination & discussion - CO5: Forensic examination & discussion
Course Policies:	**GRADING OBJECTIONS:** All objections to grades should be made IN WRITING WITHIN ONE WEEK of the work in question. Objections made after this period has elapsed will NOT be considered, no exceptions.
	PROFESSIONALISM AND ETHICS: Academic dishonesty in any form will not be tolerated!!! Violations of student academic behavior standards are outlined in The Golden Rule, the University of Central Florida's Student Handbook. See ttp://www.goldenrule.sdes.ucf.edu/ for further details. Any plagiarism, cheating or unauthorized collaboration is strictly prohibited. Students, who in the opinion of the instructor, are found guilty will have a grade of zero entered for that assignment and, at the sole discretion of the instructor, may receive a grade of "F" for the course overall.
Additional Course Information, Policies and Expectations:	**COMPUTER SKILLS/USAGE** • WebCT and its embedded e-mail will be used to communicate with students and disseminate materials and assignments throughout the course. WebCT and their e-mail at least once per day. **• Students are expected to have access to and be familiar with a word processing application (*e.g.*, Microsoft Word) as all assignments will require its use.** • Students are expected to have access to and be familiar with a spreadsheet application (*e.g.*, Microsoft Excel) and a presentation application (e.g. Microsoft PowerPoint) as some assignments will require their use. **Writing Assignments** All assignments will be submitted, in electronic form, in a format prescribed by the instructor. Text documents must be in Microsoft Word, presentations shall be in PowerPoint and spreadsheets in Excel (all versions 2003 or earlier). Deviations from this policy must have prior approval of the instructor. The instructor will grade submissions using the mark-up and comments features of Word. Students should therefore become familiar with these features and ensure that their papers are saved in an appropriate format.
	COURSE ASSIGNMENTS This course is conducted as a hybrid course. In addition to online education using webCT, there will be two Saturday classes. In order to ensure an effective and efficient delivery of the course, the course is organized into "weeks". Each week has course

material such as readings, lectures, and discussion questions.

- The required readings will be posted as part of the weekly posting by the instructor. Generally, they will mirror those in the syllabus, but may have changes, additions or deletions as determined by the instructor. When in doubt, please post a question to the course feedback section of the WebCT discussion area.
- The lectures will consist of PowerPoint slides with audio and/or video tracks. These may be viewed through WEB CT or downloaded for later viewing. They will usually be in Flash format. Time and resources permitting, the audio portions of the lecture will be available in .mp3 format for use as podcasts. As a result, students lacking high speed/bandwidth internet connections should expect extremely poor performance of WebCT and excessive download times.
- Most weeks will require one or more student postings to the discussion area designated in the week's assignment. Students are expected to frame an articulate, thoughtful and pertinent answer to the question posed. Answers must be in grammatically correct English with appropriate spelling, punctuation and structure. Postings which do not meet these tests will not receive credit. In order to receive full credit for the week's discussion, students must make one or more thoughtful response to other students postings. These follow-up postings must add value to the discussion. Postings that are "me too", "good point", or "I agree" will not receive credit.
- Approximately seven forensic examinations will be conducted during this course. Each will require a Forensic Examination Report in the prescribed format. An Examination Plan may be required for any/all of the forensic examinations.
- The class will culminate in a moot court exercise wherein students will require testifying about their examinations. Any and all of the examinations conducted for this course may be examined.

EXAMS

This course will not use examinations for grading purposes. At the discretion of the instructor, quizzes may be used to evaluate student comprehension.

EXCUSAL FROM COURSE ASSIGNMENTS AND EXAMS

- While this class is conducted largely online, the student's active participation on a weekly basis is required. The course is not an independent series of modules, but rather a journey to be enjoyed as a group. Therefore, students are required to conduct the assigned work during the weeks designated, except when approved in advance by the instructor. Students need to visit the WebCT site daily during the course in order to keep abreast of any changing requirements. It is the student's obligation to read all postings from the

	instructor in a timely fashion.
	• *Late Work* - work turned in late will be accepted at the discretion of the instructor, but will be reduced ½ grade for lateness (even with approval to turn it in late).
	MAKEUP ASSIGNMENTS AND EXAMINATIONS • There will be no makeup assignments given.
Course Coordinator:	Mark Pollitt, Visiting Instructor , mpollitt@mail.ucf.edu

**UNIVERSITY OF CENTRAL FLORIDA
COLLEGE OF ENGINEERING AND COMPUTER SCIENCE
DEPARTMENT OF ENGINEERING TECHNOLOGY**

**ETM 5xxxC: APPLIED COMPUTATIONAL FLUID DYNAMICS
AND HEAT TRANSFER**

COURSE OUTLINE

**Catalogue Title
and Description:**   **ETM5xxxC 3(2,2). APPLIED CFD**. Introduction to CFD analysis with hands-on applications using commercial packages. Grid generation, property selection, boundary conditions, turbulence models, and post-processing are topics to be covered.

**Prerequisites and
Co-Requisites:**   ETM 4331C: Applied Fluid Mechanics or equivalent.

Textbook and References:
H. Versteeg and W. Malalasekera, *An Introduction to Computational Fluid Dynamics: The Finite Volume Method*, Longman Scientific and Technical, 1995.

D. Anderson, J. Tannehill, and R. Pletcher, *Computational Fluid Mechanics and Heat Transfer*, Hemisphere Publishing Corporation, 1984.

C. Fletcher, *Computational Techniques for Fluid Dynamics: Volume I and Volume II*, Second Edition, Springer-Verlag, 1991.

Goals/Objectives:

- To be able to define a fluid dynamics and heat transfer problem from a numerical point of view and establish the proper frame of reference.
- To be able to import CAD models into CFD pre-processor packages.
- To understand the grid generation process and implement it according to the model specifications.
- To be able to specify thermo-physical parameters and select proper material characteristics.
- To be able to impose complete sets of boundary conditions and loads.
- To select the proper iteration and solver parameters for an effective and efficient solution process.
- To identify and select the different turbulence models.

- To interpret and analyze the CFD results.
- To post-process, plot, and report CFD solutions.

Instructor: **Dr. Eduardo Divo**
Phone: (407) 823-4753
Email: edivo@mail.ucf.edu
Website: http://pegasus.cc.ucf.edu/~edivo

Class Meetings:
    Lecture: iCLS
    Lab: ENG2-182:   ?

Office Hours: ENG1-247
    M-R: ?
    No appointment necessary

Computer Usage: Use of internet to perform inquiries for added information. Use of grid generation, CFD analysis, and post-processing software packages to conduct case studies.

Library Usage: Students are encouraged to consult library and internet references to aid in researching course material.

Laboratory Projects: Lab assignments are scheduled on a weekly basis in the form of real-life Computational Fluid Dynamics and Heat Transfer Applications.

Course Topics:
- What is CFD? Motivations.
- Governing equations.
- Basic introductory concepts: the finite difference method and the finite volume method.
- Model definition and frames of reference.
- Transient and steady-state modeling.
- Geometry and importing CAD models.
- Grid generation.
- Properties and constraints.
- Boundary conditions.
- Turbulence models.
- Effective solution process: solver parameters.
- Interpretation of CFD results.

- Post-processing: plotting and reporting.
- Special topics: conjugate heat transfer, moving walls, deformable grids, and multi-phase flows.

Guidelines: Reading assignments are to be completed prior to class discussion. The example problems and study questions in the text should be studied and understood as part of the reading assignment.

Any change to the schedule will be notified at least two weeks in advance. Make-up assignments will be given only under justifiable circumstances.

Attendance is mandatory not only by university regulations but also by new immigration policies.

Course Grading: The final grade will be based upon the following proportions:

Laboratory Assignments #1-#10	100% (equally weithed)

Grade Distribution:

88.00 – 89.99 = A–	≥ 90.00 = A	
78.00 – 79.99 = B–	80.00 – 85.99 = B	86.00 – 87.99 = B+
68.00 – 69.99 = C–	70.00 – 75.99 = C	76.00 – 77.99 = C+
58.00 – 59.99 = D–	60.00 – 65.99 = D	66.00 – 67.99 = D+
≤ 57.99 = F		

UNIVERSITY OF CENTRAL FLORIDA
COLLEGE OF ENGINEERING AND COMPUTER SCIENCE
DEPARTMENT OF ENGINEERING TECHNOLOGY

ETM 5xxxC: APPLIED FINITE ELEMENT ANALYSIS

COURSE OUTLINE

Catalogue Title
and Description: **ETM 5xxxC 3(2,2). APPLIED FEA.** Introduction to Finite Element analysis with hands-on applications using commercial packages. Meshing, property selection, load, boundary conditions, post-processing, and reporting are topics to be covered.

Prerequisites and
Co-Requisites: ETG3533C: Applied Engineering Strength of Materials or Equivalent.

Textbook and References:
L. Segerlind, *Applied Finite Element Analysis*, John Wiley and Sons, 1984.

J. N. Reddy, *An Introduction to the Finite Element Method*, second edition, McGraw Hill, 1993.

K. Huebner, D. Dewhirst, D. Smith, and T. Byron, *The Finite Element Method for Engineers*, 4th edition, Wiley Inter-Science, 2001.

T. Chandrupatla and A. Belegundu, *Introduction to Finite Elements in Engineering,* second edition, Prentice Hall, 1997.

D. Hutton, *Fundamentals of Finite Element Analysis,* McGraw Hill, 2004.

Goals/Objectives:

- To be able to define a solid mechanics problem from a numerical point of view and establish the proper frame of reference.
- To be able to import CAD models into FEA pre-processor packages.
- To understand the meshing process and implement it according to the model specifications.
- To be able to specify material properties.
- To be able to impose complete sets of boundary conditions and loads.

- To select the proper solver parameters for an effective and efficient solution process.
- To interpret and analyze the FEA results.
- To post-process, plot, and report FEA solutions.

Instructor: **Dr. Eduardo Divo**
Phone: (407) 823-4753
Email: edivo@mail.ucf.edu
Website: http://pegasus.cc.ucf.edu/~edivo

Class Meetings:
Lecture: iCLS
Lab: ENG2-182:   ?

Office Hours: ENG1-247
M-R: ?
No appointment necessary

Computer Usage: Use of internet to perform inquiries for added information. Use of meshing tools, FEA packages, and post-processing software packages to conduct case studies.

Library Usage: Students are encouraged to consult library and internet references to aid in researching course material.

Laboratory
Projects: Lab assignments are scheduled on a weekly basis in the form of real-life Solid Mechanics problems for Finite Element Applications.

Course Topics:

- What is FEM? Motivations.
- Field problems and boundary value problems.
- Global and local coordinate systems.
- Element types.
- A simple finite element example.
- Solid Mechanics and governing equations.
- Model definition and frames of reference.
- Transient and steady-state modeling.
- Geometry and importing CAD models.
- Meshing.
- Properties and constraints.

- Boundary conditions and loads.
- Effective solution process: solver parameters.
- Interpretation of FEA results.
- Post-processing: plotting and reporting.

Guidelines: Reading assignments are to be completed prior to class discussion. The example problems and study questions in the text should be studied and understood as part of the reading assignment.

Any change to the schedule will be notified at least two weeks in advance. Make-up assignments will be given only under justifiable circumstances.

Attendance is mandatory not only by university regulations but also by new immigration policies.

Course Grading: The final grade will be based upon the following proportions:

Laboratory Assignments #1-#10	100% (equally weithed)

Grade Distribution:

88.00 – 89.99 = A–	≥ 90.00 = A	
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68.00 – 69.99 = C–	70.00 – 75.99 = C	76.00 – 77.99 = C+
58.00 – 59.99 = D–	60.00 – 65.99 = D	66.00 – 67.99 = D+
≤ 57.99 = F		

Vitas

Curriculum Vitae: Eduardo Divo

P.O. Box 162450. Orlando, Florida 32816-2450.
Tel: 407-823-4753. Email: edivo@mail.ucf.edu

Personal Information

- *Eduardo Alejandro Divo*
- Born in Valencia, Venezuela, April 19, 1971.

Area of Expertise

- Meshless Methods, Boundary Element Methods, Computational Fluid Dynamics, Applied Mathematics, Numerical Heat Transfer, Inverse Problems, Optimization, Genetic Algorithms, High-Performance Parallel Computing, and Virtual Reality.

Educational Background

- Ph.D. Mechanical Engineering, University of Central Florida (UCF), 1998. Dissertation Title: A New Boundary Integral Method for Anisotropic Heat Conduction in Heterogeneous Media. Advisor: Dr. A. Kassab.

- M.S. Mechanical Engineering, University of Central Florida (UCF), 1996.

- Statistical Control Analyst, Monterrey Institute of Technology (ITESM), Mexico-Venezuela 1993.

- Mechanical Engineering Degree, Central Technological University (UNITEC), Venezuela 1992.

- Technical Degree in Informatics, Central Technological University (UNITEC), Venezuela 1990.

- Technical Degree in Mechanics, Central Technological University (UNITEC), Venezuela 1990.

Publication Record

- 3 Books Authored/Edited.
- 3 Book Chapters Authored.
- 30 Refereed Journal Papers.
- 72 Refereed Conference Papers.
- 13 Refereed Conference Abstracts/Oral Presentations.

Employment History

2003-today: Assistant Professor
University of Central Florida (UCF), Orlando, Florida, USA.
Engineering Technology Department (ENT) and Joint Appointment with
Mechanical, Materials, and Aerospace Engineering Department (MMAE)

2002-today: Visiting Assistant Professor
University of Central Florida (UCF), MMAE, Orlando, Florida, USA.

1998-2002: Research Scientist and Adjunct Professor
University of Central Florida (UCF), MMAE, Orlando, Florida, USA.
Research and development of numerical solution methods for inverse and conjugate heat transfer under NASA NRA, NSF, and DoE research grants. Teaching in the areas of Mathematics and Thermal-Fluid Sciences in both the graduate and undergraduate levels.

1999-2000: Research Engineer and Software Developer
Dual Incorporated, Lake Mary, Florida, USA.
Development of a Virtual Reality Visualization (VRV) system of dynamic weapon effects over ground and air vehicles for a NAVY Small Business Innovative Research (SBIR) project.

1997-today: Vice-President for Research
Computational Engineering Technologies, Inc., Oviedo, FL, USA.
Conduct research projects and private industry consulting in the areas of numerical heat transfer, CFD, and inverse thermal problems.

1997-1998: Research Associate
University of Central Florida (UCF), MMAE, Orlando, Florida, USA.
Developed a Genetic Algorithm-based parameter estimation code for non-homogeneous materials under a NASA Florida Space Grant Consortium.

1996-1997: Teaching Assistant
University of Central Florida (UCF), MMAE, Orlando, Florida, USA.
Instructor of Engineering Graphics for the SPACE/NASA program.

1996-1998: Research and Programming Engineer
Applied Technology Associates (ATA), Orlando, Florida, USA.
Numerical analysis of thermal ablation of rocket motor vanes under a NAVY SBIR grant. Participated in the development of the heat conduction computer codes Beta2 and Beta3.

1996-1996: Design Engineer
Teslatronics, Orlando, Florida, USA.

Testing and control of magnetic field measurement instruments.

1992-1994: Assistant Professor
Central Technological University (UNITEC), Valencia, Venezuela.
Teaching in the areas of Calculus, Differential Equations, Advanced Engineering Mathematics, Thermodynamics, and Fluid Mechanics.

1992-1994: Special Project Coordinator
Central Technological University (UNITEC), Valencia, Venezuela.
Coordinated several educational projects for government programs.

1990-1992: Teaching Assistant
Central Technological University (UNITEC), Valencia, Venezuela.
Instructor in the area of Calculus I, II, and III and Thermodynamics I.

Consulting Experience

- General Dynamics, Orlando, FL.
- Engineering Technology Incorporated, Orlando, FL.
- Lockheed Martin Missiles and Fire Control, Orlando, FL.
- ZONA Technology, Scottsdale, AZ.
- RINITech, Orlando, FL.
- Dual Incorporated, Lake Mary, FL.
- Applied Technology Associates, Orlando, FL.
- NASA Glenn Research Center, Turbomachinery Division, Cleveland, OH.
- Supervision International Inc., Orlando, FL.

Research Proposals Writing Activity

PI/Co-PI:

_____ 2007 Fiscal year

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2007: $2,000. Project title: RTA #2741, FEM Analysis of Impact and Load Resistance of Custom-made Ambulance. PI's: Eduardo Divo and Alain Kassab, (funded. UCF Continuing Education Acct. #3514373).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2007: $2,000. Project title: RTA #2896, Wind Resistance Prediction of NET Restraint Design. PI's: Eduardo Divo and Alain Kassab, (funded. UCF Continuing Education Acct. #3514373).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2007: $2,000. Project title: RTA #2923, CFD Analysis of Morphing Crafts. PI's: Eduardo Divo and Alain Kassab, (funded. UCF Continuing Education Acct. #3514373).

- DotDecimal 2007, $43,566. Project title: Development of Customized Application for Automatic CAM Format Translation and Tool-path Generation, PI's: Eduardo Divo and Alain Kassab, (Funded, Acct. #1627-8013).

- UCF Undergraduate Teaching Equipment Grant, 2007: $19,950. Project title: Computer Numerical Controls and Computer Integrated Manufacturing 5500 CNC Lathe. PI: Eduardo Divo, (pending).

- UCF Presidential Equipment Grant, 2006-2007, $44,871. Project title: Computational Mechanics Laboratory High-Performance Computing Infrastructure Expansion. PI's: Eduardo Divo and Alain Kassab, (declined).

- SUS of Florida Turbine Initiative, 2007, $178,403. Project title: A Novel Enhanced Heat Transfer Device for NASA's technology, enabling long space flight. PI's: R. Narayanan, A. Kassab, E. Divo, (pending).

_____ 2006 Fiscal year

- National Science Foundation, 2006, $318,336. Project Title: Shape Optimization of Femoral Bypass Grafts using an Evolutionary Meshless Approach, PI's: Eduardo Divo, Alain Kassab, and Gerald Smith, (pending).

- SUS of Florida Turbine Initiative: Advanced Turbines, Energy and Environment, 2006, $247,515. Project Title: Coupled FVM/BEM Conjugate Thermo-Elastic Analysis and Automated Design of Cooling Channel Configurations, PI's: Alain Kassab and Eduardo Divo, (Funded at $50,000, Acct. #1626-9036).

- Florida High Tech I-4 Council, 2006, $15,000. Project Title: Optimization and Thermal Modeling for RF Antennae, PI's: Eduardo Divo and Alain Kassab, (Funded, Acct. #2019-0053).

- Sciperio, Inc., 2006, $30,000. Project Title: Optimization and Thermal Modeling for RF Antennae, PI's: Eduardo Divo and Alain Kassab, (Funded, Acct. #1627-8009).

- National Science Foundation, 2006, $575,941. Project Title: iCLS: An Integrated High-Quality Engineering Content Delivery System, PI's: Eduardo Divo and Alfred Ducharme, (declined).

- American Chemical Society, Petroleum Research Fund, 2006, $134,580. Project Title: Numerical Analysis and Prediction of Streamline Propagation from Wells in Anisotropic and Heterogeneous Oil Reservoirs using a Generalized BEM/Evolutionary Algorithm, PI's: Eduardo Divo and Alain Kassab, (declined).

- Space Research Initiative, 2006, $155,000. Project Title: Miniaturization of a Novel Enhanced Heat Transfer Device for NASA's technology enabling long space flight, PI's: Alain Kassab, Eduardo Divo, and R. Narayanan, (declined).

- Space Research Initiative, 2006, $155,000. Project Title: Space-Related Education in the Physical Sciences for K-12, PI's: R. Narayanan, Alain Kassab, and Eduardo Divo, (declined).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2006: $2,000. Project title: RTA #2456, Lubricant Contact Model of a Synkinetics Device. PI: Alain Kassab and Eduardo Divo, (funded. UCF Continuing Education Acct. #3514373).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2006: $2,000. Project title: RTA #2325, Pressure Drop Analysis of a new Hydro-Turbine Design. PI: Alain Kassab and Eduardo Divo, (funded. UCF Continuing Education Acct. #3514373).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2006: $2,000. Project title: RTA #2247, Heat Transfer Study of Aluminum Extrusion Process. PI: Eduardo Divo and Alain Kassab, (funded. UCF Continuing Education Acct. #3514373).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2006: $2,000. Project title: RTA #1978, CFD Analysis of Anchor Sail. PI: Alain Kassab and Eduardo Divo, (funded. UCF Continuing Education Acct. #3514373).

- Dell Higher Education, 2006: $10,582.25. Project title: Matching Funds to Support HPCC Infrastructure Expansion. PI's: Eduardo Divo and Alain Kassab, (funded. Equipment, no acct.).

- UCF Undergraduate Teaching Equipment Grant, 2006: $18,911.00. Project title: Computer Numerical Controls and Computer Integrated Manufacturing 5500CNC Lathe. PI: Eduardo Divo, (declined).

- American Heart Association, 2006: $43,540. Project title: Hemodynamics Meshless Modeling and Evolutionary Shape Optimization of a Bypass Graft End-to-Side Distal Anastomosis. PI's: Alain Kassab and Eduardo Divo, (declined).

- UCF Presidential Equipment Grant, 2005-2006, $39,327. Project title: Expansion of the High Performance Computing Infrastructure of the Computational Mechanics Laboratory. PI's: Alain Kassab and Eduardo Divo, (funded. Acct. #20020004).

_____ 2005 Fiscal year

- US Marine Corps, 2005, $276,379. Project title: HEAD AND NECK BLUNT TRAUMA MODEL FOR THE ATBM. PI's: David Nicholson, Eduardo Divo, and Alain Kassab, (declined).

- Siemens AG Power Generation, 2005, $48,224. Project title: CFD Modeling and Analysis of Gas Turbines. PI's: Alain Kassab and Eduardo Divo, (declined).

- Florida High Tech I-4 Council, 2005, $38,226. Project title: CFD Modeling and Analysis of Nozzle Design and Parallel Genetic Algorithm Optimization of Antennae Arrays. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #20190012).

- ZONA Technology, Inc., 2005, $56,500. Project title: MDA STTR Phase I: Effective GPU acceleration of Meshless Navier-Stokes Solver. PI's: Sumanta Pattanaik, Charles Hughes, Eduardo Divo, and Alain Kassab, (declined).

- Space Research Initiative, 2005, $248,776. Project Title: Miniaturization of a Novel Enhanced Heat Transfer Device for NASA's technology enabling long space flight, PI's: R. Narayanan, Eduardo Divo, and Alain Kassab, (declined).

- Space Research Initiative, 2005, $249,744. Project Title: Air quality and ventilation in space vehicles and space environments - meshless simulation and experimental verification, PI's: Eduardo Divo, Alain Kassab, and R. Narayanan, (declined).

- National Institute of Health (NIH), 2005: $1,382,980.00. Project title: Automated Segmentation and Flow Analysis of Carotid MRA Images. PI's: Olusegun Ilegbusi, Eduardo Divo, Alain Kassab, (declined).

- Dell Higher Education, 2005: $20,216.00. Project title: Supporting Equipment Grant for High-Performance PowerEdge Cluster. PI's: Eduardo Divo and Alain Kassab, (funded. Equipment, no acct.).

- Florida Space Grant Consortium (FSGC), 2005: $38,369. Project title: Air Quality and Ventilation in Space Vehicles and Space Stations. PI's: Eduardo Divo and Alain Kassab, (declined).

- UCF Undergraduate Teaching Equipment Grant, 2005: $19,977.00. Project title: Computer Numerical Controls and Computer Integrated Manufacturing 5600CNC Mill and Conveyor System. PI's: Eduardo Divo and Rosida Coowar, (funded. ENT Department acct.).

- UCF Undergraduate Teaching Equipment Grant, 2005: $19,050.75. Project title: Computer Organization and Design External Parallel Cluster. PI's: Eduardo Divo and Alain Kassab, (declined).

- Sciperio, 2005, $38,226. Project Title: Parallel Genetic Algorithm Optimization of Antennae Arrays, PI's: Eduardo Divo and Alain Kassab, (funded. Acct #16268057).

- nScrypt, 2005, $38,226. Project Title: CFD Modeling and Analysis of Nozzle Design, PI's: Eduardo Divo and Alain Kassab, (funded. Acct #16268057).

- UCF/Office of Research, 2005, $7,484. Project Title: Meshless Simulation of Air Quality and Contaminant Transport. PI: Eduardo Divo, (funded. Acct #16279004).

- General Dynamics, 2005, $19,621. Project Title: Monte Carlo Simulation of Smoke Patterns. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #16268057).

- General Dynamics, 2005, $4,533. Project Title: Monte Carlo Simulation of Smoke Screens. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #16268057).

- Florida High Tech I-4 Council, 2005, $12,041. Project Title: Monte Carlo Simulation of Smoke Screens, part II. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #20170010).

- Florida High Tech I-4 Council, 2005, $13,281. Project Title: Monte Carlo Simulation of Smoke Screens. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #20170010).

- Florida High Tech I-4 Council, 2005, $5,720. Project Title: Monte Carlo Simulation of Smoke Disribution. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #20170010).

- Florida High Tech I-4 Council, 2005, $19,230. Project Title: Evaluation Study of Heat Transfer CFD Grid Generation Tools. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #20170011).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2005: $3,000. Project title: RTA #1794, CAD Design and CFD Analysis of a Dual Blower. PI: Eduardo Divo, (funded. UCF Continuing Education Acct. #3514373).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2005: $2,000. Project title: RTA #1938, CAD Design of a Luggage Unit. PI: Eduardo Divo, (funded. UCF Continuing Education Acct. #3514373).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2005: $2,000. Project title: RTA #1601, CAD Design for Spring Clip. PI's: Eduardo Divo and Alain Kassab, (funded. UCF Continuing Education Acct. #3514373).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2005: $2,000. Project title: RTA #1577, Optimization of Cyclone Separators. PI's: Alain Kassab and Eduardo Divo, (funded. UCF Continuing Education Acct. #3514373).

_____ 2004 Fiscal year

- Space Research Initiative, 2004, $248,776. Project Title: Oscillatory Flow as a Means of Enhanced Species Separation: application to life support for NASA`s long-term space-based missions, PI's: R. Narayanan, Eduardo Divo, and Alain Kassab, (funded at $200,000.00. Acct #20040002).

- Space Research Initiative, 2004, $248,776. Project Title: Air quality and ventilation in space vehicles and space environments - meshless simulation and experimental verification, PI's: Eduardo Divo, Alain Kassab, and R. Narayanan, (declined).

- Engineering Technology Incorporated, 2004: $11,439.00. Project title: Montecarlo Simulation of Smoke Distribution. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #16268049)

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2004: $2,000. Project title: RTA #1231, CFD Analysis to Determine Optimum Design Configuration to Maximize Fuel Performance at Air Intake. PI's: Eduardo Divo and Alain Kassab, (funded. UCF Continuing Education Acct. #3514373).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2004: $2,000. Project title: RTA #1130, Reduce Airflow through Fume Hoods. PI's: Alain Kassab and Eduardo Divo, (funded. UCF Continuing Education Acct. #3514373).

- NASA, Glenn Research Center, 2004: $529,076.00. Project title: Glenn-HT/BEM: conjugate thermo-elastic analysis for active control of turbomachinery tip gaps. PI's: Alain Kassab and Eduardo Divo, (declined).

- Siemens-Westinghouse Power Corporation, 2004: $3,150.00. Project title: CFD Modeling of Transition Section. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #16268057).

- Siemens-Westinghouse Power Corporation, 2004: $38,459.00. Project title: Evaluation Study of Heat Transfer CFD Grid Generation Tools. PI's: Alain Kassab and Eduardo Divo, (funded. Acct #16268047).

- Florida Space Grant Consortium (FSGC), 2004: $57,325. Project title: Meshless Modeling of Air Quality and Ventilation in Space Vehicles and Space Stations. PI's: Alain Kassab and Eduardo Divo, (declined).

- Space Alliance Technology Outreach Program (SATOP), Titusville, Florida, 2004: $2,000. Project title: Aerodynamic drag reduction on open wheel road racing car. PI's: Alain Kassab and Eduardo Divo, (funded. UCF Continuing Education Acct. #3514373).

- Lockheed Martin Corporation, Missiles and Fire Control, 2004: $10,799. Project title: DRBEM -Based Inverse Algorithm to Determine an Unknown Multi-dimensional Transient Temperature Boundary Condition. PI's: Alain Kassab and Eduardo Divo, (funded. UCF OOR Acct. #16-26-8042).

- UCF Presidential Equipment Grant, 2004, $59,992. Project Title: Computing Cluster for Computational Fluid Dynamics and Computational Mechanics. PI's: Alain Kassab and Eduardo Divo, (funded. UCF OOR Acct. # 2003009).

- UCF Office of Research, 2004: $7,474.00. Project title: Efficient Modeling of Large-Scale Fluid Flow-Heat Transfer Problems with a Parallel Domain Decomposition Meshless RBF Collocation Approach. PI: Eduardo Divo, (declined).

_____ 2003 Fiscal Year

- Florida High Tech I-4 Council, 2003, $10,000. Project title: Beowulf Cluster for Computational Fluid Dynamics. PI's: Alain Kassab and Eduardo Divo, (funded. UCF OOR Acct. #20030007).

- Siemens-Westinghouse Power Corporation, 2003: $20,004.40. Project title: Beowulf Cluster for Computational Fluid Dynamics. PI's: Alain Kassab and Eduardo Divo, (funded. UCF OOR Acct. #16268034).

- UCF/UF Space Research Initiative, 2003: $124,388.00. Project title: Oscillatory Flow as a Means of Enhanced Species Separation – application to life support and to detection. PI's: Alain Kassab and Eduardo Divo, (declined).

- UCF Undergraduate Teaching Equipment Grant, 2003: $19,853.00. Project title: Computer Numerical Controls and Computer Integrated Manufacturing 5600CNC Mill and Conveyor System. PI's: Eduardo Divo and Rosida Coowar, (declined).

- UCF Undergraduate Teaching Equipment Grant, 2003: $19,931.00. Project title: Programmable Logic Applications and Device Integration 5250 Servo Robot and Training Software. PI's: Rosida Coowar and Eduardo Divo, (funded. UCF/ENT Acct. #16270001).

- UCF Undergraduate Teaching Equipment Grant, 2003: $20,004.15. Project title: Computer Organization and Design External Parallel Cluster. PI's: Eduardo Divo and Alain Kassab, (declined).

_____ Prior to 2003

- Florida Space Grant Consortium Undergraduate Summer Research Experience, 2002: $3,000. Project title: investigative study for a cryo-surgery kit for long-term space-based missions, PI's: Kassab, A.J. and Divo, E., undergraduate student: Ms. Kristel Gonsette (funded. UCF-OOR Acct #16-26-991).

- Florida Space Grant Consortium and Technological Research Development Authority, 2001-2002: $30,000. Project title: Cryosurgery Kit for Long-term Space Based Missions, PI's: Divo, E. and Kassab, A.J., (declined).

- Florida Space Grant Consortium and Technological Research Development Authority, 1999-2000: $35,192. Project title: Inverse BEM Algorithm for Identification of Multi-Dimensional Time-Dependent Convective Heat Transfer Coefficients in Aerospace Components, PI's: Kassab, A.J. and Divo, E., NASA Contract number: NGTS- 40025, (funded. UCF DSR Acct. #16-26-774).

Principal Researcher/Associate Scientist:

- NASA, National Research Announcement NRA-01-GRC-2, NASA Glenn Research Center, 2001-2004: $300,000. Project Title: Glenn-HT/BEM Conjugate Heat Transfer Solver for Large-Scale Turbomachinery Models. PI's: Kassab, A.J. and Kapat, J. NASA Grant Number NAG3-2691 (funded. UCF-OOR Acct. #16-26-232).

- NASA, National Research Announcement NRA-99-GRC-2, NASA Glenn Research Center, 1999-2001: $103,740. Project Title: Investigation of Conjugate Heat Transfer in Turbine Blades and Vanes. PI's: Kapat, J. and Kassab, A.J., NASA Grant Number NAG3-2311 (funded. UCF OOR Acct. #16-26-228).

- United States National Science Foundation, 1999-2001: $110,584. Project Title: Reconstruction of Multidimensional Convective Heat Transfer Coefficient Distributions Using an Inverse BEM-Based Problem Approach. PI's: Kassab, A.J. and Kapat, J.S. NSF grant no. CTS-9978558 (funded. UCF OOR Acct. #16-26-412).

- Florida Space Grant Consortium and Technological Research Development Authority, 1998-1999: $43,791.Project title: Development of a 3-D Boundary Element Method Model to Predict Recession Rates of Thermal Protection Systems of Re-Entry Vehicles, PI's: Kassab, A.J. and Cavalleri, R., NASA Contract number: NGTS- 40025, (funded. UCF DSR Acct. #16-26-762).

- Florida Space Grant Consortium and Technological Research Development Authority, 1997-1998: $33,277. Project title: Thermal Conductivity Characterization of Non-homogeneous Aerospace Materials. PI's: Kassab, A.J. and Cavalleri, R., NASA, Contract number: NGTS- 40025, (funded. UCF DSR Acct. #16-26-745).

Teaching Experience

Graduate Level (UCF):
- EML5060: Mathematical Methods in Mechanical and Aerospace Engineering.
- EML6062: Boundary Element Methods.
- EML6154: Conduction Heat Transfer.

Undergraduate Level (UNITEC):
- Superior Engineering Mathematics I.
- Superior Engineering Mathematics II.
- Differential Equations.
- College Algebra.
- Calculus I.
- Calculus II.
- Calculus III.
- Fluid Mechanics.
- Thermodynamics I.
- Thermodynamics II.
- Applied Thermodynamics for Electrical Engineering.

Undergraduate Level (UCF):
- CET2364: System Applications in C
- EGN1006: Introduction to the Engineering Profession
- EGN1007: Engineering Concepts and Methods
- EGN1111: Engineering Graphics
- EGN3343: Engineering Thermodynamics
- EML3034: Modeling Methods in Mechanical and Aerospace Engineering
- EML3701: Fluid Mechanics I
- EML4142: Heat Transfer

- EML4703: Fluid Mechanics II
- EST3543C: Programmable Logic Applications and Device Integration
- EST4502C: Metrology and Instrumentation
- ETG3533C: Applied Engineering Strength of Materials
- ETG4950: Engineering Senior Design
- ETI3418C: Computer Numerical Controls – Machining Applications
- ETI3421: Materials and Processes
- ETI3651C: Computer Applications
- ETM4331: Applied Fluid Mechanics
- ETM4512C: Applied Design of Machine Elements

Service

1. Appointed Member of the Editorial Board for the International Journal of Engineering Analysis (Elsevier) in 2007.

2. SolidWorks Training Sessions for Faculty and Teaching Assistants.

3. Host to UCF-UC (University of Carabobo, Venezuela) agreement for Visiting Scholars and Ph.D. International Advisor.

4. Developed iCLS Initiative for Classroom-less Content Delivery for CECS Introduction to Engineering Courses. Expanded the Initiative to ENT Courses. Participated in the iCLS Training of other CECS Faculty Members.

5. CECS Outreach Program High-School Faculty Trainer.

6. Member of the CECS Undergraduate Task Force Committee.

7. Joint UCF/CECS/BCC/RC Pre-Engineering Partnership Faculty Trainer.

8. International Scientific Advisory Committee for BEM/MRM 29, UK, 2007.

9. Faculty Advisor for the Society of Hispanic Professional Engineers (SHPE).

10. University Library Advisory Committee (LAC) 2005-2007.

11. Faculty Advisor and Lecturer for the Summer Program for Academic Careers in Engineering (SPACE).

12. Mentor for the Undergraduate Research and Mentoring Program (RAMP).

13. Judge for the Annual NSF Florida-Georgia Louis Stokes Alliance for Minority Participation in Engineering & Science (FGLSAMP).

14. 2003-2004 Faculty Library Representative for Engineering Technology.

15. 2003-2004 University Course Request Committee (UCRC) Engineering Technology Representative.

16. Proposal Reviewer for the U.S. Civilian Research & Development Foundation (CRDF) for the Independent States of the Former Soviet Union. Advance the transition of weapons scientists to civilian work by funding collaborative non-weapons research and development projects.

Student Advising Activities

Undergraduate:
- Andres Osorio. RAMP and RAMP-UP Mentor. CFD.
- Kevin Durette. Research Supervisor. Numerical Analysis.
- M. Alejandra Ricaurte. Research Supervisor. Biomechanics.
- Luis Rosa. Research Supervisor. CFD.
- Victor Huayamave. Research Supervisor. CFD.
- Christian Saffon. Research Supervisor. CFD.
- Shannon Statham. Research Supervisor. Conjugate Heat Transfer.
- Colleen Crawford. Research Supervisor. CFD.
- Salvadore Gerace. Honors in the Major Co-Advisor. Meshless Methods.
- Jonathan Wehking. Honors in the Major Co-Advisor. Brownian Ratchets.
- Carolina Barriento. Research Supervisor. Parallel Clustering.
- Kevin Erhart. Honors in the Major Co-Advisor. BEM.
- Eric Mitteff. Research supervisor. Meshless methods.
- Luis Quintana. Research supervisor. Meshless methods.
- Santiago Salazar. Research supervisor. CFD.
- Anthony Esposito. Research supervisor. Genetic Algorithms.
- Leonardo Rocha. RAMP mentor. Aerodynamics.
- Dustin Johnson. RAMP mentor. Parallel Clustering.

Graduate:
- Mohammed Elshennawy. Ph.D. research supervisor. Biomechanics.
- Santiago Salazar. M.S. Advisor. Conjugate Heat Transfer.
- Stefan Mancas. Department of Mathematics. Ph.D. Dissertation Committee Member. Solitons.
- Tomasz Wlodarczyk. Department of Mathematics. Ph.D. Dissertation Committee Member.
- Anthony Amadio. M.S. Thesis Committee Member. Driver-Gas Tailoring for Test-Time Extension using Unconventional Driver Mixtures.
- Zaher El Zahab. Ph.D. Co-Advisor. Meshless Methods, Combustion, Bio-Fluids.
- Rodolfo Hutchinson. Ph.D. Advisor. BEM Thermoelasticity.
- Ivan Oropeza. M.S. and Ph.D. Advisor. Oscillatory Species Separation, CFD.
- Jennifer Crain. M.S. and Ph.D. Advisor. Oscillatory Species Separation, CFD.

- Eric Mitteff. M.S. and Ph.D. Advisor. Meshless Methods.
- Kevin Erhart. M.S. and Ph.D. Advisor. BEM, Meshless Methods, and Inverse Problems.
- Salvadore Gerace. M.S. Co-Advisor. Meshless Methods and Multi-Objective Optimization.
- Andreas Hadjinicolaou. Ph.D. Co-Advisor. BEM and Inverse Problems in Heat Transfer.
- Franklin Rodriguez. Ph.D. Advisor. Numerical Conjugate Heat Transfer.
- Mahmood Silieti. Ph.D. Co-Advisor. Numerical Conjugate Heat Transfer and CFD.
- Jennifer Gill. M.S. Co-Advisor. Thermal Contact Resistance and Genetic Algorithms.
- Mohamed Elfahdli. M.S. Co-Advisor. Numerical Conjugate Heat Transfer and CFD.
- Bhaskar Sirivastra. M.S. Committee member. Laser speckle Pattern Correlations.
- Brian Gulliver. M.S. Committee member. Rotary Micro-Compressor.
- Rachid Aitmaalemachen. M.S. Committee member. Explicit Sensitivity Coefficient.
- Ed Chehab. M.S. Committee member. Heat Transfer Coefficients in Channels.

International:
- David Ojeda. Central University, Venezuela. Ph.D. International Advisor. BEM/GA Cavity Detection in Biomechanics.
- Brizeida Gamez. Central University, Venezuela. Ph.D. International Advisor. BEM Domain Decomposition Thermoelasticity and Fracture Mechanics.
- Carlos Morales. University of Carabobo, Venezuela. Ph.D. International Advisor. Virtual Fluoroscopy System for Spine Surgery.
- Carolina Peña. University of Carabobo, Venezuela. Ph.D. International Advisor. Numerical Optimization for Braquiotherapy Planning.

Academic Awards and Recognitions

- State of Florida University System. Teaching Incentive Program. 2006-2007.

- Faculty Excellence Award. College of Engineering and Computer Science. 2006-2007.

- Faculty Excellence Award. Engineering Technology Department. 2006-2007.

- Fellow of the Wessex Institute of Great Britain. July 12, 2004.

- Member of the International Association of Networking Professionals.

- Who's Who in Science and Engineering, 2005-2006.

- Awarded 'Teacher of the Year 2001' recognition by Pi-Tao-Sigma, National Mechanical Engineering Honors Society.

- Consistently received excellent teaching evaluations at UCF. Overall assessment of instructor: 89.19% excellent, 10.81% very good, 0% good, 0% fair, and 0% poor.

- Selected as Distinguished and Valedictorian Professor for the class of 1991 at UNITEC.

- Cumulative Grade Point Average (GPA) of 4.0/4.0, Graduate Program, UCF 1998.

- Certificate of Excellence, Mechanical Engineering Graduate Program, UCF 1996.

- Order "Antonio José de Sucre ", FUNDAYACUCHO, Venezuela 1993.

- Best Academic Index (GPA) Award for the Class of 1992, Central Technological University.

- Excellent Academic Performance Award, Central Technological University, 1992.

- Valedictorian for the Class of 1992, Central Technological University.

- Distinguished Thesis, Central Technological University 1992.

BOOKS AUTHORED/EDITED

1. DIVO, E. AND KASSAB, A.J., BOUNDARY ELEMENT METHOD FOR HEAT CONDUCTION: WITH APPLICATIONS IN NON-HOMOGENEOUS MEDIA, TOPICS IN ENGINEERING SERIES VOL. 44, WIT PRESS, BILLERICA, MA, 2002.

2. KASSAB, A.J., BREBBIA, C.A., DIVO, E., AND POLJAK, D. (EDS.), PROCEEDINGS OF BEM/MRM27, THE 27TH INTERNATIONAL CONFERENCE IN BOUNDARY ELEMENT METHODS AND OTHER MESH REDUCTION METHODS, MARCH 15-17, 2005, ORLANDO, FLORIDA.

3. BREBBIA, C.A., KASSAB, A.J., CHOPRA, M.B. AND DIVO, E. (EDS.), PROCEEDINGS OF BETECH2001, THE 14TH INTERNATIONAL BOUNDARY ELEMENT TECHNOLOGY CONFERENCE, MARCH 12-14, 2001, ORLANDO, FLORIDA, COMPUTATIONAL MECHANICS, BOSTON, 2001.

BOOK CHAPTERS AUTHORED

1. DIVO, E., KASSAB, A.J., AND ERHART, K., "PARALLEL DOMAIN DECOMPOSITION BEM TECHNIQUES FOR STEADY AND TRANSIENT HEAT TRANSFER", CHAPTER IN PARALLEL BEM AND MESH REDUCTION METHODS, POPOV, V. (ED.), WIT PRESS, BILLERICA, MA, (IN PRESS).

2. KASSAB, A.J., WROBEL, L.C., BIALECKI, R.A., AND DIVO, E., "BOUNDARY ELEMENTS IN HEAT TRANSFER," CHAPTER 4 IN HANDBOOK OF NUMERICAL HEAT TRANSFER, MINKOWYCZ, W. AND SPARROW, E.M. (EDS.), JOHN WILEY AND SONS, NEW YORK, NY, JOHN WILEY AND SONS, VOL. 1, 2ND EDITION, PP. 125-166, 2005.

3. DIVO, E. AND KASSAB, A.J., "A GENERALIZED BOUNDARY INTEGRAL

FORMULATION FOR DIFFUSION PROBLEMS IN INHOMOGENEOUS MEDIA," CHAPTER 2 IN, ADVANCES IN BOUNDARY ELEMENTS: NUMERICAL AND MATHEMATICAL ASPECTS, GOLBERG, M.A., (ED.), COMPUTATIONAL MECHANICS, BOSTON, 1998, PP. 37-76.

REFEREED JOURNAL PUBLICATIONS

1. D. Ojeda, E. Divo, A. Kassab, M. Cerrolaza. Detección de Cavidades en Problemas de Elastostática Usando Algoritmos Genéticos y el Método de los Elementos de Contorno. REVISTA INTERNACIONAL DE METODOS NUMERICOS PARA CALCULO Y DISEÑO EN INGENIERIA. http://www.cimne.upc.es/rimni/papers.asp (submitted for review Jan. 2007)

2. B. Gamez, E. Divo, A. Kassab, M. Cerrolaza. Análisis de Problemas Elásticos 2D utilizando la Técnica de Descomposición de Dominio y el Método de los Elementos de Contorno. REVISTA DE LA FACULTAD DE INGENIERIA. UCV. http://www.revele.com.ve/revistas.php?rev=fiucv (submitted for review Jan. 2007)

3. D. Ojeda, E. Divo, A. Kassab, M. Cerrolaza. Superposición de Singularidades para Simular la Presencia de Cavidades en Problemas de Elastostática Usando el Método de los Elementos de Contorno. ACTA CIENTIFICA VENEZOLANA. http://acta.ivic.ve/ (submitted for review Dec. 2006)

4. B. Gamez, E. Divo, A. Kassab, M. Cerrolaza. Descomposicion de Dominio Iterativo en Paralelo para Problemas Termoelásticos usando el Método de Elementos de Contorno. ACTA CIENTIFICA VENEZOLANA. http://acta.ivic.ve/ (submitted for review Dec. 2006)

5. Erhart, K. Kassab, A.J. and Divo, E., "An Inverse Localized Meshless Technique for the Determination of Non-Linear Heat Generation Rates in Living Tissues," International Journal of Heat and Fluid Flow, (in press)

6. Bialecki, R., Divo, E., and Kassab, A.J., "Reconstruction of Time Dependent Boundary Heat Flux by a BEM-Based Inverse Algorithm," Engineering Analysis with Boundary Elements, Vol. 30, 2006, pp. 767-773.

7. Divo, E. and Kassab, A.J., "Transient Non-linear Heat Conduction Solution by a Dual Reciprocity Boundary Element Method with an Effective Posteriori Error Estimator," CMC: Computers, Materials, & Continua, Vol. 2, No.4, 2006, pp. 275-288.

8. Divo, E. and Kassab, A.J., "Fractional Time Step Localized Meshless Method for Forced and Natural Convective Heat Transfer," AIAA Journal of Thermophysics, (in review).

9. Divo, E. and Kassab, A.J., "An Efficient Localized RBF Meshless Method for Fluid Flow and Conjugate Heat Transfer," ASME Journal of Heat Transfer, Vol. 129, 2007, pp. 124-136.

10. Divo, E. and Kassab, A.J., "Iterative Domain Decomposition Meshless Method Modeling of Incompressible Flows and Conjugate Heat Transfer," Engineering Analysis with Boundary Elements, Vol. 30, 2006, pp. 465-478.

11. Erhart, K., Divo, E., and Kassab, A.J., "A Parallel Domain Decomposition Boundary Element Method Technique for Large-Scale Transient Heat Conduction Problems," Engineering Analysis with Boundary Elements, Vol. 30, No. 7, 2006, pp. 553-563.

12. Divo, E., Kassab, A.J., and Gill, J., "A BEM/GA Technique for the Inverse Determination of Multi-Dimensional Thermal Contact Resistance", Numerical Heat Transfer, (in review).

13. Divo, E. and Kassab, A.J., "A Meshless Method for Conjugate Heat Transfer Problems," Engineering Analysis with Boundary Elements, Vol. 29, No. 2, 2005, pp. 136-149.

14. Divo, E., Kassab, A.J., Kapat, J.S., and Chyu, M.K., "Retrieval of Multi-Dimensional Heat Transfer Coefficient Distributions Using an Inverse-BEM-Based Regularized Algorithm: Numerical and Experimental Examples," Engineering Analysis with Boundary Elements, Vol. 29, No. 2, 2005, pp. 150-160.

15. Silieti, M., Divo, E., and Kassab, A.J., "An Inverse Boundary Element Method/Genetic Algorithm Based Approach for Retrieval of Multi-dimensional Heat Transfer Coefficients within Film Cooling Holes/Slots," Inverse Problems in Science and Engineering, (in press).

16. Divo, E., Kassab, A.J. and Rodriguez, F., "A Parallelized Iterative Domain Decomposition Approach for 3D Boundary Elements in Non-Linear Heat Conduction," Numerical Heat Transfer, Numerical Heat Transfer, Part B: Fundamentals. Vol. 44, No. 5. pp. 417-437.

17. DIVO, E., AND KASSAB, A.J., "AN EFFICIENT SINGULAR SUPERPOSITION TECHNIQUE FOR CAVITY DETECTION AND SHAPE OPTIMIZATION," NUMERICAL HEAT TRANSFER, 2004, PART B: FUNDAMENTALS, VOL. 45, PP. 1-30.

18. DIVO, E., KASSAB, A.J., AND INGBER, M.S., "SHAPE OPTIMIZATION OF ACOUSTIC SCATTERING BODIES," ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, 2003, VOL. 27, PP. 695-703.

19. Kassab, A., Divo, E., Heidmann, J., Steinthorsson, E., and Rodriguez, F., "BEM/FVM Conjugate Heat Transfer Analysis of a Three-Dimensional Film Cooled Turbine Blade," International Journal for Numerical Methods in Heat and Fluid Flow, International Journal of Numerical Methods for Heat and Fluid Flow, 2003, Vol. 13, No. 5, pp. 581-610.

20. Bialecki, R., Divo, E., Kassab, A.J., and Ait Maalem, R., "Explicit Calculation of Smoothed Sensitivity Coefficients for Linear Problems," International Journal for Numerical Methods in Engineering, Vol. 57, No. 2, 2003, pp. 143-167.

21. Bialecki, R., Divo, E., and Kassab, A.J., "Unknown Time Dependent Heat Flux Boundary Condition Reconstruction Using a BEM-Based Inverse Algorithm," Electronic Journal of Boundary Elements, URL: http://tabula.rutgers.edu/EJBE/proceedings/2001/.

22. Divo, E., Steinthorsson, E., Kassab, A.J., and Bialecki, R., "An iterative BEM/FVM protocol for steady-state multi-dimensional conjugate heat transfer in compressible flows," Engineering Analysis with Boundary Elements, Volume 26, No. 5, 2002, pp. 447-454.

23. Kassab, A.J., Divo, E., and Kapat, J.S., "Multi-Dimensional Heat Flux Reconstruction Using Narrow-Band Thermochromic Liquid Crystal Thermography," Inverse Problems in Engineering, Vol. 9, 2001, pp. 537-559.

24. Divo, E., Kassab, A.J., and Rodriguez, F., "Characterization of Space Dependent Thermal Conductivity with a BEM-Based Genetic Algorithm," Numerical Heat Transfer, Part A: applications, Vol. 37, No. 8, 2000, pp. 845-877.

25. DIVO, E., KASSAB, A.J., AND CAVALLERI, R.J., "APPLICATION OF THE DRBEM TO MODEL ABLATION CHARACTERISTICS OF A THRUST VECTOR CONTROL VANE," ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, VOL. 23, NO. 8, 1999, PP. 693-702.

26. DIVO, E. AND KASSAB, A.J., "GENERALIZED BOUNDARY INTEGRAL EQUATION FOR HEAT CONDUCTION IN NON-HOMOGENEOUS MEDIA: RECENT DEVELOPMENTS ON THE SIFTING PROPERTY," ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, VOL. 22, NO.3, 1998, PP. 221-234.

27. KASSAB, A.J., AND DIVO, E., "AUTHOR'S REPLY TO BONNET AND GUIGGIANI COMMENTS ON THE SIFTING PROPERTY," ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, VOL. 22, NO. 3, 1998, PP. 241-244.

28. DIVO, E. AND KASSAB, A.J., "A GENERALIZED BIE FOR TRANSIENT HEAT CONDUCTION IN HETEROGENEOUS MEDIA," AIAA JOURNAL OF THERMOPHYSICS AND HEAT TRANSFER, VOL. 12, NO.3, 1998, PP. 364-373.

29. DIVO, E. AND KASSAB, A.J., "A BOUNDARY INTEGRAL EQUATION FOR STEADY HEAT CONDUCTION IN ANISOTROPIC AND HETEROGENEOUS MEDIA," NUMERICAL HEAT TRANSFER, PART B: FUNDAMENTALS, VOL. 32, NO. 1, 1997, PAGES 37-61.

30. KASSAB, A.J. AND DIVO, E., "A GENERAL BOUNDARY INTEGRAL EQUATION FOR ISOTROPIC HEAT CONDUCTION PROBLEMS IN BODIES WITH SPACE DEPENDENT PROPERTIES," ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, VOL. 18, NO. 4, 1996, PP. 273-286.

REFEREED CONFERENCE PAPERS

1. B. Gamez, D. Ojeda, E. Divo, A. Kassab, M. Cerrolaza. Current Research in Biomechanics using The Boundary Element Method, COMPLAS 2007, Barcelona, Spain. (Invited Paper).

2. D. Ojeda, B. Gamez, E. Divo, A. Kassab, M. Cerrolaza. Singular Superposition Elastostatics BEM/GA Algorithm for Cavity Detection, BEM-MRM 29. June 4-6, 2007. New Forest, UK.

3. B. Gamez, D. Ojeda, E. Divo, A. Kassab, M. Cerrolaza. Parallelized Iterative Domain Decomposition Boundary Element Method for Thermoelasticity. BEM-MRM 29. June 4-6, 2007. New Forest, UK.

4. Erhart, K., Divo, E., and Kassab, A. Boundary Element Method Thermo-Elastic Analysis for Laser Drilling. ECCOMAS 2007. May 21-23, 2007. Ibiza, Spain.

5. Erhart, K., El Fadli, M., Kassab, A., Divo, E., and Heidmann, J. Coupled BEM/FVM Conjugate Heat Transfer Analysis of a Three-Dimensional Film Cooled Turbine Blade. ECCOMAS 2007. May 21-23, 2007. Ibiza, Spain.

6. Divo, E., and Kassab, A. A Meshless Method for Conjugate Heat Transfer. ECCOMAS 2007. May 21-23, 2007. Ibiza, Spain.

7. Mitteff, E., Gerace, S., Divo, E., and Kassab, A. A Meshless/Bem Method for Coupled Thermofluids-Structural Interactions. ECCOMAS 2007. May 21-23, 2007. Ibiza, Spain.

8. Divo, E., Kassab, A., Gamez, B., Ojeda, D., and Cerrolaza, M. Parallelized Iterative Domain Decomposition BEM for Large-Scale Coupled Thermoelasticity. ECCOMAS 2007. May 21-23, 2007. Ibiza, Spain.

9. D. Ojeda, E. Divo, A. Kassab, M. Cerrolaza. Cavity Detection using Genetic Algorithm and Boundary Element Method in Elastostatic Problems. IPDO 2007. April 16-18, 2007. Miami, FL, USA.

10. Gerace, S., Kassab, A., and Divo, E. An Automated Approach to Multiobjective Shape Optimization for Engineering Design Problems. IPDO 2007. April 16-18, 2007. Miami, FL, USA.

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4. Kassab, A.J. and Divo, E., "Parallel Domain Decomposition Boundary Element Method for Large-Scale Heat Transfer Problems," IMSE 2004, August 2-5, 2005, Orlando, FL.

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13. Kassab, A.J. and Divo, "A Boundary Only BEM for Heat Conduction in Heterogeneous Media," Symposium on BEM in Mechanics, p. 81, 1997 Joint Summer Meeting of the ASME, ASCE, and SES, June 29-July 2, 1997, Evanston, Illinois.

Short Courses, Invited Talks, Keynote Addresses:

1. Divo, E., "Beyond Grids: Meshless Incompressible Flow CFD," Invited short course at ASME SHT/InterPack 2007, Vancouver, BC, Canada, July 8, 2007.

2. Kassab, A.J. and Divo, E., "Singular-Superposition Method for the Inverse Geometric Problem - applications in heat transfer and elasticity," Invited mini-symposium presented at the 2007 Applied Inverse Problems Conference, Vancouver, BC, Canada, June 25-29, 2007.

3. Divo, E., "Computational Mechanics. Numerical Methods in Mechanical Engineering," Invited Talk at Jose Antonio Paez University, San Diego, Venezuela, March 17, 2006.

4. Kassab, A.J. and Divo, E., "Fractional Time Step Localized Meshless Method for Forced and Natural Convective Heat Transfer," 44th AIAA Aerospace Science Meeting and Exhibition, Jan. 9-12, 2006, Reno, NV. (Invited panel session).

5. Kassab, A.J. and Divo, E., "Boundary Elements and Other Mesh Reduction Methods," Short Course at the NASA Thermofluids Analysis Workshop (TFAWS 2005), Orlando, August 9-12, 2005.

Reviewing

- International Journal of Numerical Methods in Engineering (IJNME)
- Computers and Fluids Journal
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- BEM/MRM: International Conference in Boundary Element and Mesh Reduction Methods.
- BETECH: International Conference in Boundary Element Technology.
- SECTAM: South Eastern Conf. in Theoretical and Applied Mechanics.

Chair/Co-Chair of International Conferences

- Member of Organizing Committee for NASA's 16th Annual Thermal and Fluids Analysis Workshop TFAWS05. UCF, Orlando, FL, August 8-12, 2005.

- 27th World Conference on Boundary Elements and Other Mesh Reduction Methods (BEM 27/MRM). Kassab, A.J., Brebbia, C.A., and Divo, E., co-chairs. UCF, Orlando, Florida, March 12-15, 2005.

- BETECH2001, the 14th International Boundary Element Technology Conference. Kassab, A.J., Brebbia, C.A., Chopra, M.B. and Divo, E., co-chairs. UCF, Orlando, Florida, March 12-14, 2001.

Conference Sessions Chaired/Organized

- Chaired sessions 6 and 9 at CIMENICS 2006, 8th International Congress of Numerical Methods in Engineering and Applied Sciences. Margarita Island, Venezuela, March 20-24, 2006.

- Organized and chaired session HTD K20 Coupled Field Problems at the ASME IMECE 2005 Congress in Orlando, Florida, November 2005.

- Chaired session S17 "Other Applications II", Numerical Heat Transfer NHT2005 EUROTHERM Symposium 82, Krakow, Poland, Sept. 13-17, 2005.

- Organized and chaired Minisymposium on Conjugate Heat Transfer and Thermoealsticity for the ECCOMAS Conference on Computational Methods for Coupled Problems in Science and Engineering, May 25-28, 2005, Santorini, Greece.

- Organized and chaired session HT-1D K20 Boundary Element Methods in Heat Transfer, Sunday, Nov. 14, at the ASME IMECE 2004, Anaheim, California.

- Chaired Session 5 on advanced Mesh Reduction, Tuesday, April 20, 2004, at BEM 26, Bologna, Italy, April 19-21, 2004.

- Chaired Session at ISIP2003, International Symposium on Inverse Problems in Engineering Mechanics 2003, Nagano, Japan, February 18-21, 2003.

- Chaired Session at SECTAM XXI, the 21st Southeast Conference on Theoretical and Applied Mechanics, UCF, Orlando, Florida, May 19-21, 2002.

- Chaired Session at BETECH2001, the 14th International Boundary Element Technology Conference, UCF, Orlando, Florida, March 12-14, 2001.

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EDUCATION

- Ph.D., 1992, University of South Florida, Tampa, FL Specializing in Industrial Psychology. Minor in Artificial Intelligence from the Department of Computer Science.
- Dissertation title: A heuristic procedure for mapping knowledge, skills, and abilities to tasks.
    - Published as: P. Craiger and M. Coovert (1993) A fuzzy system for mapping worker attributes to task. Behavior Research Methods, Instruments and Computers, 26, 107-111.
- M.S., 1990, University of South Florida, Tampa, FL Specializing in Industrial Psychology.
- B.S., 1980, Florida State University, Major in Government.

EDITED BOOKS

- P. Craiger and S. Shenoi. Advances in Digital Forensics III, International Federation for Information Processing, New York, 2007.

JOUNRNALS (PEER-REVIEWED)

1. P. Burke and P. Craiger. Xbox forensics. Journal of Digital Forensics Practice, New York, Taylor & Francis, to appear.

2. C. Marberry and P. Craiger. CD-R acquisition hashes affected by write options. Journal of Digital Forensics Practice, New York, Taylor & Francis, to appear.

3. P. Craiger, P. Burke, and C. Marberry. Forensics Analysis of Phishing Cases Using Open Source and Free Tools. Anti-phishing and Online Fraud. Journal of Digital Forensics Practice, New York, Taylor & Francis, 223-230, 2007.

4. P. Craiger, M. Coovert and M. Teachout, Fuzzy rule-based system for predicting job performance, International Journal of Information Technology and Decision Making, 2003.

5. M. Coovert and P. Craiger, An expert system for integrating multiple fit-indices for structural equations modeling, New Review of Applied Expert Systems, 6, pp 131-140, 2001.

6. J. Shroder, M. Bishop, J. Olsenholler and P. Craiger, Geomorphology education and the World Wide Web Geomorphology and Public Policy 47, pp 343-363, New York, Elsevier, 2002.

7. M. Coovert, P. Craiger and M. Teachout, The effectiveness of the direct product versus confirmatory factor model for reflecting the structure of multimethod-multirater job performance data, Journal of Applied Psychology, 2, pp. 271-280, 1997.

8. P. Craiger, R. Weiss, D. Goodman and A. Butler, Simulating organizational behavior with fuzzy cognitive maps International Journal of Computational Intelligence and Organizations, 3, pp. 120-133, 1996.

9. P. Craiger and M. Coovert, A fuzzy system for mapping worker attributes to tasks, Behavior Research Methods, Instruments and Computers, 26, pp. 107-111, 1993.

10. P. Craiger and M. Coovert, Fuzzy Fit-Index Tutoring System (FFITS): An intelligent system for interpreting and integrating fit indices from covariance structure modeling solutions, Applied Psychological Measurement, 15, p. 292, 1991.

11. L. Penner, S. Harris, J. Llobet and P. Craiger, Studying personnel decisions about female managers: Methodological, 1991. considerations, Equal Opportunities International, 10, pp. 3-9, 1991.

BOOK CHAPTERS (PEER REVIEWED)

1. P. Burke and P. Craiger, Forensic Analysis of Xbox Consoles. In P. Craiger and S. Shenoi (Eds.), Advances in Digital Forensics III, Springer, New York, to appear.

2. C. Maryberry and P. Craiger, Burn Options Affect Cryptographic One-way Hashes of CD-R Media. In P. Craiger and S. Shenoi (Eds.), Advances in Digital Forensics III, Springer, New York, to appear.

3. P. Craiger, Training and Education in Digital Forensics. In J. Barbara (Ed.), Handbook of Digital and Multimedia Evidence. Humana Press, to appear.

4. P. Craiger and P. Burke, Mac OS X Forensics. In M. Olivier and S. Shenoi (Eds.), Advances in Digital Forensics II, Springer, New York, to appear.

5. P. Burke and P. Craiger, Trace evidence of secure delete programs. In M. Olivier and S. Shenoi (Eds.), Advances in Digital Forensics II. Springer, New York, to appear.

6. P. Craiger, Computer forensics methods and procedures In H Bigdoli, (Ed), Handbook of Information Security, New York, John Wiley and Sons, 2, pp. 736-755, 2006.

7. P. Craiger, M. Pollitt and J. Swauger, Digital Evidence and law enforcement In H Bigdoli, (Ed), Handbook of Information Security, New York, John Wiley and Sons, 2, pp. 739-777, 2006.

8. P. Craiger, Recovering digital evidence from Linux systems, In S. Shenoi and M. Pollitt (Eds), Advances in Digital Forensics, New York, Springer, pp. 233-243, 2006.

9. P. Craiger, J. Swauger, and C. Marberry. Digital forensic software tool validation. In P. Kanellis (Ed) Digital Crime and Forensic Science in Cyberspace Idea Group, 91-108, 2006.

10. M. Coovert, L. Foster and P. Craiger, Technology and Stress, J. Barling, K. Kelloway and M. Frone (Eds), Handbook of Work Stress, New York, Sage Publications, pp.5-9, 2003.

11. P. Craiger and V. Collins. Practical guide to evaluating computer-enabled communication in organizations. In J. Edwards, J. Scott and N. Raju, N (Eds), The Human Resources Handbook of Program Evaluation, New York: Sage Publishing, pp. 34-56, 2003.

12. P. Craiger, Computer-assisted instruction, In M. Zeleny (Ed), Handbook of Information Technology in Business, London: Thompson International Publishing, pp. 34-55, 2000.

13. P. Craiger, Human-Computer Interaction, In M. Zeleny (Ed), Handbook of Information

Technology in Business, London: Thompson International Publishing. pp. 450-66, 2000.

14. M. Coovert and P. Craiger, Modeling performance and establishing training criteria in training systems. In J. K. Ford (Ed), Improving training effectiveness in work organizations pp 47-71 Hillsdale, NJ: Lawrence Erlbaum Associates. 1996.

15. M. Coovert, P. Craiger and J. Cannon-Bowers, Innovations in modeling and simulating team performance: Implications for decision making. In R. Guzzo and E. Salas (Eds), Team effectiveness and decision making in organizations: Frontiers in industrial and organizational psychology pp 149-203 New York: Jossey-Bass. 1996.

16. L. Penner, B. Fritzsche, P. Craiger and T. Freifeld, Measuring the prosocial personality In J. Butcher and C. D. Spielberger (Eds) Advances in personality assessment (Vol 10) Hillsdale, NJ: Lawrence Erlbaum, 1995.

17. L. Penner and P. Craiger, Individual performance in a team context: The weakest link. R. Swezey and E. Salas (Eds), Teams: Their training and performance New York: ABLEX. 1991.

GRANTS AND CONTRACTS

2006:

18. PI, Virtual Digital Evidence Lab $140,600

19. PI, Digital Evidence Mark-Up Language (DEML) $ 57,479

20. PI, Digital Evidence Certification $ 51,922

2005:

1. PI, Digital Evidence Markup Language and Digital Evidence Certification. National Institute of Justice. $84,000.

2. PI, Virtual Digital Evidence Lab. National Institute of Justice 2006 $64,000.

21. PI, Tool Validation and Testing/Media Attribution, State of Florida $15,000.

2003:

22. B. Burnham, P. Craiger (Primary Author: 95%) and V. Winter, Cybercorp Scholarships at the University of Nebraska at Omaha Information Assurance Program, National Science Foundation, DUE-0313691, $2.2 Million (4 years).

23. B. Burnham and P. Craiger (Primary author: 90%) Department of Defense Information Assurance Program Scholarships at the University of Nebraska at Omaha Information Assurance Program, U.S. Department of Defense, Awarded $294,000.

24. P. Craiger, Computer and Network Forensics NASA Nebraska Space Grant and EPSCoR Seed Research Program $1,000.

25. P. Craiger and K. Gubbels, Honeypots for Defense in Depth, NASA Nebraska Space Grant and EPSCoR Seed Research Program $1,200

2001:

1. P. Craiger, Ubiquitous Computing Lab, The Nebraska Foundation. $60,000.

2. M. Bishop, P. Craiger and A. Stoyen, Global Land-Ice Measurements from Space NASA Nebraska Space Grant Consortium, $10,000.

3. M. Bishop, P. Craiger and A. Stoyen, Global Land-Ice Measurements from Space NASA Nebraska Space Grant and EPSCoR Seed Research Program. $1,000.

4. P. Craiger, NASA Space Grant and EPSCoR Program Seed Program. $3,000.

Pre-2000:

1. P. Craiger A statistical model of Marine Corps Quality of Life, US Army Research Office Contract DAAH04-96-C-0086. $20,000.

2. P. Craiger and D. Peak, AT&T Peter Kiewit Foundation for Educational Technology (Co-Principal Investigator). $1500.

3. P. Craiger (SME) Statewide education for advanced practice community health nursing Subject matter expert (Federal Department of Health and Human Services), $4,000 subcontract to UNO.

4. PI, P. Craiger, Navy QoL Predictive Model Project US Army Research Office Contract No DAL03-91-C-0034, TCN 96217 Awarded $38,000.

5. PI, P. Craiger and J. Crehan, National Aeronautics and Space Administration Space Grant Consortium. $7,500.

6. P. Craiger First Data Corp (Non disclosure contract: Proprietary contract work) Principal investigator Awarded, $17,000

7. P. Craiger and R. Weiss, Conagra Contract (Non disclosure contract: Proprietary contract work) Research design and data analysis Statistical package training. 3,000.

8. PI, P. Craiger Navy Quality of Life Predictive Model Project US Army Research Office Scientific Services Program, Contract DAAL03-91-C-0034, Awarded $54,000.

9. D. Peak, P. Craiger and R. Bernier, Environmental Justice Through Pollution Prevention (Environmental Protection Agency PY90060204). $75,000.

PROFESSIONAL CONFERENCE PROCEEDINGS

1. P. Craiger, L. Ponte, C. Whitcomb, and M. Pollitt. Master's in Digital Forensics. Proceedings of the 40th Annual Hawaii International Conference on System Sciences. To appear.

2. P. Craiger, M. Pollitt, C. Marberry, and P. Burke. CD-ROM Write Options Affect Calculation of One-way Cryptographic Hashes. Proceedings of the 2007 Annual Meeting of the American Academy of Forensic Science. To appear.

3. P. Craiger, J. Swauger and C. Marberry, Digital evidence obfuscation: recovery techniques. The Proceedings of the International Society for Optical Engineering, pp. 777-888, 2005.

4. P. Craiger, Portable forensics with Linux. Proceedings of the Annual Meeting of the

Nebraska Academy of Sciences, Lincoln, NE, 2004.

5. P. Craiger, et al, An applied course in network forensics. Proceedings of the Workshop for Dependable and Secure Systems University of Idaho, Moscow, Idaho, Sept 23-35, 2002.

6. R. Weiss and P. Craiger, Implications of the Elaboration Likelihood Model for automation monitoring failure. Proceedings of the Annual Meeting of the Nebraska Academy of Sciences, Lincoln, NE, 2002.

7. M. Coovert, Elliot, L. Foster and P. Craiger, Measurement in synthetic task environments for teams: A methodological typology. Proceedings of the Eighth International Conference on Human-Computer Interaction, 2002.

8. P. Craiger, M. Coovert and M. Teachout, Fuzzy neural models in industrial psychology research. Proceedings of the World Congress on Neural Networks, Vol II, 617-620, 1993.

9. R. Weiss, J. de Groot and P. Craiger, Presenting the Programmable Task Battery for research into automation bias/automation induced complacency. Proceedings of the Annual Meeting of the Human Factors and Ergonomics Society, Chicago, IL, 1998.

10. P. Craiger, D. Goodman, R. Weissand J. DeGroot, Mental models and pilot performance: A cognitive science approach. Proceedings of the Nebraska Academy of Sciences Meeting, Lincoln, NE, 1997.

11. P. Craiger and M. Coovert, Modeling dynamic social and psychological processes with fuzzy cognitive maps. textitProceedings of the Third IEEE World Conference on Fuzzy Systems, 3, 1873-1877, 1994.

12. P. Craiger, Discovering causal model implications with fuzzy cognitive maps: Help for the behavioral scientist. textit Proceedings of the Fourth IEEE World Conference on Neural Networks, 2, 836-841, 1994

13. M. Coovert, E. Salas, J. Cannon-Bowers, P. Craiger and P. Takalkar, Understanding team performance measures: Application of Petri nets Proceedings of the IEEE International Conference on Systems, Man and Cybernetics, pp 387-393, Washington, D C: IEEE Computer Society Press, 1990.

CHAIRED CONFERENCES AND PROGRAM PANELS

1. (Chair) International Federation for Information Processing Working Group 11.9 (Digital Forensics), January, 2007, Orlando FL.

2. (Program panel) Computer Forensics Track of the ACM SAC 2007, The 22nd Annual ACM Symposium on Applied Computing, Seoul Korea.

3. (Co-chair), Anti-Phishing Working Group Fall Meeting, November, 2006, Orlando, FL. (General Chair) International Federation for Information Processing Working Group 11.9 (Digital Forensics), January, 2006, Orlando FL.

4. (Member) Technical Working Group on Training and Education in Digital Forensics. NIST/NIJ Sponsored Education Committee.

5. (General Chair) International Federation for Information Processing Working Group 11.9 (Digital Forensics), January, 2005, Orlando FL.

CONFERENCE PRESENTATIONS

1. M. Pollitt, P. Craiger, N. Beebe, R. Jewel, and A. Brill (2007). Digital evidence workshop. Presentation for the 2007 Annual Meeting of the American Academy of Forensic Science. February 2007, San Antonio, TX.

2. P. Craiger, M. Pollitt, C. Marberry, and P. Burke. CD-ROM Write Options Affect Calculation of One-way Cryptographic Hashes. Presentation for the 2007 Annual Meeting of the American Academy of Forensic Science. February 2007, San Antonio, TX.

3. M. Pollitt, C. Whitcomb, P. Craiger, N. Bebe, and A. Brill. A Primer and update on digital evidence. Presentation for the 2007 Annual Meeting of the American Academy of Forensic Science. February 2007, San Antonio, TX.

4. P. Craiger, L. Ponte, C. Whitcomb, and M. Pollitt. Master's in Digital Forensics. Presentation for the 40th Annual Hawaii International Conference on System Sciences. January, 2007, Hawaii, Hawaii.

5. P. Craiger, P. Burke, and C. Marberry. Forensics Analysis of Phishing Cases Using Open Source and Free Tools. 2006 Anti-Phishing Working Group Fall General Meeting. November, 2006, Orlando, FL.

6. P. C. Maryberry and P. Craiger, Burn Options Affect Cryptographic One-way Hashes of CD Media. Presentation at the Third Annual International Federation for Information Processing Working Group (Digital Forensics) Meeting, January, 2007, Orlando, FL.

7. P. Burke and P. Craiger, Forensic Analysis of Xbox Consoles. In P. Craiger and S. Shenoi (Eds.), Presentation at the Third Annual International Federation for Information Processing Working Group 11.9 (Digital Forensics) Meeting, January, 2007, Orlando, FL.

8. P. Craiger and P. Burke. Mac OS X Forensics. Second Annual Conference of the International Federation for Information Processing Working Group 11.9 (Digital Forensics). Feb. 2, 2006, Orlando, FL.

9. P. Burke and P. Craiger Trace evidence of secure delete programs. Second Annual Conference of the International Federation for Information Processing Working Group 11.9 (Digital Forensics). Feb. 2, 2006, Orlando, FL.

10. R. Eaglin and P. Craiger, Data Sharing and the Digital Evidence Markup Language. 1st Annual GJXDM Users Conference, Atlanta, GA. (not peer reviewed), 2005.

11. P. Craiger, Recovering digital evidence from Linux systems, First Annual Conference of the International Association of Information Professionals Working Group 11.9 (Digital Forensics), Orlando, FL, February, 2005.

12. P. Craiger, Digital evidence obfuscation: Recovery techniques Meeting of the International Society for Optical Engineering Orlando, FL, April, 2005.

13. P. Craiger, Portable Linux Forensics, Presentation accepted for the 26th Annual

Department of Energy Conference on Computer Security Training Kansas City MO, May, 2004.

14. P. Craiger and S. Webb, Forensics with Linux/ Presentation for the 8th Annual INFOTEC Conference Omaha, NE, April, 2004.

15. P. Craiger, Network forensics investigative techniques, 25th Annual Department of Energy Conference on Computer Security Training Baltimore MD, April, 2003.

16. S. Webb and P. Craiger, Defensive Battle Stations In Network-Centric Warfare: Rapid-response Computer and Intrusion Forensics Proceedings of the 6th Annual Systems Engineering Conference, San Diego, CA, October, 2003.

17. K. Gubbels and P. Craiger, Honeypots for Defense-in-Depth/ 25th Annual Department of Energy Conference on Computer Security Training Baltimore MD, April, 2003.

18. P. Craiger, Computer and network forensics. Seventh Annual INFOTEC Conference Omaha, NE, April, 2003.

19. K. Gubbels and P. Craiger, Defense-in-depth with honeypots. Seventh Annual INFOTEC Conference Omaha, NE, April, 2003.

20. P. Craiger, An applied course in network forensics. Workshop for Dependable and Secure Systems University of Idaho, Moscow, Idaho, Sept 23-35, September, 2002.

21. P. Craiger, Ubiquitous Security? Sixth Annual INFOTEC Conference, April, 2002. S. Whalen and P. Craiger. Attacking and Defending Wireless Networks, Sixth Annual INFOTEC Conference, April, 2002.

22. P. Craiger and R. Weiss. Supporting Telework: Applications of Distance-Based Training In M. Coovert (Chair), The Future Organization: Telework, Intelligent Agents and Nomadic Computing

23. Presented at the 14th Annual Conference of the Society for Industrial and Organizational Psychology, April, 1999.

24. P. Craiger, A. Stoyen, M. Bishop, J. Shroder and H. Sharif. Grand Challenge Computing Problems in Environmental Monitoring: UNO's Geomatics Program, Presentation for the American Association for the Advancement of Science, Omaha, NE, 1999.

25. M. Bishop, P. Craiger, J. Shroder and A. Stoyen. Web-based software for the Global Land-Ice Measurements from Space 1st International Conference on Global Land-Ice Measurements from Space, Zurich, Switzerland, 1999.

26. M. Bishop, P. Craiger, J. Shroder and A. Stoyen. UNO/CMIT Geomatics Program, 1st International Conference on Global Land-Ice Measurements from Space, Zurich, Switzerland, 1999.

27. M. Hawkins and P. Craiger, Differential effects of computer-based instruction, In P. Craiger (Chair), Human-Computer Communication Systems: Research and Application accepted for the 14th Annual Conference of the Society for Industrial and Organizational Psychology, Atlanta, GA, 1999.

28. M. Coovert, L. Elliot, L. Foster and P. Craiger. Measurement in synthetic task

environments for teams: A methodological typology Eighth International Conference on Human-Computer Interaction Munich, Germany, 1999.

29. J. Shroder, M. Bishop, M. Olsenholler and P. Craiger, Geomorphology education and the World Wide Web. 30th Biennial Conference on Geomorphology, Binghamton, New York, 1999.

30. P. Craiger, J. McGourty, M. Hawkins and K. Ury. Human-Computer Communication Systems: Research and Application Symposium for the 14th Annual Conference of the Society for Industrial and Organizational Psychology, 1999.

31. P. Craiger, R. Weiss and A. Butler. Marital status and gender differences in a model of work-family conflict. 13th Annual Conference of the Society for Industrial and Organizational Psychology, Dallas, TX, 1998.

32. R. Weiss, J. de Groot, and P. Craiger. Presenting the Programmable Task Battery for research into automation bias/automation induced complacency. Annual Meeting of the Human Factors and Ergonomics Society, Chicago, IL, 1998.

33. M. Coovert, P. Craiger and D. Dorsey, Integrating fit-indices for structural equations modeling. 13th Annual Conference of the Society for Industrial and Organizational Psychology, Dallas, TX, 1998.

34. P. Craiger, M. Coovert, J. Beaubien and D. Banks. The Internet as A Research Tool: Challenges and Opportunities Symposium. 13th annual Conference of the Society for Industrial and Organizational Psychology, Dallas, TX, 1998.

35. M. Coovert, P. Craiger and D. Riddle, New statistical tools for modeling, analysisand evaluation Symposium. 12th Annual Conference of the Society for Industrial and Organizational Psychology, St Louis, MO, 1997.

36. P. Craiger, D. Goodman, R. Weiss and J. DeGroot, Mental models and pilot performance A cognitive science approach. 1997 Nebraska Academy of Sciences Meeting, Lincoln, NE, 1997.

37. P. Craiger, J. Weiss, A. Butler, D. Goodman, and J. Dutcher (1996) Navy quality of life: Validation of latent variable models for rank and station subgroups. Eleventh Annual Conference of the Society for Industrial and Organizational Psychology

38. G. Wilcove, P. Craiger and J. Dutcher, Quality of life in the Navy. 15th Biennial Applied Behavioral Sciences Symposium, 1995.

39. V. Collins, D. Koch, R. Reiter-Palmon and P. Craiger, Flexibility as a predictor of leadership activity. Annual Conference of the Midwest Psychological Association, 1995.

40. P. Craiger, R. Weiss, A. Butler, D. Goodman and J. Dutcher, Navy quality of life: Validation of latent variable models. 11th Annual Conference of the Society for Industrial and Organizational Psychology, 1995.

41. M. Coovert, P. Craiger and M. Teachout, Application of a neuro-fuzzy system to model the relationship between job experience and performance. Annual Conference of the Society for Multivariate Experimental Psychology, 1995.

42. P. Craiger, M. Coovertand M. Teachout, Fuzzy neural models in industrial psychology research In R Yager and L Zadeh (Chairs), Neural-Fuzzy Systems I Symposium conducted at the 11th Annual Meeting of the World Congress on Neural Networks, 1995.

43. P. Craiger, A heuristic procedure for mapping worker attributes to tasks In P Craiger (Chair), Innovative applications of computers in industrial/organizational psychology research . 102nd Annual Meeting of the American Psychological Association, Los Angeles, CA, 1994.

44. P. Craiger, J. Houston, J. Dutcher, C. Heller and D. Glaser, Gender differences in ship- and shore-based quality of life for Navy personnel . 102nd Annual Meeting of the American Psychological Association, Los Angeles, CA, 1994.

45. J. Dutcher and P. Craiger, Artificial intelligence in classification problems In P Craiger (Chair), Innovative applications of computers in industrial/organizational psychology research, Symposium conducted at the 102nd Annual Meeting of the Psychological Association, Los Angeles, CA, 1994.

46. J. Dutcher and P. Craiger, Human resources management: Organizations in transition, In P Craiger (Chair), Managing Change in the 21st Century Organization Paper accepted for the 102nd Annual Meeting of the American Psychological Association, Los Angeles, CA, 1994.

47. J. Houston and P. Craiger, Cultural diversity in the workplace: An integrated model, In P Craiger (Chair), Managing Change in the 21st Century Organization . 102nd Annual Meeting of the American Psychological Association, Los Angeles, CA, 1994.

48. E. Kerce and P. Craiger, Quality of life: An omnibus model In P Craiger (Chair), Managing Change in the 21st Century Organization Paper session presented at the 102nd Annual Meeting of the American Psychological Association, Los Angeles, CA, 1994.

49. P. Craiger and M. Coovert, Modeling dynamic social and psychological processes with fuzzy cognitive maps, . IEEE International Conference on Fuzzy Systems, Orlando, FL, 1994.

50. P. Craiger and M. Coovert, Discovering causal model implications with fuzzy cognitive maps: Help for the behavioral scientist, . World Congress on Neural Networks, San Diego, CA, 1994.

51. P. Craiger, Fuzzy cognitive maps and causal modeling . 9th Annual Conference of the Society for Industrial and Organizational Psychology, Nashville, TN, 1994.

52. P. Craiger and J. Houston. A causal model of Navy quality of life. 1st Academy of Management Research Methods Division Conference on Causal Modeling, Purdue University, West Lafayette, IN, 1994.

53. J. Houston and P. Craiger, A causal model of fairness in the workplace,1st Academy of Management Research Methods Division Conference on Causal Modeling, Purdue University, West Lafayette, IN, 1994.

54. P. Craiger and M. Coovert, A fuzzy system for mapping worker attributes to tasks . 26th Annual Conference of the Society for Computers in Psychology, Washington, DC, 1993.

55. P. Craiger, M. Coovert and M. Teachout, A comparison of additive versus direct product solutions for multimethod-multirater job performance data In C Smith (Chair), The psychology of method variance Symposium conducted at the 8th Annual Conference of the Society for Industrial and Organizational Psychology, San Francisco, CA, 1993.

56. P. Craiger and M. Coovert, Modeling team performance: Objects and streams Paper presented at 100th Annual Meeting of the American Psychological Association, Washington, DC , 1992.

57. M. Coovert, P. Craiger and M. Teachout, A comparison of additive versus multiplicative models for multitrait-multimethod data. 7th Annual Conference of the Society for Industrial and Organizational Psychology, Montreal, Quebec, 1992.

58. L. Penner and P. Craiger, The "altruistic personality" . 99th Annual Meeting of the American Psychological Association, San Francisco, CA, 1991.

59. P. Craiger and M. Coovert, The relationship between job experience and ratings of performance In M Teachout (Chair), Understanding the work experience construct in personnel research and practice Symposium conducted at the 6th Annual Conference of the Society for Industrial and Organizational Psychology, St Louis, MO, 1991.

60. M. Coovert and P. Craiger, Determining the dimensionality of work experience and the prediction of job performance In M Teachout (Chair), Understanding the work experience construct in personnel research and practice Symposium conducted at the 6th Annual Conference of the Society for Industrial and Organizational Psychology, St Louis, MO, 1991.

61. P. Craiger and L. Penner, The willingness to help AIDS victims: An experimental Investigation . 37th Annual Meeting of the Southeastern Psychological Association, New Orleans, LA, 1991.

PROFESSIONAL ARTICLES

1. P. Craiger and B. Burnham, Computer security. The Industrial and Organizational Psychologist, 23, 155-168, 2001.

2. P. Craiger, Traveling in cyberspace: Psychology of software design: Usability evaluation The Industrial and Organizational Psychologist, 21, 134-145, 2000.

3. P. Craiger, Traveling in cyberspace: Psychology of software design, Part 1 The Industrial and Organizational Psychologist, 21, 113-122, 1999.

4. P. Craiger and R. Weiss, Traveling in cyberspace: Speech recognition systems The Industrial and Organizational Psychologist 36, 79-86, 1999.

5. P. Craiger and R. Weiss, Traveling in cyberspace: Video-mediated communications The Industrial and Organizational Psychologist, 35, 83-92, 1998.

6. P. Craiger and R. Weiss, Traveling in cyberspace, the final frontier: An interview with Donald Norman The Industrial and Organizational Psychologist, 35, pp 21-29, 1998.

7. P. Craiger, Weiss, RJ (January, 1998) Traveling in cyberspace: The evolution of SIOP on

the web. The Industrial and Organizational Psychologist, 35, 13-15

8. P. Craiger and R. Weiss (October, 1997) Traveling in Cyberspace: Web-based instruction The Industrial and Organizational Psychologist, 35, 11-17

9. P. Craiger (January, 1997) Technology, organizations and work in the 20th century The Industrial and Organizational Psychologist, 36, 89-97

10. R. Weiss and P. Craiger (April, 1997) Traveling in cyberspace: Computer-based training The Industrial and Organizational Psychologist 34, 70-75

11. P. Craiger (October, 1996) Traveling in cyberspace: Computer mediated work The Industrial and Organizational Psychologist, 34, 14-18

12. P. Craiger and R. Weiss (July, 1996) Traveling in cyberspace: More Internet tools and services and Intranets The Industrial and Organizational Psychologist, 34, 16-23

13. P. Craiger and R. Weiss (April, 1996) Traveling in cyberspace: Internet tools and services The Industrial and Organizational Psychologist, 33, 13-17

14. P. Craiger (January, 1996) Traveling in cyberspace: Getting connected to the Internet and the World Wide Web The Industrial and Organizational Psychologist Pp 12-19

15. P. Craiger and R. Weiss (October, 1995) Traveling in cyberspace: The World Wide Web The Industrial and Organizational Psychologist, 33, pp 16-20

16. P. Craiger (July, 1995) Traveling in cyberspace: TIP on the World Wide Web The Industrial and Organizational Psychologist, 33, p 11

TECHNICAL REPORTS

1. P. Craiger, Structural Equation Models of Marine Corp Quality of Life US Army Scientific Services Program, Contract DAAH04-96-C-0086, 1999.

2. P. Craiger and R. Weiss, A comparison of mathematical models of the Navy Quality of Life Data US Army Scientific Services Program, DAL03-91-C-0034, TCN96217, 1997.

3. P. Craiger and M. Coovert, A model of the relationship between job experience and job sample test performance: Application of a neuro-fuzzy system (Report no F4162294P3620), Armstrong Laboratory, Brooks AFB, TX, 1994.

4. P. Craiger, R. Weiss, B. Butler and D. Goodman, Navy Quality of Life Predictive Model Project: Results of the second administration San Diego, CA: Navy Personnel Research and Development Center, 1995.

5. Dutcher, JSand P. Craiger, Navy Quality of Life Predictive Model Project: Results of the first administration San Diego, CA: Navy Personnel Research and Development Center, 1994.

6. M. Coovert and P. Craiger, Data analysis summary: Job experience assessment (Report no 10/DI-A-5023) San Antonio, TX: Air Force Human Resources Laboratory, 1990.

7. M. Coovert and P. Craiger, A graphical representation of the AAWC, IDS, EWS and TIC

positions with the VISTA programming tool (Contract DAAL03-86-D-0001) Orlando, FL: Naval Training Systems Center, 1992.

8. M. Coovert, J. Ford, P. Craiger, D. Sego, M. Quinones and J. Speer, Final report on research and development: Job experience and assessment (Report no 15/DI-S-30591) San Antonio, TX: Air Force Human Resources Laboratory, 1990.

9. M. Coovert, G. Campbell, P. Craiger, J. Cannon-Bowers and E. Salas, The conceptual application of Petri nets to the modeling of team performance Orlando, FL: Naval Training Systems Center, 1992.

10. C. Nelson, A. Kurtz, E. Gulitz, G. Hacker, M. Lee, P. Craiger, S. Roberts and A. Reno, The accuracy of behavioral surveys in predicting evacuation behavior: The Hurricane Elena study Tallahassee, FL: Florida Division of Emergency Management, 1988.

NEW COURSES DEVELOPED

1. CET 6xxx Intrusion Response Technologies (University of Central Florida)

2. CET 6xxx: Operating System and File System Forensics (University of Central Florida)

3. CET 4xxx: Information Security Processes (University of Central Florida)

4. CET 4885: Digital Investigative Technologies (University of Central Florida)

5. CET 3592: Linux Administration and Applications (University of Central Florida)

6. CET 4932: Current Topics in Computer Security (University of Central Florida)

7. CIST 4350: Technical Systems Administration (University of Nebraska @ Omaha)

8. CSCI 4380: Computer and Network Forensics (University of Nebraska @ Omaha)

9. CIST 4370: Security Administration (University of Nebraska @ Omaha)

10. CSCI 2980: Advanced Java Programming (University of Nebraska @ Omaha)

11. CSCI 2830: Java Programming (University of Nebraska @ Omaha)

12. CSCI 4360/8366: Computer Security (University of Nebraska @ Omaha)

13. CSCI 4260/8266: User Interface Design with Java (University of Nebraska @ Omaha)

14. CSCI 4250/8256: Human-Computer Interaction (University of Nebraska @ Omaha)

NEW PROGRAMS DEVELOPED

1. Master's of Science in Digital Forensics, 2005-07 University of Central Florida

2. Information Systems Technology Information Security Concentration, 2004-05, University of Central Florida

3. Information System Technology Concentration, College of Information Science and Technology, University of Nebraska @ Omaha, 2000-2002

4.Information Security Program, University of Nebraska @ Omaha,2001-2004.

PREVIOUS EMPLOYMENT

2000-2004 Associate Professor of Computer Science
College of Information Science and Technology
The Peter Kiewit Institute
University of Nebraska @ Omaha
Omaha, NE 68182

1996-1999 Assistant Professor of Computer Science
College of Information Science and Technology
The Peter Kiewit Institute
University of Nebraska @ Omaha
Omaha, NE 68182

1994-1996 Assistant Professor, Center for Management of Information Technology and
Department
of Psychology
University of Nebraska @ Omaha
Omaha, NE 68182

1999-2001 Senior Technical Scientist, 21st Century Systems
Responsibilities include human-factors contributions to distributed agent-enabled war fighting soft-
ware; writing proposals for Department of Defense RFPs; interfacing with government agencies (De-
partment of the Navy, DARPA, others)

PROFESSIONAL CERTIFICATIONS

1.Certified Information System Security Professional (CISSP), 2004

2.SANS GIAC Certified Computer Forensic Analyst (GCFA), 2004

3.American Society of Crime Labs/Laboratory Accreditation Board (ASCLD/LAB) Certified
    Inspector, 2004

4.SANS GIAC Certified Security Essentials (GSEC), 2003

5.EC-Council Certified Ethical Hacker (CEH), 2004

PROFESSIONAL AFFILIATIONS

1.Association for Computing Machinery (ACM) 1992-present

2.American Association of Forensic Scientists 2005-present

3. Digital Forensics Working Group 2002-present

4. International Federation of Information Professionals 9.11 Digital Forensics Group 2004-present

5. Anti-Phishing Working Group 2006-present

AWARDS AND PROFESSIONAL SERVICE

2007

1. Invited Speaker, Northwestern Law's annual Short Course for Prosecuting and Defense Attorneys\

2. Invited Speaker, Digital Forensics Working Group, Louisville, KY

3. Reviewer, Journal of Digital Forensics Practice

2006

1. Invited Speaker, State of Ohio Judicial ASTAR Program

2. Reviewer IFIP WG 11.9 2007 Conference

3. Reviewer Course Technology (2 textbooks)

2005

1. Reviewer, Handbook of Information Security

2. Reviewer, Course Technology (Textbook)

3. Reviewer IFIP WG 11.9 2006 Conference

4. Reviewer, International Journal of Human-Computer Studies 4

2004

1. NASA Faculty Research Associate

2. Reviewer, Handbook of Information Security

3. Reviewer IFIP WG 11.9 2005 Conference

2003

1. Reviewer, The Internet Encyclopedia

2. Reviewer, Journal of Information Sciences

3. NASA Faculty Research Associate

2002

1. NASA Faculty Research Associate

2. Course Technology Inc (Information Security publications)

2001

1. Invited Reviewer, National Science Foundation Information Technology Research (Computer-Human Interaction)

2. NASA Faculty Research Associate

3. Columnist for TIP, the official newsletter of the Society for Industrial and Organizational Psychology

2000

1. 2000 NASA Faculty Research Associate

2. Columnist for TIP, the official newsletter of the Society for Industrial and Organizational Psychology

1999

1. NASA Faculty Research Associate

2. Invited reviewer, National Defense Engineering and Science Fellowship Program, Cognitive and Behavioral Division

3. Reviewer, Decision Support Systems

4. Columnist for TIP, the official newsletter of the Society for Industrial and Organizational Psychology

1998

1. UNO Faculty Senate

2. Reviewer, Personnel Psychology

3. Reviewer, Journal of Applied Psychology

1997

1. 1997-00 UNO Faculty Senate

2. 1997-98 Reviewer, Personnel Psychology

3. 1996-98 Reviewer, Journal of Applied Psychology

4. Columnist for TIP, the official newsletter of the Society for Industrial and Organizational Psychology

1996

1. Reviewer, Journal of Applied Psychology

2. Voted Graduate Faculty Member

3. Reviewer for West Publishing Co

4. Columnist for TIP, the official newsletter of the Society for Industrial and Organizational Psychology

1995

1. Reviewer for the IEEE Transactions on Systems, Man, and Cybernetics

2. 1995-01 Columnist for TIP, the official newsletter of the Society for Industrial and Organizational Psychology

PERSONAL CERTIFICATIONS

2007

1. Dive Master, National Association of Underwater Instructors (NAUI) (in progress)

2. Full Cave Diver, National Association of Cave Divers (NACD)

3. Decompression Procedures, Technical Diving International (TDI)

4. Advanced Nitrox, Technical Diving International (TDI)

2006

1. Cavern Diver, Professional Association of Diving Instructors (PADI)

2. Rescue Diver, Professional Association of Diving Instructors (PADI)

2005

1. Advanced Open Water Diver, National Association of Underwater Instructors (NAUI)

2. Open Water Diver, Professional Association of Diving Instructors (PADI)

NABEEL YOUSEF, Ph.D.
University of Central Florida
Industrial Engineering and Management Systems
4000 Central Florida Blvd., Orlando, FL 32816
Office: 407-823 5104 • FAX: 407-823 3413
Email: nyousef@mail.ucf.edu

EDUCATION

- **Doctor of Philosophy in Industrial Engineering**
  University of Central Florida, College of Engineering, Orlando, FL, May 2006
  Focus Area: Supply Chain Management
  Dissertation: A Framework for Cost Modeling a Supply Chain

Advisors: Dr. Jose Sepulveda and Dr. Luis Rabelo

- **Master of Science**
  Industrial Engineering and Management Systems
  University of Central Florida, Orlando, FL, December 2002
  Focus Area: Simulation Modeling and Analysis

- **Bachelor of Science in Physics**
  Yarmouk University, Irbid, Jordan 1986
  Focus Area: Physics.
  Other Supported Areas: Computer Science and Electronics

ACADEMIC HONORS AND AWARDS

- First Simulation Scholarship, University of Central Florida, Fall 2002
- Industrial Engineering and Management Systems Appreciation Plaque, April 2006

PROFESSIONAL EXPERIENCE

Visiting Assistant Professor, August 2006 to Present
University of Central Florida, Department of Engineering Technology

Appointed As: Director of Information Technology and Infrastructure for NSF e-Design Center at the University of Central Florida, September 2006

Coordinator for Computer Applications, August 2005 to August 2006
University of Central Florida, Department of Industrial Engineering and Management Systems, Orlando, FL
- Coordinated the installation and setup of the department Computer Application Lab, the Advanced Simulation Lab and the conference room
- Coordinated the purchase and installation of equipment in the National Science Foundation (NSF Center for e-design) at the University of Central Florida
- Coordinated the setup of equipment in the Rapid Prototyping Lab
- Participated in the installation and training of Robotel System and smart board in the Lockheed Martin Lab at the College of Engineering and Computer Science
- Organize computer operations within the department using quality control
- Plan for resource provision
- Manage the department network backbone and servers
- Manage software installation and plan for future use and licensing
- Coordinate and plan for future and long term computer changes (updates, upgrades, new equipment)

- Coordinate communication between the department and other support units within the campus
- Manage department labs and room use
- Manage and track department acquisitions

Keys Accomplishment:
  - Saved the department $25k to $50k in annual expenditures
  - Developed new processes for high performance and quality service
  - Performed consistent problem solving in timely manner
  - Developed various skills including professional communication

Adjunct faculty, Fall 2003 and Fall 2004
University of Central Florida, Industrial Engineering and Management Systems Department
Orlando, FL
- Taught Industrial Engineering Applications for Computers EIN 4118

Programmer Analyst, 2003 to August 2005
Department of Industrial Engineering and Management Systems, University of Central Florida, Orlando, FL

Network Administrator, 2001 to 2003
Department of Industrial Engineering and Management Systems, University of Central Florida, Orlando, FL

Programmer Analyst, 1999 to December 2000
Graphtech Inc., Charlotte, NC
- Configured networks, servers and desktops for organizations and small businesses.
- Managed the personal computer systems production unit

Programmer Analyst, 1998 to 1999
Computek Inc., Charlotte, NC
- Database programmer and administrator
- Supervisor of Production and Quality

Physics and Computer Instructor
Kuwait, 1986 to 1990; Jordan, 1992 to 1996; Saudi Arabia 1996 to 1998
- Developed a broad array of teaching skills and adjust them to meet the needs of students
- Challenged students and evaluated them honestly and fairly
- Helped students to develop skills such as communication and critical thinking

PUBLICATIONS

Refereed Journal Publications

Luis Rabelo, Don Ariely, J. Vila and **N. Yousef**. "A Comparison of Learning Schemes for Recommender Software Agents: A Case Study in Home Furniture". Industrial Journal of Technology Marketing, Vol. 1 No. 1, 2005, P 95-114

Refereed Conference Proceedings Publications

Paul Fishwick, Zach Ezzel, **Nabeel Yousef**, David Miranda, Haluk Akin, Luis Rabelo, and Jose Sepulveda. Ontology-Centered Integration of Project Management, Cost and Resource Modeling with Analysis, Simulation and Visualization: A Case Study of Space Port Operations. Proceedings of the 2007 Winter Simulation Conference, Washington DC, December 9-12

Y. Hosni, A. Saka, J. Selter, **N. Yousef**, and L. Morse. "Training Disaster Simulators – A technology that Needs Management"; 16th International Conference on Management of Technology, Miami Beach, FL May 13-17, 2007.

Derek Craig, Christopher Crawford, **Nabeel Yousef**, Jose Sepulveda. "Using RFID Technology to Improve Health Care Service in Emergency Room". Industry Engineering & Management Systems (IEMS) Annual Conference. Cocoa Beach, Florida, March 12-14, 2007. Proceeding 2007, P 586-596

Nabeel Yousef, Abeer Sharawi, Adam Dalton, Sergio Quijada, Serge Sala-Diakanda, Luis and Jose Sepulveda "A Distributed Simulation Approach for Modeling and Analyzing Systems of Systems". Proceedings of the 2006 Winter Simulation Conference, Monterey, CA December 3-6

Nabeel Yousef, and Jose Sepulveda. "The effect of Emerging Technologies on the need for a Flexible Classroom Layout and Design." IIE Annual Conference 2006 (IERC) Orlando, FL, May 20-24

Nabeel Yousef, Jose Sepulveda and Luis Rabelo. "A Framework for Cost Modeling a Supply Chain: Concepts Definitions and Relationships." IIE Annual Conference 2006 (IERC) Orlando, FL, May 20-24

Abeer Sharawi, Adam Dalton, **Nabeel Yousef**, Sergio Quijada, Serge Sala-Diakanda, Luis and Jose Sepulveda. "Object Oriented Modeling Trends." IIE Annual Conference 2006 (IERC) Orlando, FL, May 20-24

Nabeel Yousef, Luis Rabelo and Jose Sepulveda. "Framework for Cost Modeling the Supply Chain Using ABC Costing". IFIP 5.7 Advances in Production Management Systems Conference. Rockville, MD, September 18-21, 2005

Nabeel Yousef, Luis Rabelo and Jose Sepulveda. "Cost Modeling the Supply Chain: Management Accounting Perspective". Industry Engineering & Management Systems (IEMS) Annual Conference. Cocoa Beach, Florida, March 14-16, 2005. Proceeding 2005, P 586-596

Nabeel Yousef, Ahmad Rahal and Renee J. Butler: "Using System Dynamics as an Educational Tool in Explaining the Supply Chain", Industry, Engineering, & Management Systems (IEMS) Annual Conference. CocoaBeach, Florida, March 15-17, 2004. Proceeding 2004, P 546-554

Nabeel Yousef, Ahmad Rahal and Luis Rabelo: "Study of the Inventory Oscillation Through the Supply Chain Using System Dynamics", Industry, Engineering, & Management Systems (IEMS) Annual Conference. CocoaBeach, Florida, March 15-17, 2004, Proceeding 2004, P 555-561

Nabeel Yousef, Jose Sepulveda, Hesham Mahgoub: "The Use of Simulation in Hot Mix Asphalt Trucking", IIE Annual Conference 2003 (IERC) Portland, Oregon May 17-21, 2003

Nabeel Yousef, Luis Rabelo, Joaquin Vila: "Personalization Using Software Agents Based on Fuzzy ARTMAP Neural Networks", IIE Annual Conference 2003 (IERC) Portland, Oregon, May 17-21, 2003

RESEARCH EXPERIENCE AND INTERESTS

- Current and Past Research Projects:

  - Redesigning the database for the office of Operational Excellence and Assessment Support, working as Project Leader: The objective of the project was to study and analyze processes used for programs assessments at the University of Central Florida and redesign the database needed to conduct the reviews for the results and plans for both academic and administrative programs and units. The project targeted the efficiency, quality and speed of retrieving information from the database. The project team used DOT NET to develop friendlier user interface that can be more efficient for faculty, chairs, deans and other administers.
  - Complete a trade study of existing commercial RTI solutions for vehicle and sensor fusion (PHASE 1), Lockheed Martin, working as CoPI: The project objective was to develop guidelines for interface requirements to LMCO provided models descriptions for vehicle, sensor and environment. Also to develop applicable test procedures and criteria to evaluate HLA-RTI's. This shall include developing measurable benchmarks and objectives. Time frame between December 2006 and March 2007.
  - System Integration (e-Design Project Funded by NSF) working as CoPI: The project objective is to Design and Integrated Planning and Management (IPM) framework embedded in distributed simulation platform to evaluate cost throughout the design process. The framework can evaluate enterprise level strategies to reduce cost, improve systems operability, and reduce product development risks. The framework aims to integrate and leverage product design with software agents, information technologies (IT), interoperability, and human-centered Computing (HCC) in a Web-based secured environment. The project started in 2004 and will be going until December 2007.

- o Traffic Study of North Gemini Boulevard and Greek Park Drive Intersection at the University of Central Florida (UCF) Campus (Transportation Project with the Department of Civil and Environmental Engineering and funded by UCf Parking and Transportation Services) Working as IT and lab consultant: The objective of the study is to determine whether there is a need for a traffic signal at that intersection or not. Project amount is $42k and the period of study and observation started March the 29th 2006 and will end in July 2006
- o Virtual Test Bed (Funded by NASA) working as IT consultant: The objective of the VTB project is to develop a new and unique collaborative computing environment where simulation models can be hosted and integrated in a seamless fashion. This collaborative computing environment will be used to build a "Virtual" Spaceport. This project will work as a technology pipeline to research, develop, test and validate R&D efforts against real time operations without interfering with the actual operations or consuming the operational personnel's time.
- o Dissertation Research: The objective of the research is to develop a framework that will integrate existing models to help in understanding and analyzing the cost through the supply chain. A framework for a cost model that can be used as a standard template in the supply chain cost management and optimization. The framework is able to track cost changes in a dynamic environment. Research framework aids in information sharing through organization and supply chain units.

- Specialized areas of interest include:
  - o Applied areas of Supply Chain Management and Cost Accounting
  - o Tools used in Supply Chain Cost Analysis and Decision Making such as Simulation Modeling and Analysis
  - o Information Systems Applications and Integration
  - o Information Technology, Computer Applications and Applied Database

ACADEMIC/TEACHING EXPERIENCE

- **Visiting Assistant Professor**, August 2006 to Present
  University of Central Florida, Department of Engineering Technology
  - ➢ Fall 2006: Taught IE Computer Application for Service Industry EIN 4545 and Statistics for Engineers STA 3032
  - ➢ Spring 2007: Taught Applied Database I CET 4427 and Applied Database II CET 4429
- **Adjunct Professor**
  University of Central Florida, Industrial Engineering Department Orlando, FL, Fall 2003 and Fall 2004.
  - ➢ Taught Industrial Engineering Applications for Computers EIN 4118 to classes averaging 30 students.

- **Secondary Education Instructor**
  Sarawat, Saudi Arabia, 1996-1998
  - ➢ Taught Physics and Computer Applications for all levels
  - ➢ Supervised science student groups
- **Secondary Education Instructor**
  Jabal Altag High School, Jordan, 1992-1996
  - ➢ Taught Physics senior level
- **Secondary Education Instructor**
  Abu Huleifa High, Kuwait, 1986-1990
  - ➢ Taught Physics senior level
  - ➢ Supervised lab applications and experimentation

COURSES TAUGHT

At the University of Central Florida:

- Applied Database I CET 4427

This course is intended to prepare students for database systems applications and will provide students with an in-depth understanding of theory, operation and application of modern databases.

- Applied Database II CET 4429

This course is intended to prepare students for database systems applications and will provide students with an in-depth understanding of the development of enterprise modern database systems. The Dot Net Framework and SQL Server Developer Edition will be used as a tool for the application and implementation of the course material

- IE Application for Service Industry EIN 4545

The objective of the class is to address the application of industrial engineering principles to improve the quality and productivity of service industries such as restaurants, banks, hotels, health care, etc.

- Probability and Statistics for Engineers STA 3032

The primary purpose of this course is to provide students with a basic understanding of fundamental probability and statistical principles, the underlying assumptions, the procedures for implementing them, and how to interpret them. The course will cover data collection and presentation, descriptive statistics, basic elements of probability theory, sampling techniques and theory, statistical estimation, hypothesis testing and an introduction to regression. Some elements of the course will require the use of statistical software for data analysis. The emphasis will be on problem setup & solution interpretation as well as using the tools in engineering applications.

- Industrial Engineering Application for Computers EIN 4118

The class addresses the use of computer application in problem solving for industrial engineers. The primary objective of this course is to familiarize the student with commercial software used in modeling problems found in managing production and

operations of industrial, service, and government organizations

Teaching Evaluation

Quantitative scores always exceed 80% on scale of 100

Secondary education from 1986 to 1998

- A high school teacher for physics and related laboratory work

TEACHING INTERESTS

- Information Systems and Information Technology
- Computer Application
- Supply Chain Management (Logistics)
- Simulation and Modeling
- Decision Making

DEPARTMENTAL SERVICE

- Search Committee Chair (Office Assistant Position) for the Department of Industrial Engineering and Management Systems, June and August 2005
- Search Committee Member (Accountant Position) for the Department of Industrial Engineering and Management Systems, May 2005

PROFESSIONAL SERVICE

- Director of Information Technology - IEMS Annual Conference 2006,Cocoa Beach, March 12-15
- Director of Information Technology - IEMS Annual Conference 2005,Cocoa Beach, March 14-16
- Information Technology Coordinator - IAB Conference. Orlando, Florida, December 5th - 7th , 2004
- Director of Information Technology - IEMS Annual Conference 2004, Cocoa Beach, March 15-17 http://www.csustan.edu/market/petrosky/track.html#dm
- Session Chair - IEMS Annual Conference, Cocoa Beach, March 15-17 2004
- Information Technology Coordinator - IAMOT Annual Conference 2004 Washington DC http://www.iamot.org/

- Information Technology Coordinator - IEMS Annual Conference 2003, Cocoa Beach, March 12-15, 2003
- Reviewer, IIE Annual Conference 2003
- Information Technology Coordinator - IEMS Annual Conference 2002, Cocoa Beach, March 8-11

COMMUNITY SERVICE

- Judge Advisor for The First Robotics Website Competition (Florida state wide) 2006 www.usfirst.org
- Judging The First Robotics Website Competition (Florida state wide) 2004 and 2005 www.usfirst.org
- Judging the IEMS Student Research Poster and Website Competitions 2004
- Host committee of the IIE Annual Conference 2002, Orlando, Florida

WORKSHOPS ATTENDED

- Military Simulation Techniques and Technology, DIST Inc. December 2002
- HTML, New Horizons August of 2000
- FrontPage 2000, New Horizons August of 2000
- Access Database, New Horizons August of 2000
- Hardware and Software Engineering Workshop, CompTIA February 2000 (included A+ examination and certification)
- Visual Basic Non-Seeking Degree Class, August 2000

PROFESSIONAL AFFILIATIONS

- Institute of Industrial Engineers (IIE)
- Central Florida Simulation Users Group

BAHMAN S. MOTLAGH

2161 Forrest Road
Winter Park, Florida 32789
(407) 823-4748
E-mail: bmotlagh@mail.ucf.edu

EDUCATION

Ph.D. Computer Engineering, University of Central Florida, May 1997.
M.S.Cp.E. Computer Engineering, University of Central Florida, May 1993.
B.S. Istanbul Academy of Sciences, Turkey, December 1977.

Ph.D. DISSERTATION

"A Replicated Concurrent-Read Architecture for Scalable Shared-Memory
Multiprocessing"
Advisor: Dr. Ronald F. DeMara

VISA STATUS

U.S. Citizen.

RESEARCH INTERESTS

Parallel Computer Architecture,
Performance Modeling and Evaluation,
High Speed Memory-Cache Design,
Barrier Synchronization.
Telecommunications
Information Technology
Computer & Networks Security

TEACHING INTERESTS

Computer Organization and Architecture,
Microprocessor-Based System Design,
Digital Systems,
Operating Systems and Data Structures,
Software Engineering,
Parallel Processing,
High Performance Computer Architecture.
Telephony
Local Area Networks
Wide Area Networks

RELATED WORK EXPERIENCE

Information Systems Technology Program Coordinator (January 1999-Present), Engineering Technology Department, University of Central Florida.

Associate Professor (2003 – Present), Engineering Technology Department, College of Engineering & Computer Science, University of Central Florida.

Assistant Professor (August 1997- 2003), Engineering Technology Department, University of Central Florida.

Visiting Faculty (January 1996-August 1997), Engineering Technology Department, University of Central Florida.

Research Assistant (summer 1995), Funded by Harris Computer Systems, Ft. Lauderdale, Florida. Cache Performance Model and Analysis of Nighthawk Multiprocessor Architecture.

Adjunct Faculty (January 1994 - December 1995), Electrical & Computer

Engineering (ECE) Department, University of Central Florida.Taught two undergraduate courses per semester, developed two new courses for initial offering.

Research Assistant (Summer 1993), Institute for Simulation and Training (IST), University of Central Florida. Performance evaluation of simulator package developed for U.S.Army.

Teaching Assistant (January 1993 - December 1993), ECE Department, University of Central Florida. Taught assembly language in classroom and conducted digital laboratories.

Consulting Engineer (1992 - 1996), Smart Access,Inc., Orlando, Florida. Involved with design of state machines, Hardware design and assembly programming.

Computer System Engineer (1986 - 1992), HESCO Engineering International, Miami, Florida. Computer system administration and configuration.

Computer Administrator (1981 - 1985), ERTVF,Inc., Atlanta,Ga. Automated tracking of forms and migrated to PC-based processing.

RESEARCH COMPUTING ENVIRONMENTS

Analysis and Report Generation Using:
     Matlab, Mathcad, Latex, Pspice, Deltagraph, Frammaker, and Lotus.
Simulators written in:
     C, C++, and ADA under uniprocessor UNIX and Nighthawk &
     n_cube multiprocessor operating system.

PROFESSIONAL AFFILIATIONS AND SERVICE

Institute of Electrical & Electronics Engineers (IEEE), Senior Member.
IEEE Professional activities committee chair, Canaveral Section 2006
Computer Chapter Vice chair, 2001-present.
Computer Chapter Chair, 1999-2001.
Chairman of the IEEE Canaveral Section, 1998-1999.
Vice Chairman of the IEEE Canaveral Section, 1997-1998.
Award committee chair, IEEE Canaveral Section, 1996-1997.
IEEE Computer Society, active member.
American Society for Engineering Education (ASEE), Member.
ASEE International Division Vice Chair, 2000-2001
ASEE International Division Secretary/Treasurer, 2001-2005
Accreditation Board for Engineering and Technology (ABET), Program Evaluator, 2001-Present.
Society for Information Management (SIM), Member
SIM - Orlando CIO Forum & Executive IT Summit, Executive Committee Member, December 2003 – present
American Information Technology Professionals (AITP), member
AITP – UCF Student Chapter Advisor
TAU ALPHA PI National Honor Society.

AWARDS AND HONORS

2004-05 UCF Teaching Incentive Program (TIP) Award
Research Award, Department of Engineering Technology, 1999-2000.
Recipient of Teaching Incentive Program (TIP) Award from the State of Florida, 1999-2000
College of Engineering Excellence in Undergraduate Teaching Award, University of Central Florida, 1999-2000.
IEEE Appreciation certificate for Excellence in Service, 2000
IEEE Appreciation Award for Computer Chapter, 2001
IEEE Certificate of Educational Achievement as an ABET/TAC program evaluator, 2001.
ABET Appreciation certificate for Excellence in Service

PUBLICATIONS

Refereed Journal Publications:

"Performance of Scalable Shared-Memory Architectures", **B. Motlagh**, R. DeMara, *Journal of Circuits, Systems, and Computers*, Vol.10, Nos. 1&2, 2000.

"Adaptive Numerical Methods with Arbitrary Fixed Samplings," A. Rahrooh**, B. Motlagh**, *Journal of Vibration and Control*, Volume 6, Number 2, 2000.

"Generalization and Application of Matrix Integrators," A. Rahrooh, **B. Motlagh**, *International Journal of Modeling and Simulation*, Volume 20, Number 3, May 2000.

Refereed Conference Proceedings Publications:

"Barrier Synchronization Techniques For Distributed Process Creation",Ron F. DeMara, **Bahman S. Motlagh**, IEEE *International Parallel Processing Symposium,* Cancun, Mexico, April 1994.

"Different Approach in Design and Analysis of an Instrumentation Amplifier", A. Rahrooh, W. Buchanan, **B. Motlagh**, ASEE Proceedings, Wahington, D.C., June 1996.

"A New Concept in Designing Future Multiprocessors", **B. Motlagh**, ASEE Conference, Milwaukee, June 1997.

"Memory Latency in Distributed Shared-Memory Multiprocessors", **B. Motlagh**, R. DeMara, IEEE *SouthCon Conference* Proceedings, 1998.

"Neural Network Adaptive Autotuner", A. Rahrooh, **B. Motlagh**, *ASEE Annual*

Conference Proceedings, June 1998.

"The Linear Integrated Circuits Laboratory at the University of Central Florida ", **B. Motlagh**, A. Rahrooh, The *Southeastern ASEE Annual Conference Proceedings*, April 1999.

"The Fundamental Digital Circuit Laboratory at The University of Central Florida**", Bahman S. Motlagh**, A. Rahrooh, the *ASEE 1999 Annual Conference proceedings*, June 1999.

"Effective Guidelines to Maximize Engineering Technology Laboratory Work Productivity," **Bahman S. Motlagh**, A. Rahrooh, the proceedings of the *IEEE International Conference on Engineering and Computer Education*, August 11-14, 1999, Brazil.

"A Scalable Replicated Concurrent-Read Architecture," **Bahman S. Motlagh**, Ronald F. DeMara, the *Fourteenth International Symposium on Computer and Information Sciences*, October 18-20, 1999, Izmir, Turkey.

"Adaptive Control Strategies for Robot Manipulator,", A. Rahrooh, Bahman Motlagh**, W. Buchanan, the *ASEE Annual Conference Proceedings*, June 2001.**

"Innovative Approaches for Teaching Calculus to Engineering Students,", Joby M. Anthony, A. Henry Hagedoorn, **Bahman S. Motlagh**, the *ASEE 2001 Annual Conference proceedings,*, June 2001.

"Redefining Education Methods Using New Technologies," Proceedings of the 2002 American Society for Engineering Education (ASEE) Annual Conference, June, 2002, Montreal, Quebec, Canada.

"The Re-Engineering of Engineering and Technology Education in the new Millennium,", **Bahman S. Motlagh**, Michele Shahir-Motlagh, proceedings of the seventh *International Conference on Engineering and Technology Education*, March 2002, Brazil.

"Re-defining Engineering Education Methods Using New Technologies,", **Bahman S. Motlagh**, Alireza Rahrooh, Nick Safai, *the ASEE 2002 Annual Conference proceedings*, June 2002.

"Redefining Traditional Methods in Engineering Education in the New

Millennium,", Bahman S. Motlagh, *ASEE/SEFI/TU Berlin International Colloquium*, October 2002.

"Preparing Future Engineering Technologists: Collaboration of Education and

Industry,", Lucy Morse, **Bahman S. Motlagh**, Jack Selter, *the CIEC 2003 Annual Conference*, January 2003.

"Innovative Technologies in the ET Curriculum", Bahman S. Motlagh, Alireza Rahrooh, Walter Buchanan, *the ASEE 2004 Annual Conference proceedings*, June 2004.

"Development of Goals, Objectives and Assessment Tools for the engineering & Technology Programs,", **Bahman S. Motlagh**, Alireza Rahrooh, ASEE/Tsinghua University, International Colloquium on Engineering Education, September 2004, Beijing, People's Republic of China.

"Adaptive PID Controller Using PC Matlab,", Alireza Rahrooh, Bahman S. Motlagh, Walter Buchanan, *the ASEE 2005 Annual Conference Proceedings*, June 2005.

"Crafting an International Road Map to Global Learning and Project Management", Bahman S. Motlagh, Michele Shahir-Motlagh, Alireza Rahrooh, *the ASEE 2007 Annual Conference proceedings*, June 2007.

"Offering a Distance-Based Course Using an Exponential Education Model", Ronald Eaglin, Bahman S. Motlagh, *the ASEE 2007 Annual Conference proceedings*, June 2007.

"Improving the Efficiency of Spam Filtering Through Cache Architecture", Ashok Khanal, Bahman S. Motlagh, Taskin Kocak, MaSCOTS 2007, *15th Annual Meeting of the IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems, Bogazici University, Istanbul, Turkey, October 2007.*

"Strategies for Engineering Education Utilizing Global Project Management Protocol", Bahman S. Motlagh, Ronald Eaglin, *the ICEE 2007, International Conference on Engineering Education Conference Proceedings, University of Coimbra, Portugal, September 2007.*

Research Reports:

"Tiered Barrier Synchronization Methods", **Bahman S. Motlagh**, Proceedings of IEEE Cape Canaveral Section, September 1995.

Technical Reports:

"The Linear Integrated Circuits Laboratory Manual,", **B. Motlagh**, A. Rahrooh, Used by all students in Electrical Engineering Technology, UCF, 1998.

"The Fundamental Digital Circuit Laboratory Manual,", **Bahman S. Motlagh**, A. Rahrooh, Used by all students in Electrical Engineering Technology, UCF, 1998.

Refereed Journal Articles Under Review:

"Benchmark Performance of Alternative Cache Coherence Strategies", **Bahman S. Motlagh**, Ronald F. DeMara, Submission Planned to: *Journal of Parallel and Distributed Computing,* Fall 2005.

Presentations at Scholarly Meetings:

"Barrier Synchronization Techniques For Distributed Process Creation", IEEE International Parallel Processing Symposium, Cancun, Mexico, April 1994.

"Tiered Barrier Synchronization Methods", IEEE Cape Canaveral Section, September 1995.

"Different Approach in Design and Analysis of an Instrumentation Amplifier", ASEE Proceedings, Wahington, D.C., June 1996.

"A New Concept in Designing Future Multiprocessors", ASEE Conference, Milwaukee, June 1997.

"Memory Latency in Distributed Shared-Memory Multiprocessors", IEEE SouthCon Conference, 1998.

"Neural Network Adaptive Autotuner", ASEE Annual Conference, June 1998.

"The Linear Integrated Circuits Laboratory at the University of Central Florida

", The Southeastern ASEE Annual Conference , April 1999.

"The Fundamental Digital Circuit Laboratory at The University of Central Florida**,** the ASEE 1999 Annual Conference, June 1999.

"Effective Guidelines to Maximize Engineering Technology Laboratory Work Productivity,", IEEE International Conference on Engineering and Computer Education, August 11-14, 1999, Brazil.

"A Scalable Replicated Concurrent-Read Architecture,", the Fourteenth International Symposium on Computer and Information Sciences, October 18-20, 1999, Izmir, Turkey.

"Adaptive Control Strategies for Robot Manipulator,", the ASEE Annual Conference , June 2001.

"Innovative Approaches for Teaching Calculus to Engineering Students,",
the ASEE 2001 Annual Conference, June 2001.

"The Re-Engineering of Engineering and Technology Education in the new
Millennium,", the seventh International Conference on Engineering and
Technology Education, March 2002, Brazil.

"Re-defining Engineering Education Methods Using New Technologies,",
the ASEE 2002 Annual Conference, June 2002.

"Redefining Traditional Methods in Engineering Education in the New

Millennium,", Bahman S. Motlagh, *ASEE/SEFI/TU Berlin International Colloquium*, October 2002.

"Preparing Future Engineering Technologists: Collaboration of Education and
Industry,", *the CIEC 2003 Annual Conference*, January 2003.

"Development of Goals, Objectives and Assessment Tools for the engineering &
Technology Programs,", *ASEE/Tsinghua University, International Colloquium on
Engineering Education*, September 2004, Beijing, People's Republic of China

"Strategies for Engineering Education Utilizing Global Project Management
Protocol", Bahman S. Motlagh, Ronald Eaglin, *the ICEE 2007, International
Conference on Engineering Education Conference Proceedings, University of
Coimbra, Portugal, September 2007.*

<u>**Reviewer for Journals and Conferences:**</u>

Journal of Vibration and Control
American Society for Engineering Education (ASEE)

RESEARCH/GRANTS CONDUCTED OR PROPOSAL SUBMITTED

1. Co-Investigator for NASA proposal to conduct series of seminars for NASA
   Employees. $19600 (funded)
2. Co-Investigator for a proposal to the National Science Foundation (NSF).
   $150000 (funded)
3. Co-Investigator for a proposal to Florida Board of Regents. $34000 (funded).

4. Received $17250 grant from International Engineering Consortium (IEC) to attend an international conference along with four of my students. April 30- May 3, 2001.
5. PI for Fire Mapping Project since Fall 2001($53000 funded).
6. PI for a proposal to Federal Government- Network Security, submitted Fall 2001.
7. Received $17,250 grant from International Engineering Consortium (IEC) to attend an international conference along with four of my students. March 8 - 12, 2003.
8. PI for a proposal to Volusia County Fire Services- Fire/Arson mapping Project ($20,000), Approved, Spring 2004.
9. PI for EDI and OFX project (FISERV), Spring 2004, $60,122. Funded.
10. PI for a proposal to the State of Florida- Fire Marshal's office – Fire/Arson mapping project, $ 84,000. declined.
11. PI for a proposal "An Innovative Approach in Locating and Managing Distributed Computing Resources", was submitted to NSF, declined.
12. Co-PI for a proposal "Information Systems Banner Center" was submitted to State of Florida, declined (all proposals were declined).
13. Co-PI for a proposal "IT education" partnered with Florida Community College in Jacksonville, Florida, submitted to State of Florida, declined

TEACHING

Comprehensive, multidisciplinary design and development of courses has been and continues to be done in order to meet diverse and rapid technological changes.

<u>Courses Taught or Developed</u>

EEL 4767 Computer System Design 1
EEL 3801 Introduction to Computer Engineering
EEL 4801 C Programming
EEL 4882 Engineering System Software
EEL 3342L Introduction to Digital Circuits Lab
CET 3323 Digital Technology
CET 2364   System Applications in C
CET 3198 Digital Systems
CET 3383 Applied Systems Analysis 1
CET 4523 Applied Systems Analysis 2
CET 4427 Applied Database 1
CET 4505 Applied Operating Systems 1
CET 4333 Computer Organization and Design
CET 4950 Senior Design Project
CET 3905 Independent Study

CET 4906   Independent Study
EET 3143   Electronic Devices and Circuits
EET 4518   Linear Integrated Circuits
EET 4915   Senior Design
EET 3905   Independent Study
CET 3752   Introduction to Telephony
CET 4483   Introduction to Local Area Networks Technology
CET 4748   Introduction to Wide Area Networks Technology
CET 4749   Wide Area Networks II
CET 3010   Introduction to Information Technology
MAC 2147 Mathematics for Calculus
MAC 2281 Calculus for Scientists and Engineers I
EGN 1006   Introduction to the Engineering Profession

Laboratories Developed

Digital Technology Laboratory
Linear Integrated Circuits Laboratory
Electronic Devices and Circuits (Revised)

CURRICULUM DEVELOPMENT

Bachelor of Science in Information Systems Technology
Minor in Secure Computing and Networks
Bachelor of Applied Science in Information Technology
Major revision in BSEET Computer Systems Curriculum
Master of Science in Technology – in process
Master of Science in Information Technology – in process
B.S. Information Systems Technology/Security
B.S. Information Systems Technology/Enterprise Systems
Minor in I2Tech: Health Concentration for IST/IT programs

SERVICE

1. CECS, International Committee member, 2007
2. CECS UPCC Committee member, 2007
3. CECS ABET Committee member, 2007
4. Chair, ENT ABET Preparation Committee, 2007
5. Chair, ENT Faculty tenure progress committee, 2006
6. Member of steering Committee, I2 Lab, 2006.
7. Member of Faculty Senate Information Technology Resource Policy Committee, 2003-Present

8. Member of the *Connecting the UCF Community Group* Committee, 2003-Present
9. Member of UCF *Undergraduate Policy and Curriculum Committee*
10. Member of Subcommittee for *Research in Excellence and Teaching* (Faculty Senate-UPCC)
11. Member of *Computer Focus Group* Committee, 1999 (University)
12. Member of steering committee to establish BS in IT program within Computer Science Department, 2000
13. Member of *Faculty Advisory Committee* for BCC and UCF Brevard campus (University)
14. Member of *COE Honors Program Committee*
15. Member of *Computer Users Committee*, College
16. Member of Engineering Technology *Curriculum Committee*
17. Member of Engineering Technology *Budget Committee*
18. Member of *TIP Criteria/Procedures Committee* (1997-98)
19. Member of *COE Honors and awards Committee* (1997-98)
20. Member of *Search Committee* for Engineering Technology Department (1997, 2000, 2004, 2005, and 2006)
21. Member of *TIP Selection Committee* (2001, 2002, 2006)
22. Chair of Search Committee for Engineering Technology Department – 2002.
23. IEEE Cape Canaveral Section, Executive Committee Member, 1996-present.
24. IEEE Cape Canaveral Section, Computer Chapter Vice Chair, 2001-present.
25. IEEE Cape Canaveral Section, Computer Chapter Chair, 1999-2001.
26. IEEE Cape Canaveral Section, Chair, 1998-1999.
27. IEEE Cape Canaveral Section, Vice Chair, 1997-1998.
28. IEEE Cape Canaveral Section, Award Committee Chair, 1996-1997.
29. ASEE International Division Vice Chair, 2000-2001.
30. ASEE International Division Secretary/Treasurer, 2001-present.
31. Accreditation Board for Engineering and Technology (ABET), Program Evaluator, 2001-Present.
32. Society for Information Management (SIM), Member
33. Orlando CIO Forum & Executive IT Summit, December 2002, Executive Committee Member.
34. Orlando CIO Forum & Executive IT Summit, December 2003 Executive Committee Member.
35. American Information Technology Professionals, member and UCF student chapter advisor.
36. Valencia Community College, Engineering & Technology advisory board member
37. Polk Community College, Information Technology advisory board

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DR. TARIG A. ALI
Assistant Professor, Department of Engineering Technology
College of Engineering and Computer science
University of Central Florida (UCF)
PO Box 162450, Orlando, FL 32816-2450
Tel: (407) 823-0741, Fax: (407) 823-4746, E-mail: taali@ mail.ucf.edu.

Education

- Ph.D. in Geospatial Science and Surveying Engineering, Dept. of Civil and Environmental Engineering and Geodetic Science, the Ohio State University, 2003.

- M.S. in Geospatial Science and Surveying Engineering, Dept. of Civil and Environmental Engineering and Geodetic Science, the Ohio State University, 1999.

- B.S. (Honors) in Civil Engineering, University of Khartoum, 1993.

RESAERCH INTEREST

GIS/LIS, GEOMATICS, GEOSPATIAL TECHNOLOGY, GIS DATA STRUCTURES, MOBILE AND INTERNET-BASED GIS APPLICATIONS, LIDAR MAPPING, WIDE-AREA GPS NETWORKS, COASTAL GIS, APPLICATIONS OF GIS/GPS/REMOTE SENSING (OPTICAL/MICROWAVE), APPLICATIONS OF GIS IN SOCIAL AND ENVIRONMENTAL SCIENCES.

RESEARCH PROJECTS

SPATIAL MODELING AND ANALYSIS OF THE GRAY FOSSILS. FUNDED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (2004-2006, CO-INVESTIGATOR):

The main goal of this project was to reconstruct the paleontological environment (paleoenvironment) at the Gray Fossil site TN. Spatial analysis and modeling have been used to study the correlation between some key variables to help reconstruct the paleoenvironment at the site. A Geographic Information System (GIS) was developed for the site to help with the efficient storage, retrieval, manipulation, and analysis of fossil data. This is essential in studying the interrelationships between the fossils of the different species found at the site.

Study of the Spatio-temporal Variation of the Level of the Atmospheric Water Vapor using ground-based GPS and GIS. Funded by East Tennessee State University. (2004-2006, Principal Investigator):

This research studied new techniques to robustly convert wet tropospheric delays into equivalent estimates of Water Vapor (WV). The resulted locations and WV measurements for the points in the study area have been analyzed using GIS. This research enabled not only the study of the spatio-temporal variation of the level of atmospheric WV, but provided a measurement system of atmospheric WV in the study area using only dual frequency ground-based GPS measurements.

Digitalization of Coastal Management and Decision Making Supported by Multi-Dimensional Geospatial Information and Analysis. Funded by NSF through the Digital Government Program. (2001-2003, Research Associate):

In this research we have developed the first spatio-temporal data model for inter-governmental agency operations able to take the dynamic nature of coastlines into account. Highly efficient, high-resolution space and airborne remotely sensed measurements and modeling and forecasting capability have supplied the spatial information that are used by government agencies at all levels in a coordinated fashion for coastal management and decision making. If successfully implemented, the project will significantly enhance the capability for handling spatio-temporal coastal databases, build a fundamental basis of coastal geospatial information for inter-governmental agency operations, and provide innovative tools for all level governmental agencies to increase efficiency and reduce operational costs. The research project has been carried out primarily in the Lake Erie coastal area and transferred to the second pilot site in Tampa bay area

Development of New GIS Quality Metrics for Linear Features. Funded by NSF through the Digital Government Program. (2002-2003, Research Associate):

The objective of this research was to provide a cost-efficient way to estimate the positional and attribute quality of linear features in GIS and Digital Mapping environment in order to enable the maintenance of appropriate levels of quality in the production of digital nautical charts and geo-spatial databases. The goals of this project were (1) development of appropriate metrics for the evaluation of the positional quality of linear features, (2) exploration of appropriate associated metrics to evaluate attribute accuracy, completeness, and logical consistency, and (3) development and implementation of a cost-efficient solution for the highly automated evaluation of positional accuracy of linear features.

Modeling Nutrient-enriched Sediment Transport during Coastal Erosion Processes. Funded by the Lake Erie Commission through a Lake Erie Protection Fund (1999-2001, Research Associate):

In this project a new approach to characterize and monitor the transport of nutrient-enriched sediments during coastal erosion processes was developed. The project site has been selected in Lake Erie coastal areas where farming using heavy phosphorus based fertilizer is practiced and severe coastal erosion has been taking place. The information of land use/farming and phosphorus distribution on the land were managed in a GIS. A new innovative model that quantitatively models soil transport in the coastal area during erosion processes was developed in which soil with a varying concentration of phosphorus and other agrochemicals was divided into triangular patches using TIN model. The soil transport and coastline changes caused by erosion processes were monitored by periodic high resolution satellite imagery (0.82 meter) and airborne images (centimeters) and used to calibrate the soil/contaminated sediment loss model. The discharge of nutrient-enriched sediments loaded into the lake has then been estimated through the new model. This model can be used as a fundamental basis for water quality management and coastal protection.

Publications

Ali, T. 2007, Conceptual Design of a Collaborative Web-based GIS for Coastal Land Use Planning, ASCE Journal of Planning and Development, in review.

Ali, T. 2007, Development of a New Geomatics Program at the University of Central Florida, Journal of Surveying and Land Information Science, in review.

Ali, T. **2006, Development of a New System for Evaluating the Positional Quality of Digital Shoreline Features, the proceedings of the American Congress on Surveying and Mapping (ACSM) Conference, Orlando, Florida, U.S.A., April 24-26.**

Ali, T. **and J. Nave 2005, Developing a GIS Database for the Gray Fossil Site, Tennessee, Based on Modern Surveying, Journal of Surveying and Land Information Science, 65(4), pp. 259-264.**

Ali, T**., J. Nave, and M. Clark 2005, A new Bachelor Degree Curriculum at East Tennessee State University, Journal of Surveying and Land Information Science, 65(3), pp. 195-200.**

Ramirez, R. and T. Ali **2005, Development of Quality Metrics for Linear Features, Journal of Surveying and Land Information Science, 65(2), pp. 105-110.**

Niu, X., R. Ma, T. Ali**, and R. Li 2005, Integration of Mobile GIS and Wireless Technology for Coastal Management and Decision Making, Journal of Photogrammetric Engineering and Remote Sensing, 71(4), pp. 453-459.**

Ali, T**. 2005, Study of the Correlation between the Mapped Shoreline-Change and Shoreline-Curvature, the proceedings of the American Congress on Surveying and Mapping (ACSM) Conference, Las Vegas Nevada, U.S.A., March 18-23.**

Niu, X., R. Ma, **T. Ali**, A. Srivastava, and R. Li 2004, On-site Coastal Decision Making with Wireless Mobile GIS, International Archives of Photogrammetry and Remote Sensing, Vol. 35(B2) "*Vol. XXXV(B2)*", pp. 1-6.

Ali, T. 2004, Analysis of the Relationship between Shoreline-Change and Shoreline-Curvature Based on the Geometric Representation of Shoreline in the Geographic Database, Journal of Geographic Information and Decision Analysis, 8(1), pp. 110-133

Ali, T., R. Ma, N. Xutong, V. Velissarou, K. Cheng, C. Kuo, X. Xu, and R. Li 2003, Spatio-Temporal Decision Making System for Coastal Change Monitoring and Management, Proceedings of the NSF National Conference for Digital Government Research, May 18-22, Boston MA, pp. 313-317.

Xutong, N., **T. Ali**, R. Ma, A. Elaksher and R. Li 2003, Implementation of a Coastal Decision Making System using Internet and Wireless Technologies, Proceedings of the NSF National Conference for Digital Government Research, May 18-22, Boston

MA, pp. 275-288.

Al-Ruzouq, R., **T. Ali**, R. Ma, and R. Li 2002, Digitalization of Coastal Management and Decision Making, Proceedings of the NSF National Conference for Digital Government Research, May 20-22, Los Angeles, CA, pp. 391-399.

Ali, T. 2004, On the Selection of Appropriate Interpolation Method for Creating Coastal Terrain Models from LIDAR Data, Proceedings of the American Congress on Surveying and Mapping (ACSM) Conference 2004, Nashville TN, U.S.A., April 16-21.

Ali, T. and J. R. Ramirez 2003, Metrics Development for Measuring Positional Accuracy of Spatial Data, Proceedings of the 21st International Cartographic Association Conference, CD media, Durban, South Africa.

Ali, T., R. Li, N. Xutong, R. Ma and A. Elaksher 2003, Development of a Web-based Mobile Spatial System for On-site Decision Making, Proceedings of the American Society for Photogrammetry and Remote Sensing (ASPRS) Conference, May 5- 9, Anchorage, Alaska, USA.

Ramirez, J. R. and **T. Ali** 2003, Development of Quality Metric System to Measure Positional Accuracy of Spatial Data, Proceedings of the 3rd International Cartographic Association Symposium on Digital Earth, September 21- 25, Brno, Czech Republic.

Ali, T., R. Ma and R. Li 2001, Assessment of the Variability of Phosphorus Intensity and Sediment Supply Profiles with Topography in a Lake Erie Coastal Area, Proceedings of the 4th International Symposium on Computer Mapping and GIS for Coastal Zone Management, June 18 - 20, Halifax, Nova Scotia, Canada.

Li, R., R. Ma, **T. Ali**, and Y. Felus 2001, Coastline Mapping and Change Detection Using One- Meter Resolution Satellite Imagery, Project Report submitted to Sea Grant/NOAA, 107p.

Li, R., **T. Ali**, and R. Ma 2001, Modeling Nutrient-Enriched Sediment Transport During Coastal Erosion Processes, Project Report submitted to Lake Erie Commission, 91 p.

Ali, T. and R. Li 2000, Spatio-temporal modeling of soil erosion and contaminated sediment Transport in Lake Erie coastal area, Proceedings of the American Society for Photogrammetry and Remote Sensing (ASPRS) Conference, Washington D.C., USA.

Conference Presenations

Ali, T**. 2006, Development of a New System for Evaluating the Positional Quality of Digital Shoreline Features, the American Congress on Surveying and Mapping (ACSM) Conference, Orlando, Florida, U.S.A., April 24-26.**

Ali, T. 2005, Study of the Correlation between the Mapped Shoreline-Change and Shoreline-Curvature, the American Congress on Surveying and Mapping (ACSM) Conference, Las Vegas NV, March 18-23.

Ali, T. 2004, On the Selection of Appropriate Interpolation Method for Creating Coastal Terrain Models from LIDAR Data, the American Congress on Surveying and Mapping (ACSM) Conference, Nashville TN, U.S.A., April 16-21.

Xutong, N., **T. Ali**, R. Ma, A. Elaksher and R. Li 2003, Implementation of a Coastal Decision Making System using Internet and Wireless Technologies, the NSF National Conference for Digital Government Research, May 18-22, Boston MA.

Ali, T., R. Li, N. Xutong, R. Ma and A. Alaksher 2003, Development of a Web-based Mobile Spatial System for On-site Decision Making, the American Society for Photogrammetry and Remote Sensing (ASPRS) Conference, May 5- 9, Anchorage, Alaska, USA.

Ali, T. and J. R. Ramirez 2002, Development of Metrics for Linear Quality Evaluation of Geo-Spatial Data, the North American Cartographic Information Society Conference (NACIS XXII), Columbus, Ohio, USA.

Al-Ruzouq, R., R. Ma, **T. Ali**, and R. Li 2002, Digitalization of Coastal Management and Decision Making, System Demonstration, the NSF National Conference for Digital Government Research, May 20-22, Los Angeles, CA, pp. 391-394.

Ali, T., R. Ma and R. Li 2001, Assessment of the Variability of Phosphorus Intensity and Sediment Supply Profiles with Topography in a Lake Erie Coastal Area, the 4th International Symposium on Computer Mapping and GIS for Coastal Zone Management, June 18 - 20, Halifax, Nova Scotia, Canada

Ali, T. and R. Li 2000, Spatio-temporal modeling of soil erosion and contaminated sediment Transport in Lake Erie coastal area, the American Society for Photogrammetry and Remote Sensing (ASPRS) Conference, Washington D.C., USA.

Invited Presentations

Ali, T. 2004, Analysis of the Relationship between Shoreline-Change and Shoreline-Curvature Based on the Geometric Representation of Shoreline in the Geographic Database, the American Shore and Beach Preservation Association Conference, New Orleans, Louisiana, U.S.A., September 14, 2004.

Ali, T. and R. Li 2002, Multi-dimensional Geo-spatial Information and Analysis, NOAA Great Lakes Environmental Research Laboratories, Ann Arbor, Michigan, U.S.A., July 9, 2002.

professional experience

Assistant professor, Dept. of Engineering Technology, University of Central Florida (UCF),   8/2006 – present Orlando FL

Working on the development of the curricula for two new degree programs in Engineering Technology at UCF with concentrations in GIS and Geomatics.

Assistant professor, Dept. of Technology and Geomatics, East Tennessee State University,   8/2003 – 7/2006 Johnson City TN

Preparing and delivering courses to graduate and undergraduate students in GIS, Geomatics, cartography, GPS, and digital imagery processing. Involved in the development of a new curriculum for the surveying and mapping science program.

Research Associate, Dept. of Civil & Env. Eng., The Ohio State Univ., Columbus OH   10/00 - 7/2003

Designed an analysis methodology and a GIS Web-based system for assessing future coastal erosion potential. Developed spatial metrics for automated shoreline quality assessment. Developed an Arc/Info GIS "Shoreline Quality System" to perform shoreline quality assessment. Project work in association with the GIS and Mapping Lab at OSU, developing GIS techniques and linking GIS and various types of models.

Research Fellow, the NOAA Great Lakes Environmental Research Labs. (GLERL), Ann Arbor   6/ 00 - 9/00 MI

Involved in modeling sediment re-suspension and transport dynamics in southern Lake Michigan as part of the episodic events research program at the GLERL labs. Worked on animating the spatio-temporal scenarios of the movement of the suspended sediments in the southern part of Lake Michigan using the Interactive Data Language (IDL).

Graduate Research and Teaching Associate, Dept. of Civil & Env. Eng., The Ohio State   8/97 - 5/00 Univ., Columbus OH

Performed GIS modeling using spatio-temporal approach to monitor soil erosion and contaminated sediment transport in Lake Erie southern coast. Implemented Arc/Info for data processing, change detection, and shoreline modeling. Helped in teaching various courses at the undergraduate and the graduate levels in the geodetic science and surveying program at OSU.

COMPUTER Skills

- <u>Platforms and Operating Systems</u>: UNIX, PC's & Workstations, Windows NT, Windows 2000 and Windows XP.
- <u>Programming Languages</u>: AML, AVENUE, Visual Basic, C++, and HTML.
- <u>GIS and Mapping-related Software</u>: Arc/View, Arc/Info, ArcIMS, ArcGIS, ArcSDE, ERDAS Imagine, Map/Info, and Trimble GPSurvey software.
- <u>Application Software</u>: MS Access, MS Excel, MS Word, MS Power Point, Adobe PhotoShop, Mat-Lab, MathCAD, and SQL.

AWARDS and Honors

- The 2006 ESRI Award for Best Scientific Paper in GIS, 3rd Place. *This award is presented annually to the best scientific paper in GIS published in the Photogrammetric Engineering and Remote Sensing Journal of the American Society for Photogrammetric and Remote Sensing (ASPRS).*
- The 2005 Faculty Excellence Award for Outstanding New Faculty, by the College of Business and Technology, East Tennessee State University.

- The 2004 Murrough P. O'Brien Educational Award, by the American Shore & Beach Preservation Association (ASBPA). *This award was presented to me for furthering the state of the coastal science through my PhD research.*
- The 2003 Duane C. Brown Jr. Award, by the Ohio State University. *The department presents this award annually to the PhD-student graduating top in his/her class.*
- The 2003 Student Research Paper Award, by the Ohio State University.
- The 2003 Student Research Development Fellowship, by the Ohio State University.
- The 2001 Student Research Paper Award, by the Ohio State University.
- NOAA Research Fellowship, Great Lakes Environmental Research Lab, Ann Arbor MI, June 2000.
- The 1999 Student Research Paper Award, by the Ohio State University.

PROFESSIONAL AFFILIATION
- Member of the Cartography and Geographic Information Society (CaGIS).
- Member of the American Society for Photogrammetry and Remote Sensing (ASPRS).
- Associate Member, Florida Surveying and Mapping Society (FSMS)
- Member of the American Association for Geodetic Surveying.
- Member of the American Shore & Beach Preservation Association (ASBPA)
- Member of the Board of Reviewers, International Journal of Modern Engineering.
- Reviewer, Journal of Engineering Technology.
- Reviewer, ASCE Journal of Surveying Engineering.

Graduate STUDENTS supervison
- Graduate students supervised:
  - Charlynn Buchanan, MS 2006 - Engineering Technology, East Tennessee State University.
  - Shannon Williamson, MS "expected to finish in 2008" - Engineering Technology, East Tennessee State University.

Dr. Ron Eaglin Resume and Curriculum Vitae

Address	College of Engineering and Computer Science University of Central Florida Orlando, Florida 32816 Office (407) 823-5937 Fax: 823-4746 Cell: (407) 497-9213 reaglin@mail.ucf.edu
Education	University of Central Florida Orlando, Florida Ph. D. Environmental Engineering, August 1993
	University of Central Florida Orlando, Florida M.S. Environmental Engineering, December 1991
	University of South Carolina Columbia, South Carolina B.S. Mechanical Engineering - Magna Cum Laude, May 1985
	South Carolina College Columbia, South Carolina Special Honors Degree, May 1985
Employment	University of Central Florida Orlando, Florida Chair of Engineering Technology College of Engineering (June 2000 - Present)
	University of Central Florida Orlando, Florida Assistant Dean for Distributed Learning College of Engineering (July 1996 – June 2000)
	University of Central Florida Orlando, Florida Visiting Assistant Professor (July 1995 - July 1996)
	Haestad Methods, Inc. Waterbury,Connecticut Senior Software Engineer (August 1994 - July 1995)
	University of Central Florida Orlando, Florida Research Assistant/Teaching Assistant (July 1989 - August 1994)
	United States Navy - Naval Nuclear Power School Orlando, Florida Nuclear Engineer/Lieutenant (June 1985 - July 1989)

Active and Complete Research Projects

Since starting work as an active researcher in 2000, I have slowly built a research program with an emphasis on performing quality research in areas that have a strong positive public impact. I have also built a strong research team that makes it possible to accomplish the over 2 million dollars of annual research that I am involved in. Two primary project in the last 5 years stand out; the FINDER project which is the development of a law enforcement data sharing network and SCINET, which is a full analysis of efficiency of county government along with business process realignment and software development.

PROJECTS   **BUDGET**

- PI, Magiquest, Plasma portal development, Creative Kingdoms $9975
- PI, Exploration of Document Management Options for Brevard County Florida, Brevard County FL $25,000
- PI, Development Enhancements for the FINDER Project, Law Enforcement Technology Program, $743,432
- PI, FINDER Deployment and Enhancement, COPS Program Grant, $145,000
- PI, MSBU Process Analysis and Development, Seminole County FL, $85,000
- PI, Seminole County Land File development, Seminole County Planning Department, $ 249,417
- Co-PI, FINDER Development: Law Enforcement Data Sharing State Grant, Florida
- Department of Law Enforcement, $525,000
- Co-PI, Development of analysis tools for the FINDER Application,
- National Institute of Justice, $300,000
- PI, Seminole County Integrated Network Software development project, Seminole County, $497,000
- CO-PI, Law Enforcement Data Sharing Consortium – FINDER Development,
- Various agencies, Annual recurring (approximately) $250,000
- Co-PI, Law Enforcement Data Sharing Consortium – Byrne Grant",
- Orange County Sheriff's Office, $91,258
- Co-PI, "EDI Automated Clearing House & OFX Server Projects", Fiserv, $60,122
- PI, "PSTC: Development of an Online Warrants System for Publishing Active Arrest Warrants",
- Central Florida Crimeline, $26,326
- PI, "Development of a Critical Incident Management System for Altamonte Springs
- Police Department, June 2003 $18,978
- PI, "Seminole County Integrated Services", $467,000, August 2003, complete
- Co-PI, "Development of a Distributed Data Sharing System for Law Enforcement"
- , May 2003, $79,803
- Co-PI "Orange County Sheriff's Office Crime Mapping System Enhancement
- and Multi-agency Regional Data-sharing Project", $612,370
- Co-PI "Drugnet Maintenance and Enhancement". $23,838
- Co-PI, "Development of a Fire Mapping System with Arson Component",
- National Center for Forensic Science, $54,000
- PI, "Development of a Rainfall Intensity Database for the USGS, RAINPLOT",
- United States Geologic Survey, January 2001 - ongoing, $68,878
- (extended for additional $7550 January 2002)   total $76,128
- PI, "Development of an Automated Reporting System for Pawn Shop Receipt Reports", $17,000
- Co-PI, "Information Sharing for the Florida Law Enforcement Partnership", May 25, 2000, $15,000
- Co-PI, "The Florida Department of Law Enforcement Drug Database Project", May 1, 2000, $250,000

Administration

My administrative tenure began in 1996 when I took an Assistant Dean position with the College of Engineering. The duties of this position included computer support, distance learning, and building management. The responsibilities centered on the goal of the College to establish a solid distance program. At the time I also was working with the retention program and was a key administrator in founding the freshman program in engineering creating two courses for freshman engineering. I was an invited speaker due to my expertise in the distance learning and retention on a nearly monthly basis while serving as assistant dean.

I became interim chair of Engineering Technology Department in 2000, eventually fulfilling the search and becoming permanent chair of the department. Statistics for the growth and success of the department since June 2000 are available on the ENT web site; ent.ucf.edu. The department had just over 160 students in 2000, and now currently has over 600 students and a much greater variety of programs. The quality of the faculty has increased dramatically, and the department is now working on MS programs.

A simple timeline of notable administrative work;

June 1996 – Took position as Associate Dean for Distributed Learning
June 2000 – Took over as interim chair of Engineering Technology Department
June 2002 – Became permanent chair of ENT department
Fall 2002 – Successfully completed ABET accreditation visit, accrediting all programs.
Fall 2005 – Completed program review with excellent results

Publications and Conferences

My publication record is quite diverse and reflects the many interests and opportunities that I have had in research. The interests have varied from retention where I was instrumental in setting up the retention programs for the College all the way to recent work on more complex algorithms to support the research work that I do.

- Ron Eaglin, Bhaman Motlagh; Offering A Distance Based Course Using an Experiential Education Model, ASEE Annual Conference, 2007
- Olcay Kursun, Anna Koufakou, Abhijit Waukchaure, Michael Georgiopoulos, Kennerth Reynolds, Ron Eaglin; ANSWER: Approximate Name Search with Errors in Large Databases by Novel Approach based on Prefix-Dictionary; International Journal of Artificial Intelligence Tools, October, 2006
- .Craiger, L. Ponte, C. Whitcomb, M. Pollitt, & R. Eaglin. Masters Degree in Digital Forensics. To appear in Proceedings of the 41st Annual Hawiian International Conference for Systems Science.
- Conference Proceeding: O. Kursun, A. Koufakou, B. Chen, M. Georgiopoulos, K.M. Reynolds, R. Eaglin, ANSWER: Approximate Name Search with Errors in Large Database Systems; IEEE Intelligence and Security Informatics Conference (ISI 2006)
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Teaching and Scholarship

The real reason I work as a professor is for teaching. I have taught an incredible diversity of classes and continue to have interests that range from highly technical courses to courses that have a high humanities content. Below are a sample of courses I have developed.

EGN 4931 – Honors Research Seminar - The objective of this course is to introduce honors students to the skills and though processes necessary to be a successful researcher. Research methods are covered along with writing, presentation methods, critical thinking skills, and teamwork. This course is a interdisciplinary course for engineers of all types and I have had Mechanical, Electrical, Civil, Environmental, Aerospace, and Computer Engineering students in this class.

CET 4583/CET 4584 Web Systems I and II – This 2 course sequence was originally taught at the graduate level, but I decided to seek courses status as a 400 level course for information technology and systems students. The course prerequisites are programming, and it is assumed that students have no prior experience with any type of web programming. Staring with html as a topic, the students progress to the point where they build a full 3-tier database system using a modern programming system (.NET or J2EE) with a professional back-end database (Oracle, SQL Server, or MySQL).

CET 4427/CET 4429 Applied Database I and II – These courses were developed as a result of interviews with our industrial review board. It was noted that even though the students had a solid background in data structures, their skills at building and maintaining real databases in an enterprise system were lacking. Students are required to master true database design, programming, structure, and maintenance skills in 2 database system (Oracle and SQL Server) for this 2 course sequence.

Though I no longer teach course in the field of water resources or civil engineering, I have taught course in hydrology, hydraulics, and water resources. In addition my background in Mechanical Engineering, Nuclear Engineering, and Mathematics allows me to teach in all of these fields.

I am also very interested in innovations in the field of teaching. These innovations are shown directly in the way that I utilize web materials, video recording and streaming, experiential learning, and service learning in a classroom environment. Direct links to developed materials for all of the teaching methods I use are at

http://ent.ucf.edu/personnel/faculty/Dr.Eaglin.html

Graduate Council Curriculum Subcommittee
Course Agenda 10-30-2007

College of Sciences Course Action Additions
Tabled at last meeting pending clarification of description.
BCH 6XXX **COS-Chemistry** **3(3,0)**
Advanced Biochemistry: PR: BCH 4053 and BCH 4054 or CI. ~~Graduate level~~ ~~biochemistry~~ Focus ~~ing~~ on enzymology, regulation and biochemical methods to study proteins.
30 character abbreviation: **Advanced Biochemistry**

REVISED DESCRIPTION: The new description should be " Biochemistry focusing on enzymology, regulation of the activity of enzymes and cellular chemical activity, and biochemical methods to study proteins."

CHM 6XXX **COS-Chemistry** **3(3,0)**
Tabled at last meeting pending deleting wording « web-based course. »
Atomic Spectroscopy: PR: CHM 3120 or CI. ~~Web-based course~~, Includes~~ing~~ theory and instrumentation for atomic absorption and emission spectroscopy with focus on their applications in various fields including forensic science.
30 character abbreviation: **Atomic Spectroscopy**