Graduate Council Curriculum Committee
November 9, 2016
2:30 p.m., Millican Hall 395E

Agenda

1. Welcome and call to order
2. Approval of the minutes from the last meeting (curriculum, course)
3. **Reactivation of CBA Economics MS, effective Fall 2017**
4. **Addition of the COS Big Data Analytics PhD, effective Fall 2018.** Associated new STA courses are in the Course Agenda.
5. No equipment fees to review
6. Materials and Supplies Fees Requests
7. Courses and special topics
8. Adjournment

Members of the Graduate Council Curriculum Committee

Kerry Purmensky, Chair, CAH
Charles Kelliher, CBA
Jim Moharam, Steering Liaison, COP
Elsie Olan, CEHP
Jennifer Sandoval, COS
Asli Tasci, RCHM
Art Weeks, CECS
Diane Andrews, CON
Steven Ebert, COM
Shuo "Sean" Pang, COP
Terrie Sypolt, LIB
Joshua Troche, COHPA
Andrea Pulido, GSA
John Weishampel, CGS Liaison

University of Central Florida

Graduate Program Recommendation Form - ADDITIONS ONLY

This form is to be used to **ADD** degree programs, tracks, or certificate programs. If there are tracks being added to the program, one form may be used for both the program and the track(s).

Please refer to the Graduate Council Curriculum Meeting Schedule for submission deadlines.

Checklist of items to be attached with completed form:

☐ Complete and current Graduate Catalog copy (www.graduatecatalog.ucf.edu), including description, curriculum, contact information, application requirements, and application deadlines.

☐ A list of faculty who will participate in the program, track or certificate and their credentials.

☐ If applicable, a written agreement from all involved units that they are in support of, will provide courses to, or will participate in the program, track, or certificate.

☐ Course Action Request forms, as needed.

☐ Library assessment of resources.

College/Unit(s) Submitting Proposal: COBA/Dept. of Economics

Proposed Effective Term/Year: Fall 2017

Unit(s) Housing Program: Department of Economics

Name of program, track and/or certificate: Master of Science in Economics

Please check all that apply: This action affects a: ☑ Program ☐ Track ☐ Certificate

DELIVERY: Program will be delivered: ☐ Face to Face ☐ UCF Online ☑ Mixed Delivery

Will the program be a **market tuition rate** program? ☐ Yes ☐ No

Will the program be a **cost recovery** program? ☐ Yes ☑ No

Brief description of program and rationale for the addition: **Do not add complete catalog copy here.**

Requesting to remove suspension of MS-Economics program and return in to active status in 2017-18.

Impact on Current Students

Will students be moved from an existing program, track, or certificate into this new program, track, or certificate? ☐ Yes ☑ No

If yes, state the name of the program or track where students are currently enrolled and attach a list of students if possible:

N/A

Will students have the option to stay in their existing program, track, or certificate? ☐ Yes ☐ No

If yes, how will current students be impacted by the addition of a program, track or certificate?

N/A

Future Students

Provide a statement of who is likely to enroll and why. Please state if there is licensure or certification that depends upon this education, etc. Also, complete the following table.

The program is intended for persons with bachelor's degrees in economics and others with adequate preparation in economics, mathematics and statistics.

	Year 1	Year 2	Year 3
Headcount	10	15	20
SCHs	300	450	600

Indicate likely career or student outcomes upon completion: (What will students do? What will their job titles be?)

Graduates of this program will work in analysis of business/economic data in firms, either locally, where there is great need, in the San Francisco or Seattle areas, or anywhere in the world for that matter, if they choose to relocate.

Please complete the following table on financial support: (Specify all forms of support – assistantships, fellowships, and tuition remission.)

	Number of assistantship students	Source of funds	Number of fellowship students (specify fellowship)	Number of tuition remissions	Source of funds
Year 1	10	Lecture capture	0	10	Lecture capture
Year 2	12	Lecture capture	0	12	Lecture capture
Year 3	12	Lecture capture	0	12	Lecture capture

Signature Page

Recommend Approval (all approval levels must be signed)

Graduate Faculty (Print) Harry J. Paarsch **(Signature)** Harry J. Paarsch **Date** 10/10/2016
Program Coordinator

Department Chair (Print) Mark Dickie **(Signature)** Mark Dickie **Date** 10/10/2016
/Director

College Academic (Print) Robert Porter **(Signature)** R Porter **Date** 10/25/2016
Standards

College Dean (Print) Taylor Ellis **(Signature)** Taylor Ellis **Date** 101/25/2016

Graduate Council (Print) _____ **(Signature)** _____ **Date** _____

Vice President for Research and Dean of the College of Graduate Studies

(Print) _____ **(Signature)** _____ **Date** _____

Approval

Provost and Executive Vice President _____ **Date** _____

Distribution: After approval is received from the Provost, distribution will be to:

University of Central Florida

Department of Economics

MEMORANDUM

TO: COBA MPRC
FROM: Mark Dickie, Chair
DATE: October 10, 2016
RE: Return of MS-Economics to active status and update of program

The Department of Economics seeks to remove the suspension of the MS in Economics program and to return the program to active status in academic year 2017-18.

Department faculty voted unanimously to support the reactivation of the program. I also support reactivation of the program.

There is a sufficient number of qualified students interested in the program, sufficient faculty to staff the program, and improved job opportunities for graduates. The program will take advantage of the rebuilding of qualified faculty in the department that has occurred over the past few years.

We are forwarding the Graduate Program Recommendation Form to the committee along with this memo.

Thank you for considering the reinstatement of the MS-Economics. Please contact me if I may provide more information.

College of Business Administration
P.O. Box 161400
Orlando, FL 32816-1400
407-823-3266 (FAX) 407-823-3269
www.bus.ucf.edu/economics

GRE scores will be rated as part of a comprehensive rubric evaluation of the candidates' overall graduate level competencies. Admission materials will be scored on a rubric (TBA) to quantify decision criteria.

Students who do not meet published admission requirements may be admitted provisionally and will be interviewed by a faculty program committee whose recommendations will be forwarded to the master's admission and retention committee in accordance with College of Education code for final admission action. Other admission factors that may be used in selecting students for provisional admission to the program are previous teaching experience or work (i.e., social service agencies) with pre-kindergarten or primary age children and their families.

Application Deadlines

Early Childhood Development and Education MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Applicants	Jan 15	Mar 1	Sep 1	Dec 15

CONTACT INFO

Anne Culp PhD
Chair
ece@mail.ucf.edu
Telephone407-823-0045
Department of Child, Family and Community Sciences
ED 209E

Economics MS

PROGRAM DESCRIPTION

The Master of Science in Economics degree program prepares students as economists for academic, governmental, business, and financial positions. The program provides students with the necessary theoretical and quantitative training to address current economic issues and problems in a thoughtful and rigorous manner.

Today's job market offers numerous opportunities to individuals with an advanced understanding of economic theory and methods. Individuals with a Master's degree in Economics may be employed in jobs that entail forecasting, market analysis, economic feasibility studies, commodity pricing, and environmental and natural resource considerations, to name a few.

CURRICULUM

The Economics MS program requires a minimum of 30 credit hours beyond the bachelor's degree. The program includes 12 credit hours of required courses, and from 12-15 credit hours of electives dependent on whether the student chooses the thesis option (6 credit hours) or the nonthesis option (6 credit hours).

All candidates for the MS degree must complete an end-of-program option. This requirement can be met by either pursuing a thesis option or a nonthesis research paper option. The nonthesis option requires 3 credit hours of Directed Research and 3 credit hours of another economics course. Students are then required to write and defend a research paper based on that research.

Total Hours Required:

30 Credit Hours Minimum beyond the Bachelor's Degree

Required Courses—12 Credit Hours

Fall Term

- ECO 6403 Mathematical Economics (3 credit hours)

- ECO 6206 Macroeconomic Theory I (3 credit hours)
- ECO 6118 Microeconomic Theory I (3 credit hours)

Spring Term

- ECO 6424 Econometrics I (3 credit hours)

Elective Courses—12-15 Credit Hours

Restricted Economic Electives—9-12 Credit Hours

Required courses must be completed before electives can be taken. A minimum of nine credit hours of economics electives is required. Other economics electives may be selected with the approval of the Graduate Program Director.

- ECO 6404 Games and Economic Behavior (3 credit hours)
- ECO 6505 Public Economics (3 credit hours)
- ECO 6705 International Economics (3 credit hours)
- ECO 6456 Experimental Economics (3 credit hours)
- ECP 6309 Survey of Environmental and Natural Resource Economics (3 credit hours)
- ECP 6405 Industrial Organization (3 credit hours)
- ECS 6015 Economic Development (3 credit hours)

The frequency of these economics elective course offerings vary.

Unrestricted Non-Economics Elective—0-3 Credit Hours

A maximum of three credit hours of a non-economics elective may be completed from disciplines such as finance, marketing, mathematics, statistics, computer science, and environmental engineering. This elective must be approved by the Graduate Program Director.

Thesis Option—6 Credit Hours

In the thesis option, the student must register for a total of six credit hours of ECO 6971 Thesis. The candidate fulfills this requirement by completing a formal thesis on a topic selected in consultation with the candidate's Thesis Advisory Committee, meeting both departmental and university requirements. The final examination consists of an oral examination over the thesis.

- ECO 6971 (6 credit hours)

Nonthesis Option—6 Credit Hours

In lieu of a thesis, one additional economics course must be taken along with three credit hours of ECO 6918 Directed Research. Candidates choosing this option will be required to write a comprehensive research paper on a topic selected in consultation with the candidate's Research Paper Advisory Committee. The final examination consists of an oral examination over the research paper.

- ECO 6918 Directed Research

INDEPENDENT LEARNING

A research paper or thesis is required of all students in the program.

APPLICATION REQUIREMENTS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate application requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Résumé.
- Three letters of recommendation.
- Essay.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

- Applicants applying to this program who have attended a college/university outside the United States must provide a course-by-course credential evaluation with GPA calculation. Credential evaluations are accepted from World Education Services (WES) or Josef Silny and Associates, Inc. only.

The following 12 credit hours of prerequisite course work (or their equivalents) must be completed before a student may be admitted to the MS program.

- ECO 4412 Econometrics or equivalent (3 credit hours)
- ECO 3410 Mathematical Economics or Calculus III (3 credit hours)
- ECO 3101 Intermediate Microeconomics or equivalent (3 credit hours)
- ECO 3203 Intermediate Macroeconomics or equivalent (3 credit hours)

Prerequisite work may be entirely or partially satisfied through prior equivalent course work. Normally, such course work must have been satisfactorily completed at a regionally accredited college or university, preferably one accredited by the Association to Advance Collegiate Schools of Business (AACSB). Prerequisite course work does not count toward the 30 credit hours required for completion of the MS degree.

The program is highly competitive and meeting the graduate admissions requirements is no guarantee of acceptance to the program. The program admits students only in the fall semester.

Application Deadlines

Economics MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jun 15		
Fall admission only.				
International Applicants	Jan 15	Jan 15		
Fall admission only.				
International Applicants	Jan 15	Mar 1		
Fall admission only.				

CONTACT INFO

~~Anne Culp PhD~~
~~Chair~~
~~ecc@mail.ucf.edu~~
~~Telephone407-823-0045~~
~~Department of Child, Family and Community Sciences~~
~~ED 209E~~

Harry Paarsch, Ph.D.
Chair
Harry.Paarsch@ucf.edu
Telephone: 407-823-1576
Department of Economics
BA2 305

University of Central Florida

Graduate Program Recommendation Form - ADDITIONS ONLY

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Please refer to the Graduate Council Curriculum Meeting Schedule for submission deadlines.

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☑ Complete and current Graduate Catalog copy (www.graduatecatalog.ucf.edu), including description, curriculum, contact information, application requirements, and application deadlines.

☑ A list of faculty who will participate in the program, track or certificate and their credentials.

☑ If applicable, a written agreement from all involved units that they are in support of, will provide courses to, or will participate in the program, track, or certificate.

☑ Course Action Request forms, as needed.

☑ Library assessment of resources.

College/Unit(s) Submitting Proposal: College of Sciences/Department of Statistics

Proposed Effective Term/Year: Fall 2018

Unit(s) Housing Program: Department of Statistics

Name of program, track and/or certificate: Big Data Analytics

Please check all that apply: This action affects a: ☑ Program ☐ Track ☐ Certificate

DELIVERY: Program will be delivered: ☑ Face to Face ☐ UCF Online ☐ Mixed Delivery

Will the program be a **market tuition rate** program? ☐ Yes ☑ No

Will the program be a **cost recovery** program? ☐ Yes ☐ No

Brief description of program and rationale for the addition: **Do not add complete catalog copy here.**

The proposed Ph.D. program in Big Data Analytics will train researchers with a statistics background to analyze massive, structured or unstructured data to uncover hidden patterns, unknown correlations and other useful information that can be used to make better decisions. The program will provide a strong foundation in the major methodologies associated with Big Data Analytics such as predictive analytics, data mining, text analytics and statistical analysis with an interdisciplinary component that combines the strength of statistics and computer science. The overall purpose of the proposed program is to produce Ph.D. level data scientists and data analysts who can contribute to industry, government and academia by way of innovative applications of existing techniques or original research in new statistical methods.

Impact on Current Students

Will students be moved from an existing program, track, or certificate into this new program, track, or certificate? ☐ Yes ☑ No

If yes, state the name of the program or track where students are currently enrolled and attach a list of students if possible:

n/a

Will students have the option to stay in their existing program, track, or certificate? ☐ Yes ☐ No

If yes, how will current students be impacted by the addition of a program, track or certificate?

n/a

Future Students

Provide a statement of who is likely to enroll and why. Please state if there is licensure or certification that depends upon this education, etc. Also, complete the following table.

Existing undergraduate and graduate students and UCF will enroll in this program as will students from other Florida institutions. There is no licensure or certification that depends on this degree.

	Year 1	Year 2	Year 3
Headcount	6	13	19
SCHs	102	222	288

Indicate likely career or student outcomes upon completion: (What will students do? What will their job titles be?)

Students will be employable in industry as data scientists, statisticians, management analysts, information technology project managers, and market research analysts and marketing specialists. They will also be employable in academia.

Please complete the following table on financial support: (Specify all forms of support – assistantships, fellowships, and tuition remission.)

	Number of assistantship students	Source of funds	Number of fellowship students (specify fellowship)	Number of tuition remissions	Source of funds
Year 1	5	E&G	0	0	N/A
Year 2	11	E&G	0	0	N/A
Year 3	16	E&G	0	0	N/A

Signature Page

Recommend Approval (all approval levels must be signed)

Graduate Faculty Program Coordinator (Print) James R. Schott (Signature) James R Schott Date 10/17/16

Department Chair /Director (Print) SHUNPU ZHANG (Signature) _____ Date 10/17/16

College Academic Standards (Print) Jana L. Jasinski (Signature) Jana L Jasinski Date 10/31/16

College Dean (Print) _____ (Signature) _____ Date _____

Graduate Council (Print) _____ (Signature) _____ Date _____

Vice President for Research and Dean of the College of Graduate Studies

(Print) _____ (Signature) _____ Date _____

Approval

Provost and Executive Vice President _____ Date _____

Distribution: After approval is received from the Provost, distribution will be to:

Ph.D. in Big Data Analytics

The proposed Ph.D. program in Big Data Analytics will train researchers with a statistics background to analyze massive, structured or un-structured data to uncover hidden patterns, unknown correlations and other useful information that can be used to make better decisions. The program will provide a strong foundation in the major methodologies associated with Big Data Analytics such as predictive analytics, data mining, text analytics and statistical analysis with an interdisciplinary component that combines the strength of statistics and computer science. It will focus on statistical computing, statistical data mining and their application to business, social, and health problems complemented with ongoing industrial collaborations. To this end, the scope of this program is specialized to prepare data scientists and data analysts who will work with very large data sets using both conventional and newly developed statistical methods. The curriculum includes 57 credit hours of course work in data mining, machine learning, statistics and optimization, matrix methods, as well as databases and data management; and a minimum of 15 hours in dissertation. The overall purpose of the proposed program is to produce Ph.D. level data scientists and data analysts who can contribute to industry, government and academia by way of innovative applications of existing techniques or original research in new statistical methods.

CURRICULUM

The Ph.D. in Big Data Analytics requires 72 hours beyond an earned Bachelor's degree. Required coursework includes 42 credit hours of courses, 15 credit hours of restricted elective coursework, and 15 credit hours of dissertation research.

Required Courses – 42 Credit Hours

- STA 5104 Advanced Computer Processing of Statistical Data (3 hours)
- STA 5703 Data Mining Methodology I (3 hours)
- STA 6106 Statistical Computing I (3 hours)
- STA 6236 Regression Analysis (3 hours)
- STA 6238 Logistic Regression (3 hours)
- STA 6326 Theoretical Statistics I (3 hours)
- STA 6327 Theoretical Statistics II (3 hours)
- STA 6329 Statistical Applications of Matrix Algebra (3 hours)
- STA 6704 Data Mining Methodology II (3 hours)
- STA 6714 Data Preparation (3 hours)
- STA 7xxx Statistical Learning Theory (3 hours)
- STA 7xxx Statistical Asymptotic Theory in Big Data (3 hours)
- CNT 5805 Network Science (3 hours)
- COP 5711 Parallel and Distributed Database Systems (3 hours)

Restricted Electives – 15 Credit Hours (at least 9 credit hours must be STA coursework)

- STA 6107 Statistical Computing II (3 hours)
- STA 6207 Response Surface and Mixture Experiments (3 hours)
- STA 6226 Sampling Theory and Applications (3 hours)
- STA 6237 Nonlinear Regression (3 hours)
- STA 6246 Linear Models (3 hours)
- STA 6346 Advanced Statistical Inference I (3 hours)
- STA 6347 Advanced Statistical Inference II (3 hours)
- STA 6507 Nonparametric Statistics (3 hours)
- STA 6662 Statistical Methods for Industrial Practice (3 hours)
- STA 6705 Data Mining Methodology III (3 hours)
- STA 6707 Multivariate Statistical Methods (3 hours)
- STA 6857 Applied Time Series Analysis (3 hours)
- STA 6xxx Spatial Statistics (3 hours)
- STA 7xxx Current Topics in Big Data Analytics (3 hours)
- STA 7xxx Survival Analysis (3 hours)
- STA 7xxx Bayesian Modeling and Computations (3 hours)
- STA 7xxx Dimension Reduction in Regression (3 hours)
- CAP 5610 Machine Learning (3 hours)
- CAP 6307 Advanced Text Mining I (3 hours)
- CAP 6315 Social Media and Network Analysis (3 hours)
- CAP 6318 Computation Analysis of Social Complexity (3 hours)
- CAP 6737 Interactive Data Visualization (3 hours)
- COP 5537 Network Optimization (3 hours)
- COP 6526 Parallel and Cloud Computation (3 hours)
- COP 6616 Multicore Programming (3 hours)
- COT 5405 Design and Analysis of Algorithms (3 hours)
- COT 6417 Algorithms on Strings and Sequences (3 hours)
- COT 6505 Computational Methods/Analysis I (3 hours}
- ECM 6308 Current Topics in Parallel Processing (3 hours)
- EEL 5825 Pattern Recognition (3 hours)
- EEL 6760 Data Intensive Computing (3 hours)
- ESI 5419C Engineering Applications of Linear and Nonlinear Optimization
- ESI 6247 Experimental Design and Taguchi Methods
- ESI 6358 Decision Analysis
- ESI 6418 Linear Programming and Extensions
- ESI 6609 Industrial Engineering Analytics for Healthcare
- ESI 6891 IEMS Research Methods
- ISM 6217 Advanced Database Administration (3 hours)

Other courses may be included in a Plan of Study with departmental approval.

All Ph.D. students must have an approved Plan of Study (POS) developed by the student and advisor that lists the specific courses to be taken as part of the degree. Students must maintain a minimum GPA of 3.0 in their POS, as well as a "B" (3.0) in all courses completed toward the degree and since admission to the program.

Dissertation – 15 hours

- STA 7980 Dissertation Research (15 credit hours)

Examinations

After passing candidacy, students will enroll into dissertation hours (STA7980) with their dissertation advisor. The dissertation can be either research- or project-based depending on the area of study, committee, and with the approval of the dissertation advisor.

Qualifying Examination

The qualifying examination is a written examination that will be administered by the doctoral exam committee at the start of the fall term (end of the summer) once a year. The courses required to prepare for the examination are STA 5703, STA 6704, CNT 5805, STA 6326, STA 6327 and COP 5711. Students must obtain permission from the Graduate Program Coordinator to take the examination. Students normally take this exam just before the start of their third year and are expected to have completed the exam by the start of their fourth year. To be eligible to take the Ph.D. qualifying examination, the student must have a minimum grade point average of 3.0 (out of 4.0) in all the coursework for the Ph.D. The exam may be taken twice. If a student does not pass the qualifying exam after the second try, he/she will be dismissed from the program.

Candidacy Examination

The candidacy exam is administered by the student's dissertation advisory committee and will be tailored to the student's individual program to propose either a research- or project-based dissertation. The candidacy exam involves a dissertation proposal presented in an open forum, followed by an oral defense conducted by the student's advisory committee. This committee will give a Pass/No Pass grade. In addition to the dissertation proposal, the advisory committee may incorporate other requirements for the exam. The student can attempt candidacy any time after passing the qualifying examination, after the student has begun dissertation research (STA7919, if necessary), but prior to the end of the second year following the qualifying examination. The candidacy examination can be taken no more than two times. If a student does not pass the candidacy exam after the second try, he/she will be removed from the program.

Admission to Candidacy

The following are required to be admitted to candidacy and enroll in dissertation hours.

- Completion of all coursework, except for dissertation hours
- Successful completion of the qualifying examination

- Successful completion of the candidacy examination including a written proposal and oral defense
- The dissertation advisory committee is formed, consisting of approved graduate faculty and graduate faculty scholars
- Submittal of an approved program of study

Dissertation

After passing the qualifying exam, the student must select a dissertation adviser. In consultation with the dissertation adviser, the student should form a dissertation advisory committee. The dissertation adviser will be the chair of the student's dissertation advisory committee. In consultation with the dissertation advisor and with the approval of the chair of the department, each student must secure qualified members of their dissertation committee. This committee will consist of at least four faculty members chosen by the candidate, three of whom must be from the department and one from outside the department or UCF. Graduate faculty members must form the majority of any given committee. A dissertation committee must be formed prior to enrollment in dissertation hours.

The dissertation serves as the culmination of the coursework that comprises this degree. It must make a significant original theoretical, intellectual, practical, creative or research contribution to the student's area within the discipline. The dissertation can be either research- or project-based depending on the area of study, committee, and with the approval of the dissertation advisor. The dissertation will be completed through a minimum of 15 hours of dissertation research credit.

Independent Learning

As will all graduate programs, independent learning is an important component of the Big Data Analytics doctoral program. Students will demonstrate independent learning through research seminars and projects and the dissertation.

APPLICATION REQUIREMENTS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline.

In addition to the general UCF graduate application requirements, applicants to this program must

provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A Bachelor's degree or its equivalent in statistics, data analytics or a related field from a regionally accredited institution or recognized foreign institution.
- Students should have a minimum cumulative GPA of 3.0 for all bachelor's level work completed.
- A competitive score on the combined quantitative and verbal sections of the Graduate Record Examination (GRE) or a competitive GMAT score taken within the last five years prior to admission to the program.
- A current curriculum vita.

- Three letters of recommendation that evaluate the applicant's academic performance, and their suitability and potential for undertaking doctoral studies. Letters should not be more than 12-months old at the time of application.
- International applicants whose first language is not English are required to submit results of the Test of English as a Foreign Language (TOEFL) or other equivalent test approved by the Graduate College, unless they hold a degree from a U.S. accredited institution. The TOEFL is strongly preferred. The minimum TOEFL score for full admissions consideration is 80 on the Internet based test (IBT), 220 on the computer-based test, or 575 on the paper-based test. The minimum IELTS score is 6.5. Applicants should plan to take the appropriate test no later than December to ensure consideration of their applications by the January 1 deadline.

Students admitted with an earned master's degree in statistics or data analytics from a regionally accredited institution or recognized foreign institution may be eligible to have up to 30 hours of their Ph.D. program waived without a course-by-course review of completed course work. In cases where a student's master's degree is in an area other than statistics or data analytics, a course-by-course review will be conducted and up to 30 hours of selected courses can be waived. If there are deficiencies in the student's master's degree program, the student may be required to take additional prerequisite or background courses in addition to the minimum course requirements (42 hours) of the program.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation by the department's Graduate Program Committee of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Application Deadlines

Big Data Analytics PhD	*Fall priority	Fall	Spring	Summer
Domestic Applicants	Jan 1	Jan 1	-	-
International Applicants	Jan 1	Jan 1	-	-
International Transfer Applicants	Jan 1	Jan 1	-	-
*Applicants who plan to enroll full-time in a degree program and who wish to be considered for university fellowships or assistantships should apply by the Fall priority date.				

FINANCIALS

Graduate students may receive financial assistance through fellowships, assistantships, tuition support, or loans. For more information, see the College of Graduate Studies Funding website, which describes the types of financial assistance available at UCF and provides general guidance in planning your graduate finances. The Financial Information section of the Graduate Catalog is another key resource.

Fellowships

Fellowships are awarded based on academic merit to highly qualified students. They are paid to students through the Office of Student Financial Assistance, based on instructions provided by the College of Graduate Studies. Fellowships are given to support a student's graduate study and do not have a work obligation. For more information, see UCF Graduate Fellowships, which includes descriptions of university fellowships and what you should do to be considered for a fellowship.

Big Data Analytics Ph.D.

Faculty Participation

- **Hsin-Hsiung (Bill) Huang**. Dr. Huang's scholarly interests and expertise include Bayesian clustering, classification, genome comparison, robust dimension reduction, and text categorization. His research addresses challenges in analyzing big data in bioinformatics and cybersecurity by developing and evaluating new statistical methods. Examples of his research projects include classifying multiple-segmented viruses, discovering the association of biomarkers and hypertension, as well as business intelligence classification. In addition, his doctoral research has been published in the Molecular Phylogenetics and Evolution, one of the best Bioinformatics journals.
- **Mark E. Johnson.** Dr. Johnson has received the Jack Youden, T. Saaty, Shewell (most recently in 2015) and Brumbaugh awards for his research. In 2014 he received the Shin Excellence in Research Award sponsored by The Geneva Association and the International Insurance Society, awarded June 2014, London ($5000.00 prize, joint with Randy Dumm and Charles C. Watson, Jr.) His publications have appeared in top tier journals such as Risk Analysis, Bulletin of the American Meteorological Society, Technometrics, J. of the American Statistical Association, Biometrics, J. of the Royal Statistical Society, Quality Engineering, J. of Quality Technology and J. of Forensic Sciences. Dr. Johnson is best known for his research on multivariate distributions, but has also contributed to discriminant analysis, optimal design of experiments, non-regular designs, simulated annealing, survival analysis, lack of fit measures and for applied statistical research in the context of applications, especially catastrophe and insurance loss modeling. Dr. Johnson is currently funded by Enkiops Corp. and the Florida Commission on Hurricane Loss Projection Methodology, with cumulative funding over $2 million.
- **Daoji Li**. Dr. Li's research interests include Big Data analytics, social networks, machine learning, data mining, and high-dimensional statistics. His papers have been published in top tier journals, including the Annals of Statistics. In 2006 Dr. Li received Overseas Research Students award from UK's Secretary of State for Education and Science. His research was funded by two grants from National Natural Science Foundation of China.
- **Liqiang Ni**. Dr. Ni's main research interests include dimension reduction in regressions, multivariate analysis, and bioinformatics. His publications have appeared in top tier journals such as J. of the American Statistical Association, Biometrika, J. of the Royal Statistical Society, and Statistica Sinica. In addition, Dr. Ni has done research in Psychology, Econometrics, and Forensic Science.
- **David Nickerson**. Dr. Nickerson has numerous refereed papers in mainstream statistics journals in the areas of sequential analysis and multivariate estimation and in journals related to biology and medicine regarding applications of statistical techniques. Most recently, he was the Biostatistician on an NINR grant studying intervention programs in middle school children, a Co-Investigator on a NIAMS/NIH grant studying gene therapy for arthritis and a PI on a sub-contract for a DOD grant studying gene therapy for post-traumatic osteoarthritis.

- **Edgard M. Maboudou**. Dr. Maboudou is best known for his research on Multivariate Statistics Process Control, but has also contributed to High Dimensional hypothesis testing, multiple change point problems, support vector/matrix data. Also, his accomplishment got international recognition accentuated by invitation to give talks in international statistical meetings such as in Ouro Preto, MG, Brazil and in Padua, Italy.
- **Alexander Mantzaris**. Dr. Mantzaris' research interests are in smart city analytics. The size of data and ubiquity of it allows us to not only look at averages of citizens but also investigate differences according to the spatial coordinates. New questions can be posed and answered about the nature of cross-city communication and affiliation. He is also continuing his work on community connectivity in large graphs constructed within the spheres of social media platforms.
- **James (Jim) Schott**. Dr. Schott published extensively in the area of multivariate analysis with articles appearing in journals such as Biometrika, the Journal of the American Statistical Association and the Journal of Multivariate Analysis. His specialties include dimensionality reduction techniques, principal components analysis, the analysis of correlation matrices and the analysis of high dimensional data. He is also an expert in matrix methods as they apply to statistics and has a text, Matrix Analysis For Statistics, now in its second edition in the Wiley Series in Probability and Statistics.
- **Nizam Uddin**. Dr. Uddin's publications have appeared in top tier statistics journals including Biometrika, Annals of Statistics, Journal of Statistical Planning and Inference, Statistica Sinica, Australian Journal of Statistics and numerous other journals in healthcare, transportation, and business areas. He has received the university Teaching Incentive Program award and a Research Incentive award. He has authored/co-authored over sixty research papers. Dr. Uddin's primary research is in Optimal Experimental Design. He has also contributed to interdisciplinary research projects of other colleagues within UCF and work on their externally funded projects. He was involved with research projects that resulted in cumulative funding of approximately $1.5 million.
- **Chung-Ching (Morgan) Wang.** Dr. Wang has published one book (Integrating Results through Meta-Analytic Review Using SAS Software, SAS Institute, 1999), and over 80 papers in refereed journals and conference proceedings on topics including interval analysis, meta-analysis, computer security, business analytics, health care analytics and data mining.
- **Mengyu Xu**. Dr. Xu's research focuses on the statistical inference of big data. Her work investigates the estimation of covariance matrix, its inverse and linear functions for high-dimensional time series, as well as the inference of high-dimensional time-varying networks. She also studied the methods and theory of the asymptotic distribution of quadratic forms for high-dimensional data. Applications include high-dimensional tests and heterogeneity test of massive data.
- **Xin Yan**. Dr. Yan is a biostatistician with specialization for the design and analysis of clinical trials in various therapeutic areas including oncology, cardiovascular diseases, pulmonary diseases, hematology, and vaccines. Dr. Yan's publications have appeared in top tier journals such as Statistics in Medicine, Statistics in Biopharmaceutical Research, Journal of Statistical Association, Statistical Computing and Graphics, Journal of Multivariate Analysis, Journal of Machin Learning, etc. He is the author of the graduated textbook Linear Regression, Theory and Computing (2009) published by World Science Book Publisher. Dr. Yan has served as primary consulting

biostatistician on over 80 randomized controlled clinical trials. Dr. Yan actively serves as biostatistics expert in many medical research projects. He has received funding from UCF COS seed funds on Clinical Validation Study of a New Molecular Test for Aggressive Prostate Cancer Screening ($45,000), NIH (2014-2018) on Oral Suction Protocol Intervention to Reduce Aspiration and Ventilator-events ($2,400,000), NINR (2015-2018) on Promoting Cancer Symptom Management in Older Adults ($470,000). In addition, he has jointly submitted with researchers in medicine/biology/healthcare more than 15 external proposals since joining the UCF.

Shunpu Zhang. Dr. Zhang's research interests cover a wide range of topics that include general statistical methodology, empirical Bayes data analysis, bioinformatics, large scale multiple hypothesis testing and its application to genomics, statistical methods related to influenza virus genotyping and developing computationally intensive algorithms for analyzing biological and health survey data. Dr. Zhang's publications have appeared in top tier journals such as Journal of American Statistical Association, Journal of Statistical Planning and Inference, Annals of the Institute of Statistical Mathematics, Statistical Applications in Genetics and Molecular Biology, BMC Bioinformatics, Bioinformatics, Journal of Computational Biology, Genetic Epidemiology and Statistics in Medicine. He has also worked in big data analytics. Dr. Zhang is also actively involved in obtaining external funding. He has had several funded research projects, including an NIH project to develop a genotyping system for identifying highly pathogenic H5N1 Influenza virus.

UCF Stands For Opportunity

MOU FOR DATA ANALYTICS

Date: March 22, 2015

To: A. Dale Whittaker, Provost and VP for Academic Affairs

From: Michael Georgiopoulos, Dean, College of Engineering and Computer Science

Signature: _____

Gary T. Leavens, Chair, Department of EECS – Computer Science division

Signature: _____

Michael Johnson, Dean, College of Sciences

Signature: _____

David Nickerson, Chair, Department of Statistics

Signature: David M. Nickerson

Paul Jarley, Dean, College of Business Administration

Signature: _____

Taylor Ellis, Associate Dean, College of Business Administration

Signature: _____

Subject: Degree Programs in Data Analytics: Differences and Relationships

In this memorandum of understanding, we seek to clarify the differences and relationships between the degree programs we are proposing in data analytics. After explaining the differences and relationships between these degree programs, we offer some promises that we make about their future evolution.

Differences

In essence, the three degree programs have different focus areas and target audiences.

MS in Data Analytics from Computer Science and Statistics

This MS degree program that is being jointly proposed by Computer Science (CS) and Statistics is focused on workforce training for technical positions. It aims to train people to develop algorithms and computerized systems for discovery of information from big data. This includes the architecture of systems and programs, as well as technical details of algorithm development. Students are expected to be able to write and maintain novel computer programs that make efficient use of cutting-edge computer technology.

Compared to the Ph.D. in Data Analytics being developed by Statistics, students would not be expected to discover and prove new statistical results, and would not be expected to publish original research on statistical techniques.

Compared to the MS in Business Analytics, the aim of the program is not to educate business managers who can interpret the results of analytical studies. Instead, the goal of the MS in Data Analytics from CS and Statistics is instead to develop technical skills.

MS in Business Analytics from College of Business Administration and Statistics

This MS degree program is being jointly proposed by the College of Business Administration and the Department of Statistics. Its goal is to train managers to be the "*bridge* between complex processing methods and the information in data being applied to business problems and decisions." The focus is primarily on training managers who can supervise data analysts and understand how to apply the results of big data analytics.

Compared to the CS/Statistics MS in Data Analytics, this program does not emphasize technical aspects of creating computer programs or computer systems to perform analysis. Instead the goal is to train managers to interpret the results generated by such technical professionals.

Compared to the Statistics PhD program this is a workforce training degree. Students would not be expected to discover and prove new statistical results, and would not be expected to publish original research on statistical techniques.

PhD in Data Analytics from Statistics

This PhD program is being developed by the Department of Statistics. The goal is to train researchers in Statistics to discover new statistical techniques for prediction, hypothesis testing, and to investigate optimality of statistical methods. Research, new technical results, and publication will be emphasized.

Compared to the MS in Data Analytics being developed jointly by Statistics and CS, this degree program assumes and produces students who are more sophisticated researchers. Unlike that MS degree program, this is not a workforce training program, but a program aimed at advancing knowledge of statistics in the area of big data. While students in that MS program may be expected to apply standard statistical results to develop new algorithms for specific purposes, unlike the Statistics PhD students, those MS students would not be expected to develop new statistical techniques or to investigate their statistical validity and optimality.

Compared to the MS in Business Analytics being developed jointly by Statistics and the College of Business Administration, this PhD program is not a workforce training program. Instead of being aimed at training business managers, it is aimed at training the next generation of statisticians. These statisticians will develop fundamental statistical results rather than apply existing results to solve business problems. The PhD program will not train students in management skills.

Relationships and Synergies

All of these degree programs share some common basis in data analytics. We also indicate areas of potential overlap.

Common Basis in Big Data Analytics

The common technical basis for these degree programs is big data analytics. This involves techniques for extracting knowledge for large amounts of information that are collected automatically through computerized processes. This technical basis includes various statistical techniques and an understanding of what is possible with computer systems in terms of the time and space needed to collect, store, process and prepare data. All students will acquire a basic understanding of this technical basis.

In addition, students in all degree programs need to understand how to validly interpret data, in order to obtain actionable knowledge from large quantities of information. This is important especially for the MS in Business Analytics, but this understanding is also valuable for the other degrees as well, in order that the technical professionals may understand the significance and utility of the knowledge that can be produced from big data and that the doctorate masters this baseline of expertise to advance the field.

Potential Areas of Overlap

The main area for potential conflicts is between the MS in Data Analytics and the PhD in Data Analytics; it concerns the design and development of algorithms for extracting knowledge from big data. Such algorithms are very important for computing (in the MS degree program), and may also be developed as part of the PhD degree program. However, the MS degree program will primarily not be training students to develop algorithms that are novel, publishable results. Furthermore, the MS degree program's students will not primarily be training students to develop algorithms that rely on a deep understanding of statistical theory and mathematics. Conversely, the PhD program will focus on training students to develop novel, publishable results and will focus more on deep applications of statistical and mathematical theory.

Overlap of faculty research areas will result in opportunities for collaboration on research and applications. For example, faculty from Statistics and Computer Science can collaborate on novel algorithms to implement new statistical techniques, and both Statistics and Computer Science faculty can work with faculty in Business to solve practical problems that arise in business. Thus having these three degree programs will facilitate hiring of faculty that can collaborate to produce new research and generate new grant and contract funding.

The other area of overlap will be in resources, particularly at the UCF library. Books and journals in big data analytics may be useful to all degree programs, to expand the knowledge and background of the

students and faculty teaching in those programs. Computer systems and software for research and teaching can also be shared among these programs by the units involved.

Promises about the Future Evolution of these Degree Programs

We promise that these degree programs and academic units will cooperate to avoid duplication of effort and to share costs and opportunities. In particular we promise that we will:

- Consider requests to let students in other degree programs take courses offered in our degree program(s).
- Consider requests to teach courses for other degree programs in our areas of expertise.
- Refer potential partners to other units if these partners require expertise from outside our unit that is available in other units.
- Share resources and the costs of obtaining these resources fairly.
- Support creation of new courses that are appropriate for these other degree programs.
- Encourage and support students toward the degree that supports their area of professional and academic growth.

University of Central Florida

To: Dr. Shunpu Zhang, Chair, Statistics
Mr. Barry Baker, Director of Libraries
Ms. Mary Page, Associate Direction of Collections & Technical Services, UCF Libraries
Ms. Ying Zhang, Head, Acquisitions and Collections, UCF Libraries

From: Patti McCall, Physical & Life Sciences Librarian

Subject: Library Evaluation for the proposal for the PhD in Data Analytics

Date: Sept 23, 2016

This memorandum is being submitted for your review and approval. As library resources are essential for any new program, an analysis of library holdings (monographs, periodicals, and databases) was conducted to assist in preparing a program proposal for the new PhD in Data Analytics at the University of Central Florida. The following review was created by Patti McCall, Physical and Life Sciences Librarian and is intended to serve as a means for evaluating the strength of current holdings of the UCF Libraries for supporting the proposed program. When reviewing library support for the new PhD in Data Analytics in the College of Sciences, Departments of Computer Science and Statistics, the following institutions were selected for comparison:

- Massachusetts Institute of Technology (MIT)
- University of Pittsburgh (PITT)
- Kennesaw State University (KSU)

All three institutions offer similar PhD programs, focusing on data analytics. The Kennesaw State University program was newly launched in Fall, 2015.

Costs: Although the library has a solid collection the field of Data Analytics, the field is still new and evolving. As such, it is recommend that **$3,000** be allocated for the **next five years** (for a total of **$15,000**) to the purchase of new print and electronic materials to keep current with the research in the field. This amount is requested to address the needs of the PhD in Data Analytics and is needed to purchase books, ebooks, and new research in both data analytics and business data. At the end of the five year period of departmental support, permanent funding will need to be transferred to the Libraries to ensure continued support of the Data Analytics program.

Databases: UCF Libraries' list of databases compares favorably with that of the other institutions with one major exception. All three institutions have access to Scopus, a heavyweight in the field of scientific/STEM literature that is a citation database of nearly 22,000 peer reviewed journals, books, and conference proceedings from thousands of publishers. Scopus is a major resource that is used heavily by researchers in many disciplines, particularly the sciences and related fields and ideally, UCF, being a large research institution, should have access to Scopus as well. In the event of sever budget shortfalls it may be necessary to cancel existing database subscriptions.

Institutional Comparison--Databases	UCF	MIT	PITT	KSU
Scopus		x	x	x
Science Direct	x	x	x	x
ACM Digital Library	x	x	x	x
Web of Science	x	x	x	x
IEEE Xplore	x	x	x	x
ABI/Inform	x	x		x
Applied Science	x	x		
Computer & Information Abstracts	x			
Current Index to Statistics	x			
INSPEC	x	x	x	
Electronics & Communications Abstracts	x	x		
MathSciNet	x	x	x	x

Journals: UCF's journal listing compares favorably with other institution. Although the field is relatively new, UCF does have access to key titles though print, database and open access resources. UCF currently has access to several publisher journal packages through Sage, Springer, Science Direct, and Wiley. In the event of severe budget shortfalls it may be necessary to cancel existing subscriptions. The journals to which we currently subscribe are as follows:

Institutional Comparison--Journals	UCF	MIT	PIT	KSU
Big Data	X	X	X	
Chance	X	X	X	X
Decision Analytics	X		X	X
Data Storage	X	X	X	
EPJ Data Science Journal	X	X	X	X
Health Information Management	X	X	X	X
IEEE Transactions on Knowledge and Data Engineering	X	X	X	X
Information and Organization	X		X	X
Information Economics and Policy	X		X	
Information Knowledge and Systems Management	X	X		
Information Strategy	X	X	X	X
Information Systems Research	X	X		X
Info Trend	X		X	
Information Visualization	X	X	X	
Intelligent Data Analysis	X	X	X	X
International Journal of Big Data	X			
Journal of Intelligent Information Systems	X		X	X

Journal of Targeting, Measurement, and Analysis for Marketing	X		X	X
KAIS: Knowledge and Information Systems: An International Journal	X	X	X	X
Machine Learning	X	X	X	X
Statistical Analysis and Data Mining	X		X	
Wiley interdisciplinary Reviews: Data Mining and Knowledge Discovery	X	X	X	X

Books: Given the interdisciplinary nature of data analytics/data science, UCF has good coverage on the subjects related to the data, but will need to keep up with the new publications especially focusing on data analytics and advanced level of research in statistical methods on data.

Institutional Comparison--Books	UCF	MIT	PITT	KSU
Linear Models	175	409	165	33
Statistical Methods	212	6396	50	1061
Probability Theory	349	1025	50	65
Multivariate Analysis	715	521	480	95
Big Data	61	266	136	39
Data Mining	1211	1463	886	239
Data Warehousing	227	252	132	67
Informational Visualization	127	236	127	45
Database Design	434	445	264	240
Data Structures	315	782	264	296
Prediction Theory	87	92	54	10

APPENDIX B

Please include the signature of the Equal Opportunity Officer and the Library Director.

Signature of Equal Opportunity Officer	Date
	October 17, 2016
Signature of Library Director	Date

This appendix was created to facilitate the collection of signatures in support of the proposal. Signatures in this section illustrate that the Equal Opportunity Officer has reviewed section II.E of the proposal and the Library Director has reviewed sections X.A and X.B.

Graduate M&S Fees Agenda
November 9, 2016

College	Course	Title	Current Fee	Requested Fee	Approved Fee
CAH	MUN 5445	Percussion Ensemble	$ 35.00	$ 35.00	
CAH	MUO 5505L	Graduate Opera Workshop	$ 70.00	$ 70.00	
COS	PCB 7049C	Conservation Biology Prac...	$ 70.00	$ 0.00	
HPA	SPA 6204	Articulation/Phonological...	$ 45.00	$ 18.24	
HPA	SPA 6211C	Voice Disorders	$ 15.00	$ 14.74	
HPA	SPA 6474	Assessment and Management...	$ 60.00	$ 64.34	
HPA	SPA 6496	Language Disorders in Chi...	$ 70.00	$ 70.00	
HPA	SPA 6943C	Clinical Practice Level I	$ 40.00	$ 40.32	
HPA	PHT 5125L	Clinical Kinesiology Lab	$ 35.00	$ 35.37	
HPA	PHT 5218L	Theories and Procedures I...	$ 30.00	$ 35.64	
HPA	PHT 5240L	Physical Assessment Lab	$ 45.00	$ 48.26	
HPA	PHT 5260L	Patient Care Skills Lab	$ 30.00	$ 33.62	
HPA	PHT 5718L	Neurological Physical The...	$ 30.00	$ 33.30	
HPA	PHT 6115C	Gross Anatomy/Neuroscienc...	$ 70.00	$ 70.00	
HPA	PHT 6118C	Gross Anatomy/Neuroscienc...	$ 70.00	$ 70.00	
HPA	PHT 6156C	Applied Human Physiology ...	$ 25.00	$ 29.53	
HPA	PHT 6219L	Theories and Procedures I...	$ 45.00	$ 44.96	
HPA	PHT 6242L	Orthopedic Physical Thera...	$ 40.00	$ 39.55	
HPA	PHT 6719L	Advanced Neurological Phy...	$ 25.00	$ 29.43	

MUN 5445 **CAH-MUSIC** **1(0,2)**

Percussion Ensemble: PR: Open to all graduate students by audition. Study and performance of music for small percussion ensembles. May be used in the degree program a maximum of 4 times. *Odd Fall.*

Materials & Supply Fee proposed revision: from $35.00 to $35.00

Brief description of fee use:

Percussion students practice on UCF owned equipment & instruments. Snare drums, bass drums, tom-toms, World Music drums, and timpani all have "drum heads" that are struck repeatedly by the students. There heads are made of plastic or animal skin and break or rip on a regular basis. The students practice on mallet keyboard instruments. The bars are suspended by a custom made rope and the rope breaks after a number of hours of the bars being struck. Cymbals are suspended via straps and felts and they need to be replaced as they wear out. Although breakage and wear occurs throughout the semester, all of these items need to be replaced at least annually. New sheet music also needs to be purchased each semester.

Each item below is per **2** students

	# units/2 students	Description	cost/2 students	Denied Committee	Denied Provost
1.	4 sets	Ensemble Sheet Music (score and parts)	$ 50.00	☐	☐
2.	2 sets	Cymbal Straps and Felts	$ 5.00	☐	☐
3.	2 sets	Key board ropes	$ 5.00	☐	☐
4.	2	Drumheads	$ 10.00	☐	☐
		Total:	**$ 70.00**		
		per 1 student	**$ 35.00**		

MUO 5505L **CAH-MUSIC** **1(0,3)**

Graduate Opera Workshop: PR: C.I. and audition. Study of audition techniques, operatic roles and repertoire, and characterization through performance. May be used in the degree program a maximum of 5 times.

Materials & Supply Fee proposed revision: from $70.00 to $70.00

Brief description of fee use:

This fee is used to purchase musical scores, costumes, make-up, and sets/properties used in UCF opera productions. The students are not required to purchase a textbook or any other course materials, and it is more practical to purchase the materials in bulk rather than for students purchase them.

Each item below is per **2** students

Denied

	# units/2 students	Description		cost/2 students	Committee	Provost
1.	2	Costumes		$ 60.00	☐	☐
2.	2	Make-up		$ 10.00	☐	☐
3.	2	Musical score		$ 70.00	☐	☐
			Total:	**$140.00**		
			per 1 student	**$ 70.00**		

PCB 7049C **COS-BIOL** **4(2,4)**

Conservation Biology Practice: PR: Acceptance into the Conservation Biology Ph.D. program. Case studies and evaluation of local and regional conservation issues from a biological perspective. *Spring.*

Materials & Supply Fee proposed revision: from $70.00 to $0.00

Brief description of fee use:

Course is now PCB 6053C which has a fee. Delete fee.

Each item below is per **5** students

	# units/5 students	Description		cost/5 students	Committee (Denied)	Provost
			Total:	**$ 0.00**		
			per 1 student	**$ 0.00**		

SPA 6204 **HPA-COM SC&DIS** **3(3,0)**

Articulation/Phonological Disorders: PR: Admission to M.A. in Communication Sciences and Disorders or C.I. Advanced theory, diagnosis, and treatment of articulation/phonological disorders including developmental apraxia of speech, dysarthria, and cleft palate; communicative differences vs. disorders emphasized. *Fall, Spring, Summer.*

Materials & Supply Fee proposed revision: from $45.00 to $18.24

Brief description of fee use:

Students learn to conduct clinical assessments, examine treatments that would be appropriate for the presenting speech and/or phonological problem and develop treatment plans for simulated clients. To become knowledgeable and proficient in this disorder area, students require access to the materials and supplies listed. Note that the protocols listed are necessary for student exposure, because the tests associated with the them will be used when the students enter their clinical portion of the program. Further, students perform oral peripheral and oro-motor examinations in the class, thus the need for sterile tongue blades and gloves.

Each item below is per **105** students

	# units/105 students	Description	cost/105 students	Denied Committee	Denied Provost
1.	2	Medline Sterile Tongue Depressors	$ 17.00	☐	☐
2.	2	Powdered Nitrile Medical Gloves	$ 17.00	☐	☐
3.	5	Khan-Lewis Phonological Analysis-3rd Edition	$ 295.00	☐	☐
4.	1	Hodson Computerized Analysis of Phonological Processes	$ 130.00	☐	☐
5.	5	Goldman-Fristoe Test of Articulation-3rd Edition	$ 200.00	☐	☐
6.	1	Diagnostic Evaluation of Articulation and Toddler Phonology (DEAP and TPT)	$ 400.00	☐	☐
7.	3	Clinical Assessment of Articulation and Phonology CAAP forms 2nd edition	$ 138.00	☐	☐
8.	1	LinguiSystem Articulation Test (LAT)	$ 180.00	☐	☐
9.	5	DEAP & TPT Phonology forms	$ 169.00	☐	☐
10.	5	DEAP and TPT Articulation and Oro-Motor forms	$ 169.00	☐	☐
11.	1	Clinical Assessment of Articulation and Phonology App	$ 200.00	☐	☐
		Total:	**$1915.00**		
		per 1 student	**$ 18.24**		

SPA 6211C **HPA-COM SC&DIS** **4(3,1)**

Voice Disorders: PR: Admission to M.A. in Communication Sciences and Disorders or C.I. Study of the etiology, evaluation, and management of voice disorders in children and adults, with laboratory demonstration and participation. *Fall, Spring.*

Materials & Supply Fee proposed revision: from $15.00 to $14.74

Brief description of fee use:

Course includes hands-on training with endoscopy (flexible and rigid). The system requires replacement items from frequent use and disposables for every use. Hands on training for laryngectomy requires exposure and use of various medical supplies. Some of these supplies are one-time use and others need replacement with use during the semester (electrolarynix, batteries, prosthesis).

Each item below is per **1** students

Denied

	# units/1 students	Description	cost/1 students	Committee	Provost
1.	1	Cotton Balls	$ 0.17	☐	☐
2.	1	Alcohol Preps	$ 0.28	☐	☐
3.	1	Cidex	$ 0.57	☐	☐
4.	1	Hand Soap	$ 0.22	☐	☐
5.	1	Gloves	$ 0.51	☐	☐
6.	1	4 X 4 Gauze	$ 0.51	☐	☐
7.	1	Tongue blades	$ 0.25	☐	☐
8.	1	Batteries for Electrolarynx	$ 0.34	☐	☐
9.	1	Disposable tubes/filters	$ 0.50	☐	☐
10.	1	Tracheoesophageal prosthesis (various sizes/types)	$ 7.00	☐	☐
11.	1	Laryngectomy Kit (incl. stoma cover and lary tube heat moisture exchange system)	$ 4.20	☐	☐
12.	1	Box of Straws	$ 0.19	☐	☐
		Total:	**$ 14.74**		
		per 1 student	**$ 14.74**		

SPA 6474 **HPA-COM SC&DIS** **3(3,0)**

Assessment and Management of Culturally and Linguistically Diverse Populations: PR: Admission to MA in Communication Sciences or C.I. Role of native and second languages, dialects and culture in the assessment and management of individuals from culturally and linguistically diverse backgrounds. *Fall, Spring.*

Materials & Supply Fee proposed revision: from $60.00 to $64.34

Brief description of fee use:

Students are required to become familiar with a variety of assessment instruments used to assess English learners in order to determine if their is a communication difference versus a communication disorder. Students are required to read test manual, administer and use test protocols to better understand test administration, scoring and recommendation. Students must also become familiar with a variety of treatment protocols, approaches and/or strategies used to support the English learner with a communication disorder as they progress through their K-12 academic program or prepare treatment programs for adults with communication disorders for whom English is not their primary language.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Committee (Denied)	Provost

1.	1	Wookcock-Munoz Lang Survey - English Test Records	$ 1.43	☐	☐
2.	1	Wookcock-Munoz Lang Survey - Spanish Test Records	$ 1.43	☐	☐
3.	1	Preschool Language Scale - Span Record Forms	$ 1.57	☐	☐
4.	1	Multilingual Aphasia Exam - Spanish Spelling/Aural/Reading	$ 0.86	☐	☐
5.	1	Multilingual Aphasia Exam - Spanish Token Test	$ 0.86	☐	☐
6.	1	Multilingual Aphasia Examination - Spanish Visual Naming	$ 0.86	☐	☐
7.	1	Multilingual Aphasia Exam - Spanish Word Association	$ 0.86	☐	☐
8.	1	MacArthur Inventarios del Desarrollo de Habilidades Comunicacion: Palabras y Getos	$ 0.95	☐	☐
9.	1	Lang Assess Scales-Reading&Writing - Span Student Answer	$ 1.86	☐	☐
10.	1	Lang Assess Scales-Reading&Writing - Span Writing Test	$ 2.09	☐	☐
11.	1	Lang Assess Scales-Reading&Writing - Span Reading Test	$ 2.79	☐	☐
12.	1	Lang Assess Scales-Reading&Writing - Span Student Answer	$ 1.86	☐	☐
13.	1	Lang Assess Scales-Reading&Writing - Span Writing Test	$ 2.09	☐	☐
14.	1	Lang Assess Scales-Reading&Writing - Span Reading Test Books	$ 2.79	☐	☐
15.	1	Lang Assess Scales-Reading&Writing - Spanish Writing Test	$ 2.20	☐	☐
16.	1	Language Asses Scales-Reading&Writing -Spanish Test Books	$ 4.34	☐	☐
17.	1	Lang Assess Scales-Oral Span Ed Student Profile Sheets	$ 1.17	☐	☐
18.	1	Lang Assess Scales-Oral Span Ed Student Answer Books	$ 1.97	☐	☐
19.	1	Language Assessment Scales-Oral Span Ed - Student Prof Sheet	$ 1.17	☐	☐

20.	1	Language Assessment Scales- Oral Spanish Edition	$ 1.97	☐	☐
21.	1	Spanish Articulation Measures - Record Forms	$ 1.11	☐	☐
22.	1	Receptive One-Word Picture Vocab Test Spanish-Bilingual	$ 0.86	☐	☐
23.	1	Expressive One-word picture vocab test Spanish-Bilingual	$ 0.86	☐	☐
24.	1	Dos Amigos Verbal Language Scales - Test Forms	$ 0.57	☐	☐
25.	1	Diagnostic Evaluation of Language Variance - Record Form	$ 1.71	☐	☐
26.	1	Cognitive Linguistic Quick Test - English Record Form	$ 2.00	☐	☐
27.	1	Cognitive Linguistic Quick Test (CLQT) - Spanish Record Form	$ 1.20	☐	☐
28.	1	Clinical Evaluation of Language Fundamentals - Record Forms	$ 1.94	☐	☐
29.	1	Clinical Evaluation of Language Fundamentals - Record Forms	$ 1.94	☐	☐
30.	1	Bilingual Language Proficiency Questionnaire	$ 0.48	☐	☐
31.	1	Bilingual Health and Developmental History Questionnaire	$ 0.48	☐	☐
32.	1	Bilingual Classroom Communication Profile - Questionnaire	$ 0.83	☐	☐
33.	1	Diagnostic Supplment Test Records	$ 1.89	☐	☐
34.	1	Brief Intellectual Ability Test Records	$ 1.14	☐	☐
35.	1	Test of Achievement Test Records & Subject Response Booklets	$ 2.31	☐	☐
36.	1	Tests of Cognitive Abilities Records and Subject Response Bo	$ 2.43	☐	☐
37.	1	ROWVPT (English)	$ 1.68	☐	☐
38.	1	EOWPVT (English)	$ 1.68	☐	☐
39.	1	Preschool Language Scales PLS-5 (English)	$ 3.16	☐	☐
40.	1	MacArthur Inventarios del Desarrollo de Habilidades Comunicacion: Palabras y Enunciados	$ 0.95	☐	☐

Total:	**$ 64.34**
per 1 student	**$ 64.34**

SPA 6496 **HPA-COM SC&DIS** **6(6,0)**

Language Disorders in Children and Adolescents: PR: Admission to M.A. in Communication Sciences and Disorders or C.I. The nature, assessment and management of spoken and written language disorders in children and adolescents. *Fall, Spring, Summer.*

Materials & Supply Fee proposed revision: from $70.00 to $70.00

Brief description of fee use:

Each item below is per **1** students

# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.	Detroit Test of Learning Aptitude -Primary:3	$ 0.40	☐	☐
2.	Test of Early Written Language-2	$ 7.90	☐	☐
3.	Test of Word Finding in Discourse	$ 1.80	☐	☐
4.	Test of Adolescent & Adult Language - 4	$ 5.88	☐	☐
5.	Assess of Lang and Literacy	$ 2.16	☐	☐
6.	Test of Language Development - Primary:4	$ 3.08	☐	☐
7.	Preschool Language Scale-4	$ 3.12	☐	☐
8.	Clinical Evaluation of Language Fundamentals Preschool:2	$ 2.80	☐	☐
9.	Diagnostic Evaluation of Language Variation - Norm Ref	$ 2.40	☐	☐
10.	Woodcock Reading Mastery Test-R	$ 2.32	☐	☐
11.	Test of Written Language - 4th Edition	$ 3.22	☐	☐
12.	Test of Pragmatic Language	$ 4.32	☐	☐
13.	Test of Language Development - Int 4th Edition	$ 2.24	☐	☐
14.	Test of Language Competence - Expanded Edition	$ 6.51	☐	☐
15.	Oral & Written Language Scales	$ 3.16	☐	☐
16.	Gray Oral Reading Test - 4th Edition	$ 4.56	☐	☐

17.		Detroit Test of Learning Aptitude - 4th Edition	$ 3.64	☐	☐
18.		Diagnostic Assesments of Reading - 2nd Edition	$ 5.07	☐	☐
19.		Comprehensive Assesment of Spoken Language CASL	$ 5.42	☐	☐
		Total:	**$ 70.00**		
		per 1 student	**$ 70.00**		

SPA 6943C **HPA-COM SC&DIS** **3(1,4)**

Clinical Practice Level I: PR: SPA 6942, SPA 6942L. Clinical practicum for the demonstration of knowledge and skill application in the diagnosis, treatment and management of persons with complex communication disorders across the lifespan. *Fall,Spring,Summer.*

Materials & Supply Fee proposed revision: from $40.00 to $40.32

Brief description of fee use:

Students enrolled in SPA 6943C administer a variety of assessments and provide therapeutic intervention to clients with complex communication needs. The materials and supply fee justification outlines the cost for different assessments and their associated protocols. Replacement occurs biannual or sooner if the assessment has been revised. Other fees include materials for establishing alternative and augmentative communication boards, oral mechanism supplies and sanitization supplies to prevent cross contamination of germs for non-disposable surfaces. Finally the fees include printing and copying HIPPA protected client information that students produce as part of their clinical education (including SOAP notes, progress reports, medical correspondence, etc.) which must be done in the clinic and in compliance with HIPPA standards.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.		Protocols for OWLS	$ 0.48	☐	☐
2.		Protocols for TOAL-4 Written	$ 1.89	☐	☐
3.		Protocols for ABA-2, FLCI, ABCD, RCBA, RIPA, HAPP-3	$ 4.08	☐	☐
4.		Protocols for TOSS-P	$ 0.39	☐	☐
5.		Protocols for WAB, CLQT, TOAL4	$ 5.48	☐	☐
6.		Protocols for WJ Cog	$ 6.09	☐	☐
7.		Protocols for BAB SSC	$ 2.50	☐	☐
8.		Tongue Depressors	$ 1.50	☐	☐
9.	1	RICE Protocol	$ 0.49	☐	☐

10.	1	ProEd BDAE and BNT Protocols	$ 4.41	☐	☐
11.	1	ProEd FDA-2 Protocol	$ 0.97	☐	☐
12.	1	Pearson PALPA	$ 0.76	☐	☐
13.	1	Mayer-Johnson TASP	$ 1.41	☐	☐
14.	1	ProEd TNL	$ 1.18	☐	☐
15.	1	ProEd AIDS	$ 0.17	☐	☐
16.	1	WPS	$ 3.16	☐	☐
17.		Sanitizing Supplies	$ 1.61	☐	☐
18.		AAC Visual Board Materials	$ 3.75	☐	☐
		Total:	**$ 40.32**		
		per 1 student	**$ 40.32**		

PHT 5125L **HPA-HP** **2(0,4)**

Clinical Kinesiology Lab: CR: PHT 5125. Graduate level study of human musculoskeletal movement with an emphasis on joint mechanics and clinical applications. *Summer.*

Materials & Supply Fee proposed revision: from $35.00 to $35.37

Brief description of fee use:

This is a lab-based course in which the students learn palpation skills, movement analysis, and gait analysis. Since it is lab based and students have skin exposed to mat-tables and each other for palpation, the entire environment needs to be appropriately cleaned on a daily basis (hand sanitizers, table & environment disinfectants), as well as appropriattely draped for privacy and to cover surfaces when needed. Gait is analyzed for spatial characteristics. Students feet are painted and the characteristics are left behind on roll-out paper, where the students make their measurements, observations, and analysis. Further objectives of the course are to examine movement, functional movement, and exercise. To examine muscle contraction, firing, and peak amplitude characteristics, students examine these characteristics through EMG muscle analysis captured through biofeedback.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.	36	Muscle conduction and amplitude analysis	$ 20.40	☐	☐
2.	3	Paints	$ 1.00	☐	☐
3.	1	Paper Roll	$ 0.83	☐	☐
4.	1	Linens	$ 9.44	☐	☐
5.	2	Antimocrobial/Handwash	$ 1.94	☐	☐
6.	2	Mat table and surface disinfectant	$ 1.76	☐	☐

			Total:	**$ 35.37**	
			per 1 student	**$ 35.37**	

PHT 5218L **HPA-HP** **1(0,2)**

Theories and Procedures I lab: CR: Theories and Procedures I. Lab course on the clinical applications of heat, light,cold, water, sound, and massage. *Spring.*

Materials & Supply Fee proposed revision: from $30.00 to $35.64

Brief description of fee use:

This is a lab course in which students learn and practice treatment modalities including application of thermal agents, ultrasound, hydrotherapy, therapeutic message, traction, comperssion and diathermy. The supplies are required to successfully complete course activities.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.	1	Cold Packs 3 sizes; cervical, standard, XL	$ 2.48	☐	☐
2.	1	Hot packs 3 sizes; cervical, standard XL	$ 3.22	☐	☐
3.	2	Low Stretch Medical Bandage 4" wide	$ 0.62	☐	☐
4.	1	Stockinette 25 yards	$ 0.98	☐	☐
5.	2	Paraffin wax refills 5295-01	$ 2.42	☐	☐
6.	1	Ultrasound gel	$ 0.66	☐	☐
7.	2	Deep Prep massage cream	$ 1.74	☐	☐
8.	4	Cramer Cold spray 7454	$ 2.03	☐	☐
9.	1	Isopropyl Alcohol 5611-84	$ 1.22	☐	☐
10.	2	All Purpose Disinfectant Cleaner 9651-36	$ 1.81	☐	☐
11.	2	Hand Sanitizer 9251-36	$ 1.46	☐	☐
12.	1	Linens (used in 10 lab courses $6000X.10)=600	$ 17.00	☐	☐
		Total:	**$ 35.64**		
		per 1 student	**$ 35.64**		

PHT 5240L **HPA-HP** **2(0,4)**

Physical Assessment Lab: CR: Physical Assessment. Lab course emphasizing the examinations required to perform an evaluation of physical therapy patient. *Fall.*

Materials & Supply Fee proposed revision: from $45.00 to $48.26

Brief description of fee use:

This is a lab course in which students learn range of motion, sensation and reflexes. Activies require frequent student to student physical contact and, thus, appropriate infection control is required.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.	1	Finger Gonimeter	$ 5.80	☒	☒
2.	1	2-point Discrminator 5632-35	$ 10.09	☒	☒
3.	1	Tape Meassure	$ 12.10	☐	☐
4.	1	All Purpose Disinfectant Cleaner 9651-36	$ 1.81	☐	☐
5.	2	Hand Sanitizer 9251-56	$ 1.46	☐	☐
6.	1	Linens ($6000/yr used in 10 labs)/36 students each lab	$ 17.00	☐	☐
		Total:	**$ 32.37**		
		per 1 student	**$ 32.37**		

PHT 5260L **HPA-HP** **1(0,2)**

Patient Care Skills Lab: CR: Patient Care Skills. Skills of patient care, transfers, mobility skills. *Fall.*

Materials & Supply Fee proposed revision: from $30.00 to $33.62

Brief description of fee use:

This is a lab course which inlcudes introduction and performance in infection control measures, assessment of vital signs, patient positioning and draping, patient handling including bed mobility and transfers and basics of wound care. Activities require frequent student-to-student physical contact, thus appropriate infection control is required. The following supplies are necessary for successful completion of the lab activities.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.	2	Replacement hand grips & underarm pad	$ 0.42	☐	☐
2.	4	Replacement tips for canes, walkers, crutches 7203-01	$ 0.78	☐	☐

3.	1	Stretch Gauze Bandages	$ 1.81	☐	☐
4.	1	Gauze Sponges	$ 0.45	☐	☐
5.	1	Disposable gloves Latex-free 5243-02	$ 0.76	☐	☐
6.	1	Sterile Latex Gloves 7143	$ 2.52	☐	☐
7.	1	Surgical Face Mask 0814-64-068	$ 0.46	☐	☐
8.	1	Sterile fields 5546-13	$ 0.82	☐	☐
9.	1	Disposable sheaths for digital thermometer	$ 0.12	☐	☐
10.	1	Personal Protective Equipment Kits	$ 3.11	☐	☐
11.	1	All pupose disinfectant Cleander 9651-36	$ 1.81	☐	☐
12.	2	Hand Sanitizer	$ 1.46	☐	☐
13.	1	Linens ($6000/yr used in 10 labs)	$ 17.00	☐	☐
14.	2	Replacement walker/crutch pads	$ 2.10	☐	☐
		Total:	**$ 33.62**		
		per 1 student	**$ 33.62**		

PHT 5718L **HPA-HP** **1(0,2)**

Neurological Physical Therapy Lab: CR: Neurological Physical Therapy. Lab Course emphasizing the clinical application of selected neuromotor theories. *Summer.*

Materials & Supply Fee proposed revision: from $30.00 to $33.30

Brief description of fee use:

This is a lab course in which students learn and parctices the components of a comprehensive neurological examination. These supplies and tools are needed to provide this learning experience.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Provost
1.	1	Disposable gloves latex free - S	$ 0.75	☐	☐
2.	1	Disposable gloves latex free - L	$ 0.75	☐	☐
3.	1	Disposable gloves latex free - M	$ 0.75	☐	☐
4.	1	Sterile latex gloves	$ 1.28	☐	☐
5.	1	All purpose disinfectant cleaner 9651-36	$ 1.81	☐	☐
6.	2	Hand Santizer 9251-56	$ 1.46	☐	☐

7.	1	Linens ($6000/yr X 10 labs = $600/lab for 36 students	$ 17.00	☐	☐
8.	1	7 piece Tuning fork and reflex hammer	$ 9.50	☐	☐
		Total:	**$ 33.30**		
		per 1 student	**$ 33.30**		

PHT 6115C **HPA-HP** **6(3,6)**

Gross Anatomy/Neuroscience I: PR: Admission to DPT program. Study of human anatomy via lecture and cadaver dissection emphasizing upper and lower extremity, muscoloskeletal, peripheral vascular and peripheral nervous systems, thoracic and abdominopelvic cavities. *Summer.*

Materials & Supply Fee proposed revision: from $70.00 to $70.00

Brief description of fee use:

This is the first course in a two-semester sequence providing first-year DPT students with a detailed examination of human anatomy, including the peripheral and central nervous systems. The requested lab fees will be used to purchase human cadaver specimens, subsidize procurement, preparation, disposal (cremation), and transportation of cadavers to and from the State Anatomical Board facility at the UCF Medical City Campus. Fees are also used to cntract for routine biohazard waste removal services, purchase tissue preservation solutions, anatomical models, dissection tool and personal safety equipment.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Provost
1.	1	Human Cadaver - plus additional items	$ 70.00	☐	☐
		Total:	**$ 70.00**		
		per 1 student	**$ 70.00**		

PHT 6118C **HPA-HP** **6(3,6)**

Gross Anatomy/Neuroscience II: PR: Gross Anatomy/Neuroscience I. Comprehensive study of anatomy and physiology of the nervous system to develop DPT students' improved treatment strategies for patients with neurological problems. *Fall.*

Materials & Supply Fee proposed revision: from $70.00 to $70.00

Brief description of fee use:

This is the second course in a two-semester sequence providing first-year DPT students with a detailed examination of human anatomy, including the peripheral and central nervous systems. The requested lab fees will be used to purchase human cadaver specimens, subsidize procurement, preparation, disposal (cremation), and transportation of cadavers to and from the State Anatomical Board at the UCF Medical Center Campus at Lake Nona. Fees are also used to contract for routine biohazard waste removal services, purchase tissue preservation solutions, anatomical models, dissection tools and personal safety equipment.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.	1	Human cadavers - plus additional items	$ 70.00	☐	☐
		Total:	**$ 70.00**		
		per 1 student	**$ 70.00**		

PHT 6156C **HPA-HP** **5(3,2)**

Applied Human Physiology for Health Sciences: PR: Admission to the Doctor of Physical Therapy program. Course provides in-depth study of human cardiovascular, hemopoietic, respiratory, gastrointestinal, renal and reproductive systems with emphasis on mechanisms responsible for maintaining homeostasis. *Fall.*

Materials & Supply Fee proposed revision: from $25.00 to $29.53

Brief description of fee use:

This course provides the first-year DPT student with a comprehensive overview of human systems physiology with an emphasis on the cardiovascular system. Laboratory experiences include the theoretical and practical application of EKG, metobolic testing, and other non-invasive measures of cardiovascular fitness.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.	1	Alcohol Preps	$ 0.53	☐	☐
2.	1	Nitrile Disposable Glvoes - XL	$ 2.00	☐	☐
3.	1	Nitrile Disposable Gloves - Large	$ 2.00	☐	☐
4.	1	Nitrile Disposable Gloves - medium	$ 2.00	☐	☐
5.	1	Nitrile Disposable Gloves - Small	$ 2.00	☐	☐
6.	1	Tringo Sensor Skin Interface $35/pack of 80	$ 1.00	☐	☐

7.	2	Aquasonic 100 Ultrsound Transmission Gel	$ 3.00	☐	☐
8.	1	Linens ($6000/year for 10 labs) 36 students each lab	$ 17.00	☐	☐
		Total:	**$ 29.53**		
		per 1 student	**$ 29.53**		

PHT 6219L **HPA-HP** **1(0,2)**

Theories and Procedures II Lab: PR: Theories and Procedures I and lab; CR: Theories and Procedures II. Lab course focusing on electrodiagnosis and electrophysiologic examinations, and the interventions used in the treatment of pain and dysfunction. *Summer.*

Materials & Supply Fee proposed revision: from $45.00 to $44.96

Brief description of fee use:

This is a lab course in which students learn and practice treatment electromagnetic modalities including electrical stimulation, iontophoresis, biofeedback, nerve testing, laser and light therapy and lymph drainage. These supplies are required to successfully completed required activities for the class.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Provost
1.	1	EMG Triode electrodes 9223-01	$ 3.79	☐	☐
2.	1	Batteries AA Carton of 24, 9-volt Carton of 12	$ 1.73	☐	☐
3.	2	Iontophoresis Dupel 5543-10, 5443-11, 5543-12	$ 12.76	☐	☐
4.	1	Valutrode 2"x3.5" rectangle electrodes	$ 2.24	☐	☐
5.	1	Valutrode 2" square electrodes	$ 1.84	☐	☐
6.	1	Isopropyl Alcohol 5611-84	$ 1.22	☐	☐
7.	1	All Purpose Disinfectant Cleaner 9651-36	$ 1.81	☐	☐
8.	2	Hand Sanitizer 9251-56	$ 1.46	☐	☐
9.	1	Linens ($6000/year for 10 labs for 36 students)	$ 17.00	☐	☐
10.	1	ComforTENs Plus with Performa Electrodes	$ 1.11	☐	☐
		Total:	**$ 44.96**		
		per 1 student	**$ 44.96**		

PHT 6242L **HPA-HP** **1(0,2)**

Orthopedic Physical Therapy Lab: CR: Orthopedic Physical Therapy. Lab course emphasizing the examinations and interventions for the evaluation and treatment of specific orthopedic cases and injuries. *Fall.*

Materials & Supply Fee proposed revision: from $40.00 to $39.55

Brief description of fee use:

This is a lab-based course involving the handling of patients to test integrity of orthopedic structures. Classroom will require cleansers for treatment tables and antimicrobial hand sanitizer for the students, as well as linens/linen maintenance for draping of students and covering tables. In addition, taping supplies will be necessary for practice of corrective and protective taping procedures (athletic tape, and corrective tape fees). Students will also cover orthotic fabrication, which will require the purchase of plaster for students to practice this skill.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.	4	Plaster cast material	$ 6.11	☐	☐
2.	2	Mat table and surface disinfectant	$ 1.76	☐	☐
3.	2	Antimocrobial/Handwash	$ 1.94	☐	☐
4.	1	Linens	$ 9.44	☐	☐
5.	17	Corrective Tape: Cover Role & Leukotape	$ 18.45	☐	☐
6.	1	Athletic Tape	$ 1.85	☐	☐
		Total:	**$ 39.55**		
		per 1 student	**$ 39.55**		

PHT 6719L **HPA-HP** **1(0,2)**

Advanced Neurological Physical Therapy Lab: PR: PHT 5718L; CR PHT 6719. Course Emphasizing examinations and interventions for the evaluation and treatment of patients with neurological disease. Emphasis on patients with spinal cord injury and neurological disease. *Fall.*

Materials & Supply Fee proposed revision: from $25.00 to $29.43

Brief description of fee use:

This is a lab course in which students learn and parctice the interventions strategies for treatment of the patient with neurologice impairments. These supplies and tools are needed to provide this learning experience.

Each item below is per **1** students

	# units/1 students	Description	cost/1 students	Denied Committee	Denied Provost
1.	1	Disposable gloves latex free - S	$ 0.75	☐	☐
2.	1	Disposable gloves latex free - M	$ 0.75	☐	☐
3.	1	Disposable gloves latex free - L	$ 0.75	☐	☐
4.	`	Sterile latex gloves	$ 1.29	☐	☐
5.	1	All Purpose Disinfectant Cleaner 9651-36	$ 1.81	☐	☐
6.	2	Hand Sanitizer 9251-56	$ 1.46	☐	☐
7.	1	Linens ($6000/year used in 10 labs for 36 students	$ 17.00	☐	☐
8.	1	Package of 6 stopwatches	$ 5.62	☐	☐
		Total:	**$ 29.43**		
		per 1 student	**$ 29.43**		

Course Agenda – November 9, 2016

1. Course Additions

College of Arts and Humanities Course Additions

TPP 6XXX **CAH-THEA** **2(2,1)**
Acting Studio V: PR: TPP 6267. An advanced acting course which will explore and develop specialty areas of actor training. *Odd Spring.*
Abbrev: (15 of 30 chars) Acting Studio V
Rationale: Additional acting class is required to enhance the quality of the training program.
Majors taking course: MFA Acting

College of Education and Human Performance Course Additions

Tabled 10/26/2016. Needs discussion with Communication Sciences and Disorders and with Psychology.
EEX 6XXX **ED-CFCS** **3(3,0)**
Advanced Behavior Analysis: PR: EEX 6612. This course prepares practitioners to use the principles of advanced behavior analysis (ABA) to assess and teach communication skills to individuals with autism and develop knowledge of current augmentative and alternative communication (AAC) technology. *Summer.*
Abbrev: (3 of 30 chars) ABA
Discussion with others: At this time, there are no courses on the books at the advanced behavior analysis level. The EEX 6612 methods of behavior management is a required course prior to entering the Advanced behavior analysis course. Content in the new course will build off of EEX 6612 into more advanced and complex systems of behavior analysis.
Majors taking course: Project ASD: Certificate Program in Austim Spectrum Disorders.

College of Engineering and Computer Science Course Additions

Tabled 10/26/2016, with 1 opposed. Needs discussion with Biomedical Sciences.

EEL 5XXX **ECS-ECE** **3(3,0)**
Advanced Bioelectronics Systems: PR: EEE 4309C or C.I. Advanced bioelectronics systems and techniques that enable recent biophysical and biomedical research will be discussed. *Spring.*
Abbrev: (30 of 30 chars) Advanced Bioelectronics System
Discussion with others: Discussed with Biomedical Engineering and with NSTC; no overlaps or conflicts found. Pending discussion with Biomedical Sciences.

Rationale: In recent years, electronics systems and instrumentations became an essential tool for the advances in biotechnology and biosciences that deal with numerous issues associated with noise, gain-bandwidth and throughput, for instance, single-cell electrophysiology and single-molecule measurement. As the industrial and academical interests grow rapidly in biotechnology, students advancing their career in biotechnology need fundamental understanding of common challenges and techniques in advanced bioelectronics systems.

Especially with UCF starting a Biomedical Engineering program for MS (and Ph.D. in the future), this class will give a strong presence of Electrical and Computer Engineering to students who have interest in the field of Biomedical Engineering.

College of Nursing Course Additions

Tabled 10/26/2016. Needs discussion with Anthropology.

NGR 6XXX CON- 3(3,0) Global Health in Action: PR: Admission to Graduate Nursing Program or C.I. An overview of health from a global perspective, synthesizing the theory and practice of global health. *Summer.*
Abbrev: (21 of 30 chars) Global Hlth in Action
Repeat For Credit: True Max Times: 2
Discussion with others: See emails
Rationale: A major revision reflecting current issues in global health
Majors taking course: Not applicable

College of Sciences Course Additions

PCB 6XXX COS-BIOL 3(3,0)
Global Change Biology: PR: Graduate standing, or C.I. Examination of global climate change science applied to biological systems. Topics include: physical basis, physiological and evolutionary responses, range shifts, biogeochemical cycles, disturbance, uncertainty, and effective communication. *Odd Spring.*
Abbrev: (17 of 30 chars) Global Change Bio
Discussion with others: The Biology dept. currently has no graduate level courses that address global climate change in any detail. I have spoken with the instructors of the 3 courses that could potentially present similar materials (PCB 6042 Conservation Biology Theory, PCB 6046 Advanced Ecology, and PBC 6053C Restoration Ecology). All indicated the overlap will be none or extremely limited, and that they see the course as a valuable addition to the graduate curriculum. Attached is communication from Anthropology, PoliSci & Civil, Environmental and Construction Engineering.

Rationale: Global climate change drives a variety shifts in the physiochemical composition and functioning of our environment, which cascades into significant effects on biological system. All graduate students obtaining degrees in Biology/Conservation Biology today need to have a strong foundational knowledge of the causes and consequences of global change, including the ability to think critically and evaluate the abundance of new scientific data emerging on the subject of climate change. This course will achieve that goal, as well as help students evaluate the potential role of global change in their own scientific endeavors.
Majors taking course: It will be an elective for all Biology grad students, and an option for grad students in other depts. (Chem, Physics, Eng., etc)

STA 6XXX **COS-STAT** **3(3,0)**
Spatial Statistics: PR: STA 6707 and STA 5825. Statistical models and methods for analyzing data that are collected at different spatial locations and/or at different times, spatial or spatio-temporal data. *Even Spring.*
Abbrev: (18 of 30 chars) Spatial Statistics
Discussion with others: This class is focusing on statistical analysis of spatial data. There is no other department offering this course now and therefore no possible duplications or conflicts with other departments.
Rationale: In the last decade, there is a rapid growth in the use of Geographical Information Systems (GIS). Analysis of these data is an important component of this development. Spatial statistics has developed its own techniques for solving spatial data problems. Spatial data analysis is used when data is collected at a number of different sites. With the recent advances in big data analytics, students should also learn on how to analyze spatial data to be competitive in the current job market.

STA 7XXX **COS-STAT** **3(3,0)**
Bayesian Modeling and Computation: PR: STA 5703 and STA 6704. Bayesian model, prior specification, basics of decision theory, Markov chain Monte Carlo, Bayes factor, empirical Bayes, Bayesian linear regression and generalized linear models, hierarchical models. *Occasional.*
Abbrev: (29 of 30 chars) Bayesian Modeling Computation
Discussion with others: Contacted Biomedical Sciences, Bioinformatics, Sociology, Electrical & Computer Engineering, Psychology, Anthropology, Education & Human Performance, Computer Science. See attached emails.
Rationale: Today Bayesian statistics is important for a PhD in Data Analytics because Bayesian analysis is widely used and provides a computational solution when the estimated parameters do not have a closed form. Bayesian analysis is also becoming more welcome in numerous of fields such as psychometric and bioinformatics. It requires mathematics especially probability training to understand the Bayesian theories and methods. Bayesian methods have some advantages compared to conventional analysis. First, practically many problems that are intractable using the conventional methods are tractable by Bayesian approaches. Second, Bayesian modeling is more flexible for parameter estimation so that it may be more useful for clustering problems due to lack of data's label information.

STA 7XXX **COS-STAT** **3(3,0)**

Current Topics in Big Data Analytics: PR: STA 5703 and STA 6704. Discussion of new and current techniques developed to solve big data problems that are not covered in current big data analytic courses. *Occasional.*

Abbrev: (30 of 30 chars) Curr Topics Big Data Analytics

Discussion with others: Contacted Electrical & Computer Engineering, Industrial Engineering & Management, and Computer Science. See attached emails.

Rationale: Big data analytics is a repeat growing field and there are many techniques developed each year. These new techniques are important component of students in the field of big data analytics especially when advance statistical techniques are required, since these techniques are new and they are not covered by current courses and should be taught as a special topic course.

STA 7XXX **COS-STAT** **3(3,0)**

Dimension Reduction in Regression: PR: STA 6236 or STA 5206. Reducing the number of random variables/features in regression, feature selection and extraction, kernel principal component analysis, locally linear embedding. *Occasional.*

Abbrev: (27 of 30 chars) Dim Reduction in Regression

Discussion with others: Contacted Biomedical Sciences, Bioinformatics, Sociology, Electrical & Computer Engineering, Industrial Engineering & Management, Psychology, Anthropology, Education & Human Performance, and Computer Science. See attached email.

Rationale: With increasing big data and abundant of features to be extracted in regression, dimension reduction (DR) is crucial for successful employment and interpretation. We review classic DR techniques like LDA, PCA and will discuss the recent development of nonparametric variants like Sliced Inversion Regression (SIR), semi-parametric variants like kernel PCA and linear embedding.

STA 7XXX **COS-STAT** **3(3,0)**

Statistical Asymptotic Theory in Big Data: PR: STA 6327 and STA 6704. Asymptotic theory of statistics, with an array of applications to motivate as well as demonstrate its utility in addressing problems in Big Data research. *Even Fall.*

Abbrev: (30 of 30 chars) Sta Asymptotic Theory Big Data

Discussion with others: Contacted Electrical & Computer Engineering, and Computer Science. See attached emails.

Rationale: Big data analytics require techniques to examine convergence of algorithms. This course will introduce students to some of the important statistical ideas of large-sample theory without requiring any mathematics beyond calculus and linear algebra. In particular, no measure theory is required. Furthermore, the level of mathematical rigor will be high even if the level of the mathematics is not. In particular, understanding and writing proofs will be vital.

Majors taking course: Big Data Analytics PhD students

STA 7XXX **COS-STAT** **3(3,0)**

Statistical Learning Theory: PR: STA 6329, STA 6327, and STA 6106. Discuss when statistical learning algorithms work and why by focusing on developing a theoretical understanding of the statistical properties of learning algorithms. *Even Fall.*

Abbrev: (27 of 30 chars) Statistical Learning Theory

Discussion with others: Contacted Computer Science, Industrial Engineering & Management, and Electrical & Computer Engineering. See attached emails.
Rationale: There has been a significant expansion of big data and the common techniques used to analyze these data are computer algorithms without theoretical justifications. This course will provide statistical framework for studying the problem of inference, making predictions or decisions from a set of data. Statistical learning theory allows us to better understand the theory behind machine learning algorithms. So, it will make things more precise and derive new or improved algorithms.
Majors taking course: Big Data Analytics PhD

STA 7XXX **COS-STAT** **3(3,0)**
Survival Analysis: PR: STA 6326 and STA 6327, or C.I. Censoring, hazard and survival functions, Kaplan-Meier estimator, lifetime table, partial likelihood, Cox proportional hazards model, accelerated failure time model. *Even Spring.*
Abbrev: (17 of 30 chars) Survival Analysis
Discussion with others: Contacted Biomedical Sciences, Bioinformatics. See attached email. Rationale: Survival analysis is a collection of statistical methods that are used to describe,
explain, or predict the occurrence and timing of events. Survival analysis is a major analytical tool used in clinical studies to evaluate the effect of a new medical treatment or a newly developed drug, etc. These same methods are also appropriate for studying social phenomena including births, marriages, divorces, job terminations, promotions, arrests, migrations, and revolutions. Although some methods of survival analysis are purely descriptive (e.g., Kaplan-Meier estimation of survival functions), most applications involve estimation of regression models, which come in a wide variety of forms.

2. Special Topics Additions

College of Education and Human Performance Special Topics Additions

MHS 6938 **ED-CFCS** **3(3,0)**
Advanced Diagnosis and Treatment Approaches: Applications of Neuroscience in Counseling Practice: PR: Graduate standing or C.I. Students will learn basic neuroscience concepts that propose how the human brain impacts and is impacted by counseling models and techniques. *Occasional.*
Abbrev: (28 of 30 chars) Advanced Diagnosis Treatment
Discussion with others: Dr. Gulnora Hundley (Counselor Education) contacted Dr. Jeffrey Cassisi (Psychology Department Chair) who supports Dr. Hundley's efforts and has no objections to the development of the course. Furthermore, Dr. Bonnie Yegidis (School of Social Work Director and Professor) indicated that she saw no problem in the Counselor Education program offering a course on Neuroscience. Please see the attached emails as affirmations.

College of Engineering and Computer Science Special Topics Additions

TTE 6938 **ECS-CECE** **3(3,0)**

Geographic Information Systems (GIS) Application for Transportation: PR: TTE 5204 or STA 5206 or ESI 5219. Exploring a variety of advanced Geographic Information Systems (GIS) techniques and spatial statistical modeling methods that can be applied in transportation engineering and safety analysis. *Occasional.*

Abbrev: (17 of 30 chars) GIS for Transport

Discussion with others: The suggested course was discussed with the Department Chair, Professor Dr. Mohamed Abdel-Aty and Dr. Dingbao Wang (who teaches several GIS related courses). We concluded that although there are many GIS classes offered none of the GIS classes are exclusively offered for transportation engineering. GIS tools for transportation are quite different from other fields. For example, network analysis tools such as finding the best route, closest facilities, creating OD cost matrix are not covered by the GIS classes from other departments. Also, advanced spatial modeling techniques will be covered for traffic crash analysis (e.g., Spatial lag models, Geographically Weighted Regression (GWR), etc.).

Dr. John Walker (Anthropology) suggested a new GIS certificate program to the College of Graduate Studies and it has been approved. He agreed to include the proposed courses, "GIS Application for Transportation", as an elective course for the new GIS certificate program.

Tabled 10/26/2016, with 1 opposed. Needs discussion with Biomedical Sciences.

EEL 5937 **ECS-ECE** **3(3,0)**

Advanced Bioelectronics Systems: PR: EEE 4309C or C.I. Advanced bioelectronics systems and techniques that enable recent biophysical and biomedical research will be discussed. *Occasional.*

Abbrev: (30 of 30 chars) Advanced Bioelectronics System

EEL 6938 **ECS-ECE** **3(3,0)**

Network Economics and Architectures: PR: EEL 4781 or similar. Principles of internet working architectures; and their projections on function placement and decomposition as well as various network protocol elements such as routing, naming, and addressing. Implications of network economics on the evolution and practice of network architectures and systems. Multi-provider inter-ISP economics: Pricing, peering, edge-to-edge tussle, neutrality, fairness, and openness. Networking and population effects and their impact on the scale of the network design: power laws and scale-free composition. *Occasional.*

Abbrev: (30 of 30 chars) Network Economics Architecture

Discussion with others: We have discussed over emails with Dr. Jun Wang (ECE), Dr. Mainal Chatterjee (CS), Dr. Mostafa Bassiouni (CS). They identified possible overlaps and we have adjusted the syllabus accordingly. They all encouraged a course with an emphasis on network economics covered along with recent advances in network systems. Dr. Mark Dickie in Economics provided the following "Thank you for sending the proposal. This looks like a good course which does not overlap with any current offerings in Economics."

3. Course Revisions

College of Arts and Humanities Course Revisions

THE 6948 Professional Internship ~~3(3,0)~~ 4(4,0)

PR: Admission to the MFA ~~Musical Theatre majors.~~ Acting program.
Field work as company members of the ~~Seaside Musical Theatre professional theatre.~~ Orlando Shakespeare Theatre.
Term Offered: ~~Occasional~~ Odd Fall,Even Spring
Repeat For Credit: ~~No~~ Yes Max Times: ~~1~~ 2
Rationale: We no longer have a partnership with the Seaside Musical Theatre (which is no longer in operation) and are now partnered with the Orlando Shakespeare Theatre.
Majors taking course: MFA Acting

TPP 5156C Acting Studio I 3(2,2)

PR: Admission to ~~Theatre~~ the MFA Acting ~~or Musical Theatre Track.~~ program.
An advanced scene study course ~~with emphasis on~~ using Shakespeare's canon to explore scene ~~analysis and~~ analysis, character ~~development~~ development, and application of acting ~~techniques in modern contemporary American plays.~~ techniques.
Term Offered: Odd Fall
Rationale: To modify the course to strengthen the actor training in the MFA Acting program.
Majors taking course: MFA Acting

TPP 5157C Acting Studio II 3(2,2)

PR: TPP 5156C.

Advanced scene study course applying acting methodologies to the works of modern ~~(1850-) European playwrights with emphasis on the works of Ibsen/Chekhov/Shaw.~~ playwrights.
Term Offered: Even Spring
Rationale: To modify the course to strengthen the MFA Acting program. Majors taking course: Acting MFA

TPP 5715C Stage Voice I 2(2,1)

PR: Admission to the MFA ~~performance~~ Acting program.
~~An introduction/review class examining~~ Fundamentals of breathing and vocal production. Combination of various voice methodologies, focusing on the ~~fundamentals of speaking on stage: the correct production of sound, breathing,~~ relaxation of physical ~~tension,~~ tension and ~~articulation~~ articulation.
Term Offered: Odd Fall
Rationale: To modify the course description to introduce new methodologies in stage voice training to MFA Acting students.
Majors taking course: MFA Acting

TPP 5716C **Stage Voice II** **2(2,1)** PR: Admission to ~~the~~ MFA ~~Performance program and TPP 5715C or C.I.~~ Acting program.
Continuation of ~~Graduate~~ Stage Voice ~~Production~~ I, ~~studying~~ including Skinner's ~~narrow transcription with consonants, review~~ IPA and application of ~~all Linklater work, and introduction~~ physical vocal techniques to ~~the work of Arthur Lessac.~~ longer texts.
Term Offered: Even Spring
Rationale: To modify the course description to introduce new methodologies in stage voice training to MFA Acting students.
Majors taking course: MFA Acting

~~**TPP 6146**~~ **Acting Studio III**
3(2,2) TPP 6146C
PR: TPP ~~5157C.~~ 5157C: Acting Studio II.
An advanced acting course ~~dealing with Shakespeare~~ applying acting methodologies to the works of classical playwrights and ~~other verse playwrights, with emphasis on verse, scene analysis and character development.~~ a variety of styles.
Term Offered: Even Fall
Rationale: To modify the course to strengthen the actor training in the MFA Acting program. Majors taking course: MFA Acting

TPP 6186C **Advanced Scene Study** ~~**3(3,1)**~~ **2(2,1)**
PR: ~~TPP 5156C.~~ Admission to MFA Acting program.
Acting ~~process and craft~~ techniques related to ~~the commercial theatre.~~ all forms of theatre including TYA, commercial, and new play development.
Term Offered: ~~Occasional~~ Odd Fall
Rationale: Due to being scheduled in conjunction with the professional theatre schedule, this course requires less lab time and less face-to-face time.
Majors taking course: MFA Acting

TPP 6267 ~~**Acting Studio V: TV/FILM**~~ **Acting Studio IV** ~~**3(3,0)**~~ **2(2,1)**
PR: TPP ~~6518C and MFA Theatre Graduate.~~ 6146.
~~Technical~~ An advanced acting class that focuses on the technical and practical aspects of acting for ~~Film~~ film and ~~Television.~~ television.
Abbrev (16 of 30): ~~Acting Studio V: TV/FILM~~ Acting Studio IV
Term Offered: Odd Spring
Rationale: This course requires less face-to-face time and more lab time.
Majors taking course: MFA Acting

TPP 6717C **Stage Voice III** **2(2,1)**
PR: ~~Grad Voice Stud II.~~ Admission to MFA Acting program.
~~A continuation~~ Continuation of ~~the work started in~~ Stage Voice I and ~~II. Study~~ II, focusing on Shakespeare's use of ~~Shakespeare's language and text in performance.~~ language.
Term Offered: Even Fall

Rationale: To modify the course description to introduce new methodologies in stage voice training to MFA Acting students.
Majors taking course: MFA Acting

College of Education and Human Performance Course Revisions

EDF 7407 Research in Educational Leadership 2 3(3,0)
PR: EDF 7471 and ~~EDF 6481.~~ admission to the EdS or EdD in Educational Leadership.
Methods applied to statistical problems and resolution of selected problems appropriate for statistical applications is the focus of the course.
Discussion with others: There are no conflicts as the course was designed and approved as an educational leadership course in 2009/2010 academic year.
Rationale: The prerequisite is being changed from EDF 6481 to EDF 7471 and admission in the EdS and EdD program, as many master's degree programs no longer include EDF 6481 as a requirement, including the MED in Educational Leadership.
Majors taking course: EdS and EdD in Educational Leadership

EDF 7471 Research in Educational Leadership I 3(3,0)
PR: ~~EDF 6481.~~ Admission to the EdS or EdD in Educational Leadership.
Study, analysis, and understanding of applied educational research methods are the focus of the course.
Discussion with others: There are no conflicts as the course was designed and approved as an educational leadership course in 2009-2010.
Rationale: The prerequisite is being changed from EDF 6481 to admission to the EdD or EdS program as many master's degree programs no longer include EDF 6481 as a requirement, including the MED in Educational Leadership.
Majors taking course: EdS and EdD in Educational Leadership

College of Engineering and Computer Science Course Revisions

CWR 5545 Water Resources Engineering 3(3,0)
PR: CWR ~~4633C~~ 4120 or C.I.
Systems identification and solution to complex water allocation problems, and other hydraulic engineering designs and operations using economic analysis and operations research techniques.
Rationale: Updating PR due to course changes

CWR 6235 Open Channel Hydraulics 3(3,0)
PR: CWR ~~4633C~~ 4202C or C.I.
Free surface flow studies by empirical and theoretical methods for the design, operation, and management of open channels.
Rationale: updating PR

CAP 6135 Malware and Software Vulnerability Analysis 3(3,0)
PR: ~~CNT 4704~~ Digital Forensics MS major or ~~equivalent and CGS 5131,~~ CDA 5106 or ~~C.I.~~ COT 5405.

Analyzes computer malicious codes, such as virus, worm, trojan, spyware, and software vulnerabilities, such as buffer-overflow.
Term Offered: ~~Odd Fall~~ Spring
Rationale: Updating PRs to allow other programs to take course

CIS 6395 **Incident Response Technologies** **3(3,0)**
PR: ~~CGS 5131 and CNT 6418,~~ Digital Forensics MS major or ~~C.I.~~ CDA 5106 or COT 5405.
This course covers security incidents and intrusions. Topics include: identifying and categorizing incidents, responding to incidents, log analysis, network traffic analysis, and tools.
Rationale: Updating PRs to accommodate students in other programs
There are no programs that list CIS 6395.

CNT 6519 **Wireless Security and Forensics** **3(3,0)**
PR: ~~CGS 5131~~ Digital Forensics MS major or ~~C.I.~~ CDA 5106 or COT 5405.
Advanced topics in wireless network security, security management, cryptography, wireless forensics and related areas.
Term Offered: ~~Even Spring~~ Fall
Rationale: Updating PRs to allow other programs to take

College of Graduate Studies Course Revisions

IDS 6257 **~~Fundamentals of Nano Biophysics~~ Principles and Techniques of Nanobiology** **3(3,0)**
PR: Admission to the Nanotechnology PSM or MS program, or C.I.
This course aims to integrate multi-disciplinary approaches covering physics, biology, and nanoscience to understand how living system works at the nanoscale.
Abbrev (29 of 30): ~~Nano Biophysics~~ Principles/Techniques Nanobio
Rationale: Changing the title to reflect concerns from the Physics department about potential conflicts with an existing course in this department.
Majors taking course: PSM and MS program in Nanotechnology

IDS 6258 **~~Advanced Materials for Rechargeable Batteries~~ Advanced Materials and Nanotechnology for Rechargeable Batteries** **3(3,0)**
PR: Admission to the PSM in Nanotechnology and Intro Nanosci Nanotech, or C.I.
Build a bridge between nanomaterials and electrochemical energy storage performance and demonstrate renewable energy storage on the nanoscale.
Rationale: Changing the title to reflect the course topic more accurately.

College of Health and Public Affairs Course Revisions

SPA 6204 **Articulation/Phonological Disorders** **3(3,0)**
PR: Admission to M.A. in Communication Sciences and Disorders or C.I.
Advanced theory, diagnosis, and treatment of articulation/phonological disorders including developmental apraxia of speech, dysarthria, and cleft palate; communicative differences vs. disorders emphasized.

SPA 6211C Voice Disorders 4(3,1)
PR: Admission to M.A. in Communication Sciences and Disorders or C.I.
Study of the etiology, evaluation, and management of voice disorders in children and adults, with laboratory demonstration and participation.

SPA 6474 Assessment and Management of Culturally and Linguistically Diverse Populations 3(3,0)
PR: Admission to MA in Communication Sciences or C.I.
Role of native and second languages, dialects and culture in the assessment and management of individuals from culturally and linguistically diverse backgrounds.

SPA 6496 Language Disorders in Children and Adolescents 6(6,0)
PR: Admission to M.A. in Communication Sciences and Disorders or C.I.
The nature, assessment and management of spoken and written language disorders in children and adolescents.

SPA 6943C Clinical Practice Level I 3(1,4)
PR: SPA 6942, SPA 6942L.
Clinical practicum for the demonstration of knowledge and skill application in the diagnosis, treatment and management of persons with complex communication disorders across the lifespan.

HSA 6178 Financial Management for Health Care Managers 4(4,0)

PR: Admission to Health Sciences M.S., Executive Health Services Administration ~~track.~~ track; HSA6179.
Application and integration of advanced accounting and financial principles to develop solutions to specific problems encountered in today's health care organizations.
Rationale: To ensure students progress through the program with the appropriate course sequence

PHT 5125L **Clinical Kinesiology Lab** **2(0,4)**
CR: PHT 5125.
Graduate level study of human musculoskeletal movement with an emphasis on joint mechanics and clinical applications.

PHT 5218L **Theories and Procedures I lab** **1(0,2)**
CR: Theories and Procedures I.
Lab course on the clinical applications of heat, light, cold, water, sound, and massage.

PHT 5240L **Physical Assessment Lab** **2(0,4)**
CR: Physical Assessment.
Lab course emphasizing the examinations required to perform an evaluation of physical therapy patient.

PHT 5260L **Patient Care Skills Lab** **1(0,2)**
CR: Patient Care Skills.
Skills of patient care, transfers, mobility skills.

PHT 5718L **Neurological Physical Therapy Lab** **1(0,2)**
CR: Neurological Physical Therapy.
Lab Course emphasizing the clinical application of selected neuromotor theories.

PHT 6115C **Gross Anatomy/Neuroscience I** **6(3,6)**
PR: Admission to DPT program.
Study of human anatomy via lecture and cadaver dissection emphasizing upper and lower extremity, muscoloskeletal, peripheral vascular and peripheral nervous systems, thoracic and abdominopelvic cavities.

PHT 6118C **Gross Anatomy/Neuroscience II** **6(3,6)**
PR: Gross Anatomy/Neuroscience I.
Comprehensive study of anatomy and physiology of the nervous system to develop DPT students' improved treatment strategies for patients with neurological problems.

PHT 6156C **Applied Human Physiology for Health Sciences** **5(3,2)**

PR: Admission to the Doctor of Physical Therapy program.
Course provides in-depth study of human cardiovascular, hemopoietic, respiratory, gastrointestinal, renal and reproductive systems with emphasis on mechanisms responsible for maintaining homeostasis.

PHT 6219L Theories and Procedures II Lab 1(0,2)
PR: Theories and Procedures I and lab; CR: Theories and Procedures II.
Lab course focusing on electrodiagnosis and electrophysiologic examinations, and the interventions used in the treatment of pain and dysfunction.

PHT 6242L Orthopedic Physical Therapy Lab 1(0,2)
CR: Orthopedic Physical Therapy.
Lab course emphasizing the examinations and interventions for the evaluation and treatment of specific orthopedic cases and injuries.

PHT 6719L Advanced Neurological Physical Therapy 1(0,2)
PR: PHT 5718L: CR: PHT 6719.
Course Emphasizing examinations and interventions for the evaluation and treatment of patients with neurological disease. Emphasis on patients with spinal cord injury and neurological disease.

College of Optics and Photonics Course Revisions

OSE 6125 Computational Photonics 3(3,0)
PR: Graduate standing, OSE ~~6111and OSE 6432,~~ 6111 or C.I.
Computational methods for photonic guided wave structures, periodic structures, and integrated photonic structures and devices.
Discussion with others: Requested approval from both Physics and Engineering. Engineering (Kalpathy Sundaram) approved to go forward. Physics (Eduardo Mucciolo) approved to go forward.
Rationale: This is an update to pre-requsites only. Majors taking course: None - elective only

OSE 6421 Integrated Photonics 3(3,0)
PR: Graduate ~~standing~~ standing, OSE 6111 or C.I.
Reviews working principle, system functionality and design and fabrication issues of semiconductor integrated photonic devices and circuits for optical telecommunication and interconnect applications.
Discussion with others: Request sent to Physics and EE for approval to go forward. EE - Approval received from Kalpathy Sundaram. Physics - Approval received from Eduardo Mucciolo. Rationale: This is a pre-requisite update only
Majors taking course: elective course in Optics

OSE 6445 Fundamentals of Ultrafast Optics 3(3,0) PR: Graduate standing, and ~~OSE 5041 or~~ OSE 6111 or PHY 5346, and OSE 6525, or C.I.
Introductory concepts: Ultrafast Optical Signal Generation, Ultrafast Signal Detection,

Ultrafast Optical Signal Transmission, and Ultrafast Optical Signal Processing.
Discussion with others: Requested approval to go forward from EE and Physics. EE - Approval received from Kalpathy Sundaram. Physics - Approval received from Eduardo Mucciolo. Rationale: This is a pre-requisite update only.

OSE 6447 Attosecond Optics 3(3,0)
PR: Graduate standing, and OSE 6349 or PHY 5606, and OSE ~~5041 or OSE~~ 6111 or PHY ~~5346,~~ 5346 or OSE 6525, or C.I.
Introduction of the forefront of attosecond optics research. Topics include the fundamental theories and latest journal publications.
Discussion with others: Request sent to EE and Phy to approve to go forward with update. EE - Approved to go forward by Kalpathy Sundaram. Physics - Approved to go forward by Eduardo Mucciolo.
Rationale: Course OSE 5041 is no longer a required course, and should be removed as a pre-requisite for this class.
Majors taking course: none required.

OSE 6525 Laser Engineering 3(3,0)
PR: Graduate standing ~~and OSE 5041~~ or C.I.
Principles of laser amplification and oscillations; design of lasers; general characteristics of excitation systems.
Discussion with others: Request send to EE and Physics to get approval to go forward. EE - Approval received from Kalpathy Sundaram. Physics - Approval received from Eduardo Mucciolo. Rationale: Course OSE 5041 is no longer a required course in our program. This is a pre-requisite update only
Majors taking course: Optics MS and Optics
PhD

College of Sciences Course Revisions

BSC 6935 Seminar in Biology 1(1,0)
PR: Admission to Biology M.S. or Ph.D. in Conservation ~~Biology graduate certificate~~ Biology, or Certificate in Conservation Biology, or C.I.
Discussions and presentations addressing current research in the field of Biology. Graded S/U. May be used in the degree program a maximum of 2 times.
Rationale: "Ph.D. in Conservation Biology" should be included in the prerequisites statement because it is also a requirement for all Biology PhD students.

PCB 6095 Professional Development in Biology I 1(1,0)
PR: Admission to the M.S. in ~~Biology~~ Biology, Ph.D. in Conservation Biology, or Certificate in Conservation Biology, or C.I.
Methods in experimental design, research, and the ethics of animal research. Graded S/U.
Rationale: "Ph.D. in Conservation Biology" should be included in the prerequisites statement because it is also a requirement for all Biology PhD students.

PCB 6096 Professional Development in Biology II 1(1,0)

PR: Admission to the M.S. in ~~Biology~~ Biology, Ph.D. in Conservation Biology, or Certificate in Conservation Biology, or C.I.
Preparation and presentation of research grants, scientific presentations, and scientific papers. Graded S/U.

Rationale: "Ph.D. in Conservation Biology" should be included in the prerequisites statement because it is also a requirement for all Biology PhD students.

~~PSY 6318~~ Recruitment, Placement and Selection 3(3,0)
INP 6318
PR: PSY 6308C and admission to Industrial Organizational Psychology M.S., or C.I.
Issues related to recruiting, placing, and selecting employees and an examination of currently used tests in industry.
Rationale: The prefix was originally incorrectly assigned

4. Course Deletions

College of Arts and Humanities Course Deletions

CRW 5020 CAH-ENG 3(3,0)
Graduate Writing Workshop PR: Admission to Creative Writing MFA and C.I. Student writers present their own work, receiving detailed analysis of its strengths and weaknesses from their fellow writers and from the teacher. May be used in the degree program a maximum of 5 times.
Discussion with others: n/a
Rationale: We no longer offer this course since our students need 6xxx level courses to fulfill Graduate College requirements. We offer CRW 6025 Advanced Graduate Workshop each fall and spring semester.

ENG 6802 CAH-ENG 3(3,0)
Literature, Texts, and Technology PR: Graduate standing or C.I. The relationship of literature to various modes of theories and technology and the impact of these technologies on literary meaning on a variety of texts.
Discussion with others: n/a
Rationale: The course has not been taught in more than five years and does not form part of any of our programs of study. More specific courses have been developed in the Texts and Technology PhD program that make the course unnecessary for that program.

EUH 5285 CAH-HIST 3(3,0)
Colloquium in Europe Since World War II PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics in European history since WW II.
Discussion with others: n/a
Rationale: Superseded by newer courses.

EUH 5415 CAH-HIST 3(3,0)

Rome and Early Christianity PR: Graduate standing or C.I. Current trends in historical literature in Christianity from its development as a distinct religion to its relations with and eventual "triumph" within the Roman Empire.
Discussion with others: n/a
Rationale: Superseded by newer courses.

LAH 5713 CAH-HIST 3(3,0)
Colloquium in U.S.-Latin American Relations PR: Graduate status or senior standing or C.I. The course will analyze U.S.-Latin American relations from an historical perspective. It will be presented through readings and discussion of selected materials.
Discussion with others: n/a
Rationale: Superseded by newer courses.

SPW 5795 CAH-LANG 3(3,0)
Jewish Culture in Latin America PR: Spanish M.A. program or graduate student proficient in Spanish. History of the arrival of Jews in Latin America and studies of Latin American Jewish authors and literature. Will be taught in Spanish, including all readings.
Discussion with others: n/a
Rationale: This course was intended to be used as a program elective. Faculty member who designed this course is no longer at UCF and the course content does not align with current faculty members' areas of expertise.

TSL 6602 CAH-LANG 3(3,0)
Second Language Vocabulary Research Seminar PR: Admission to Teaching English to Speakers of Other Languages M.A. or Teaching English to Speakers of Other Languages Ph.D. programs. Trains students in conducting original primary research of current lexical issues, based on extant secondary research studies pertaining to English language learners.
Discussion with others: n/a
Rationale: This course has not been offered in recent memory. TSL 6600 is very similar and has been offered once a year. We believe TSL 6600 is sufficient for our students' needs.

ART 5670C CAH-SVAD 3(2,4)
Digital Illustration CR: ART 6683C. Methods and media effects usually associated with traditional illustration in a digital platform.
Discussion with others: n/a
Rationale: ART 5670C Digital Illustration does not fit in the current curriculum and has not been taught in five years. At this time, there is no intent to offer it.

DIG 6550 CAH-SVAD 3(3,0)
Digital Media Pre-Production PR: Film and digital media majors, DIG 6546, or C.I. Methodologies for digital media design, scoping, prototyping, presentation, and integration, culminating in developed plan for new media projects.
Discussion with others: n/a
Rationale: Course has not been offered for a significant time and is no longer needed.

College of Business Administration Course Deletions

ECO 6453 **BA-ECON** **3(3,0)**
Experimental Economics PR: ECO 6118 (or equivalent) and ECO 6403 (or equivalent). Introduction to the use of experimental methods in economics: motivation, design, analysis, and policy implications of this methodology.
Discussion with others: Not Applicable
Rationale: This course is not part of any degree program

ECO 6505 **BA-ECON** **3(3,0)**
Public Economics PR: ECO 6118 or equivalent. and ECO 6403 or equivalent. Analysis of how government activities influence resource allocation, relative prices, and welfare, including public goods theory, tax incidence, and optimal taxation theory.
Discussion with others: Not Applicable
Rationale: This course is not part of any degree program

ECO 7117 **BA-ECON** **3(3,0)**
Advanced Topics in Economic Theory PR: ECO 7116 and ECO 7205. Advanced topics in economic theory, including comparative statics, atemporal duality theory, comparative dynamics and intertemporal duality theory, differential game theory, and the economics of information.
Discussion with others: Not Applicable
Rationale: This course is not part of any degree program

ECO 7205 **BA-ECON** **3(3,0)**
Macroeconomic Theory II PR: ECO 6206 (or equivalent), ECO 6403 (or equivalent), and ECO 6118 (or equivalent). The study of classical, neoclassical, and endogenous growth theories and their application to contemporary economic problems.
Discussion with others: Not Applicable
Rationale: This course is not part of any degree program

ECP 7306 **BA-ECON** **3(3,0)**
Environmental Economics PR: ECP 6309. The application of economic theory and methods to the evaluation of the effects of economic activity on the environment with selected applications.
Discussion with others: Not Applicable
Rationale: This course is not part of any degree program

ECP 7307 **BA-ECON** **3(3,0)**
Research Seminar PR: ECO 7426, ECP 7311, ECP 7306, or C.I. Students conduct and evaluate research in their chosen field of specialization. Student projects are prepared with faculty consultation and are presented as part of the seminar.
Discussion with others: Not Applicable
Rationale: This course is not part of any degree program

ECP 7311 **BA-ECON** **3(3,0)**
Natural Resource Economics PR: ECP 6309. Advanced treatment of dynamic principles in optimal renewable and nonrenewable resource consumption and the role of natural resources in economic development and international trade.
Discussion with others: Not Applicable
Rationale: This course is not part of any degree program

GEB 6515 **BA-MAN** **1.5(1.5,0)**
Innovation Management PR: Admission to approved College of Business Administration graduate program, C.I. Course focuses on the management of technological innovation. Topics include new product development, types of technological change, technology new ventures, and corporate renewal.
Discussion with others: NA
Rationale: Course not offered in 5 years. Course is really a 1.5 hour credit class, but UC2 system would not let me submit without changing the credits.

MAN 5037 **BA-MAN** **1.5(1.5,0)**
Management Foundations PR: Graduate standing or C.I. Theory and practice of managing organizations to include planning, organizational theory, human behavior, and control.
Discussion with others: NA
Rationale: Course has not been taught in 5 years. Course is a 1.5 credit hour course, but UC2 system would not allow me to submit without changing format of hours to 1.

MAN 5050 **BA-MAN** **2(2,0)**
Management Concepts PR: Acceptance in MBA program. Theory and practice of managing organizations to include planning, organizational theory, human behavior, and control.
Discussion with others: NA
Rationale: Course has not been taught in 5 years.

MAN 6068 **BA-MAN** **1.5(1.5,0)**
Business Ethics and Social Responsibility PR: Admission to approved an Business Administration graduate program, C.I. A broad understanding of decision making within the context of ethical, social responsibility, and diversity issues in business.
Discussion with others: NA
Rationale: Course has not been taught in 5 years. Course is a 1.5 credit hour course, but UC2 system would not let me submit without changing the credit hour format to 1.

MAN 6116 **BA-MAN** **3(3,0)**
Managing A Diverse Workforce PR: MAN 6285. Course designed to provide students with an understanding of managing a diverse workforce.
Discussion with others: NA
Rationale: Course has not been taught in 5 years.

MAN 6158 **BA-MAN** **3(3,0)**
Human Resources Management Issues PR: MAN 6305 or C.I. A course providing advanced study in selected topics of current interest in human resource management.
Discussion with others: NA
Rationale: Course has not been taught in 5 years.

MAN 6299 **BA-MAN** **3(3,0)**
Creative and Innovative Management PR: Graduate standing or C.I. This course examines the

emerging theories and practices related to creative and innovative management. It combines the creativity of new concepts, new ideas, new directions, and the like with their innovative implementation in a management context.
Discussion with others: NA
Rationale: Course has not been taught in 5 years.

MAN 6323 BA-MAN 3(3,0)
Human Resources Information Systems PR: MAN 6305 or C.I. Planning, designing, selecting, implementing, and maintaining human resource information systems.
Discussion with others: NA
Rationale: Course has not been taught in 5 years.

MAN 6449 BA-MAN 3(3,0)
Alternative Dispute Resolution PR: Graduate standing or C.I. Theory and practice of conciliation, mediation, fact finding, and arbitration as alternatives to business litigation.
Discussion with others: NA
Rationale: Course has not been offered in over 5 years

MAN 6508 BA-MAN 3(3,0)
Service Organizations and Operations Management PR: Acceptance in a graduate business program of study. In-depth study of the unique characteristics, challenges, and quantitative techniques associated with managing organizations in the service sector.
Discussion with others: NA
Rationale: Course has not been taught in 5 years.

MAN 6515 BA-MAN 3(3,0)
Research and Development Management PR: Graduate standing and MAN 5050. An examination of the function of research and development and the impact of technological innovation on our economic and social systems.
Discussion with others: NA
Rationale: Course has not been taught in 5 years.

MAN 6581 BA-MAN 3(3,0)
Project Management PR: Acceptance into a graduate business program of study. Examination of project management, the role it plays in the strategic focus of the organization, and its importance in satisfying the needs of customers.
Discussion with others: NA
Rationale: Course has not been taught in 5 years.

MAN 6774 BA-MAN 1.5(1.5,0)
Executive Leadership PR: Admission to approved an Business Administration graduate program, C.I. Review of organizational leadership theory and practice. Special attention given to contemporary issues such as transactional and transformational leadership, diversity, and social responsibility.
Discussion with others: NA
Rationale: Course has not been taught in 5 years. Course is a 1.5 credit hour course, but UC2 system would not let me submit without changing the credit hour format to 1.

MAN 7075 **BA-MAN** **3(3,0)**

Foundations of the Management Discipline PR: PhD standing. Presents seminal contributions that have profoundly affected the evolution of the management discipline, and examines social dynamics that influence the development of ideas.

Discussion with others: NA

Rationale: Course has not been taught in 5 years.

MAN 7306 **BA-MAN** **3(3,0)**

Seminar in Human Resources Management PR: Graduate standing or C.I. Course provides a graduate level overview of theory and research in human resources management. Topics covered include human resources strategy, legal issues, staffing, training, performance appraisal and compensation.

Discussion with others: NA

Rationale: Course has not been taught in 5 years.

MAN 7777 **BA-MAN** **3(3,0)**

Corporate-level Strategic Management PR: Admission to doctoral program and C.I. In-depth review of the classic and modern corporate-level strategy research literature, which deals with topics such as diversification, cooperative alliances and acquisitions strategies.

Discussion with others: NA

Rationale: Course has not been taught in 5 years.

ISM 6023 **BA-MIS** **3(3,0)**

Information Systems Usability PR: CBA master's program of study foundation core, MS MIS foundation core, or C.I. Students learn and apply the theories and methods of information systems usability, with an emphasis on user-centered design.

Discussion with others: NA

Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6121 **BA-MIS** **3(3,0)**

Advanced Information Systems Analysis and Design PR: MS MIS technical foundation core and CBA master's program of study foundation core. This course covers advanced topics of information systems development, including analysis of system requirements, design, implementation and operation.

Discussion with others: NA

Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6158 **BA-MIS** **3(3,0)**

ERP Implementation PR: ISM 6121, ISM 6217. The course is an overview of Enterprise Resource Planning (ERP). It focuses on the impact of ERP systems on

organizations. Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6217 BA-MIS 3(3,0)
Advanced Database Administration PR: MS/MIS Technical Foundation Core and CBA master's program of study foundation core. This course covers various database technologies in business organizations, including database systems, multidatabase systems, data warehousing, data mining, and object-oriented databases.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6227 BA-MIS 3(3,0)
Management of Telecommunications PR: MS/MIS Technical Foundation Core and CBA master's program of study foundation core. This course will focus on the strategic management of networks (voice, video, image, and data). Coverage includes network management systems, LANs and the internet.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6305 BA-MIS 3(3,0)
Information Resources Management PR: CBA master's program of study foundation core. This course provides an investigate of issues relevant to effectively managing IT activities and the challenges facing IT managers and some potential solutions to deal with them.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6367 BA-MIS 3(3,0)
Strategic Information Systems PR: MBA Professional Core I. Management and strategic use of enterprise digital platforms (i.e., enterprise resource planning, customer relationship management, supply chain management) to support internal and external business partnerships.
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6368 BA-MIS 3(3,0)
Business Knowledge Management Systems PR: Admission to MS MIS program. Principles of Organization Knowledge Management (KM), focusing on information systems that assist in the creation and management of knowledge.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6395 BA-MIS 3(3,0)

Seminar - Management Information System PR: ISM 6305, ISM 6121, and graduate standing. This seminar covers theoretical foundations and current research directions in management information systems. Topics include organizational and managerial processing; systems design, development and implementation.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6407 BA-MIS 3(3,0)
Decision Support Systems PR: CBA master's program of study foundation core. This course addresses several aspects of organizational decision-making, including: decision support, operation system management, and data mining.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6422 BA-MIS 3(3,0)
Intelligent Systems for Business Applications PR: CBA master's program of study foundation core and ISM 6407. An introduction to expert systems and data mining in the context of business applications.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6485 BA-MIS 3(3,0)
Electronic Commerce PR: MS MIS Technical Foundation Core and CBA master's program of study foundation core. This course will provide an understanding of electronic commerce, including an overview of the infrastructure and technologies,comparative analysis of markets, e-commerce applications, and website
development. Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6537 BA-MIS 3(3,0)
Quantitative Models for Business Decisions PR: CBA master's program of study foundation core. Quantitative techniques useful for the solution of business problems. Mathematical model building to aid the decision-making process is stressed.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6539 BA-MIS 3(3,0)
Service Organizations and Operations Management PR: CBA master's program of study foundation core. In-depth study of the unique characteristics, challenges, and quantitative techniques associated with managing organizations in the service sector.
Discussion with others: NA

Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 6930 BA-MIS 3(3,0)
Seminar in Management Information Systems PR: MS/MIS technical foundation core and CBA master's program of study foundation core. This course will focus on current MIS topics of technological and management relevance.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 7027 BA-MIS 3(3,0)
Systems Support of Organizational Decision Making PR: Doctoral standing and C.I. This course focuses on support systems for organizational decision making, including knowledge management systems.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 7029 BA-MIS
3(3,0) Organizational Impacts of Information
Technology PR: Doctoral standing and C.I. Examination of impact of IT, IT-based innovation, and IT management in organizations. Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 7317 BA-MIS 3(3,0)
Information System Project Implementation and Management PR: C.I. Research issues in information systems project implementation and management.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 7909 BA-MIS 3(3,0)
Comprehensive Research Project PR: Doctoral standing and C.I. This course allows students to conduct a research project of limited scope from idea to execution to manuscript preparation. Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 7916 BA-MIS 3(3,0)
Seminar on Behavioral Information Systems Research PR: Doctoral standing and C.I. This research seminar focuses on research in the use of information technology by individuals, groups, and organizations.
Discussion with others: NA

Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 7926 BA-MIS 1(1,0)
Management Information Systems Research Forum PR: Doctoral standing and C.I. Research and pedagogical issues in information systems, including research presentations by faculty, doctoral students, and invited scholars.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 7936 BA-MIS 3(3,0)
Seminar on Technical Information Systems Research PR: Doctoral standing and C.I. This research seminar focuses on current research in the technical fields of Information Systems. It covers both research areas and research methods.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

ISM 7938 BA-MIS 3(3,0)
Theoretical Foundations for Information Systems Research PR: Doctoral standing and C.I. This course is a PhD seminar on using theory in information systems research.
Discussion with others: NA
Rationale: MIS major no longer exists. Course has not been taught in over 5 years and will not be taught again in the future.

College of Education and Human Performance Course Deletions

ELD 6146 ED-CFCS 3(3,0)
Instructional Strategies for Students with Learning Disabilities Instructional strategies for students with specific learning disabilities to include development, implementation, and evaluation of individualized educational plans and adaptation of curriculum and materials.
Rationale: This course is no longer offered as a requirement in a CEDHP degree program.

ELD 6944 ED-CFCS 1(0,1)
Diagnostic Learning-Disabilities Laboratory CR: ELD 6112 (Foundations and Diagnosis of LD). A laboratory designed for individual competence measurement of testing evaluation skills.
Rationale: This course is no longer offered as a requirement in a CEDHP degree program.

EMR 6365 ED-CFCS 3(3,0)
Teaching Students with Mental Disabilities Strategies for teaching students with mental disabilities: development, implementation, and evaluation of individualized plans; special approaches to teaching functional skills; developmental programming; data-based management.
Rationale: This course is no longer offered as a requirement in a CEDHP degree program.

EME 6459 **ED-E&HS** **1(1,0)**

Course Design for Hybrid and Online PR: Angel Instructor Training (AIT) and C.I. Participants will master techniques and best practices for hybrid course development and delivery using tools and methods to foster optimal learner engagement and achievement.
Rationale: This course is no longer needed in the CEDHP.

EME 6605 **ED-E&HS** **3(3,0)**

Role of the Media Specialist in Curriculum and Instruction PR: Acceptance into Ed Media Program or C.I. Development of skills in instruction and instructional design. Emphasis on teaching, consultation, and media skills and curricular involvement of the media specialist.
Rationale: This course is no longer needed in the CEDHP.

EME 6706 **ED-E&HS** **3(3,0)**

Administrative Principles in Media Centers PR: Acceptance in Ed Media program or C.I. Principles of planning, evaluating, budgeting, staffing, and marketing the school media program. Development of policies and procedures for the school media center, legislation technology, professionalism.
Rationale: This course is no longer needed in the CEDHP.

HSC 5317 **ED-E&HS** **3(3,0)**

Health Methods: Teaching Strategies and Interventions PR: Admission to Graduate Certificate in Health and Wellness or C.I. Application of the knowledge of teaching strategies, methodology, and curriculum to develop a comprehensive school health program.
Rationale: This course is no longer needed in the CEDHP.

College of Engineering and Computer Science Course Deletions

College of Nursing Course Deletions

NGR 6242 **CON-NURS** **2(2,0)**

Adult II for APNs PR: Admission to MSN program or a nursing certificate track; NGR 6240. CR: NGR 6242L (for ANP track). Development of theoretical foundation for the evaluation, diagnosis, and management of the complex health needs of adults.

Discussion with others: Not applicable
Rationale: Course not longer taught

NGR 6242L **CON-NURS** **2(0,2)**

Adult II Clinical for APNs PR: Admission to M.S. in Nursing program, Nursing certificate, Adult Nurse Practitioner track, NGR 6240; NGR 6240L (Family Nurse Practitioner, Adult Nurse Practitioner tracks). CR: NGR 6242. Application of theory and skills for the evaluation, diagnosis, and management of the complex health needs of adults. Graded S/U. May be repeated for credit. Discussion with others: Not applicable
Rationale: Course no longer taught

NGR 6335 **CON-NURS** **2(2,0)**

Focused Pediatrics for APNs PR: Admission to M.S. in Nursing program, Nursing certificate

or track, NGR 6331, NGR 6331L (for Pediatric Nurse Practitioner students). CR: 6335L (for PNP students). Development of advanced knowledge in the physical and developmental assessment of children and families across the lifespan.
Discussion with others: Not applicable
Rationale: Course no longer taught

NGR 6336 CON-NURS 3(3,0)
Medically Complex Infants and Toddlers PR: Admission to the Infant and Toddler Development Specialist Certificate program or the M.S. in Nursing Program. Biomedical risk factors affecting infant/toddler development and the impact on their families. May be used in the degree program a maximum of 2 times.
Discussion with others: Not applicable
Rationale: Course no longer taught

NGR 6780 CON-NURS 3(3,0) Clinical
Nurse Specialist I PR: NGR 5141; NR 6172, NGR 5720, NGR 5003. Foundation for Clinical Nurse Specialist practice; common clinical problems across the lifespan; role delineation. May be used in the degree program a maximum of 2 times.
Discussion with others: Not applicable
Rationale: Course no longer taught

NGR 6780L CON-NURS 3(0,3)
Clinical Nurse Specialist I Practicum PR: Coreq. NGR 6780, Prereq. NGR 6722. Implementation of the clinical expert, educator, and leadership roles of the Clinical Nurse Specialist. Graded S/U. May be used in the degree program a maximum of 2 times.
Discussion with others: Not applicable
Rationale: Course no longer taught

NGR 6781 CON-NURS 2(2,0) Clinical
Nurse Specialist II PR: NGR 6780, NGR 6780L. Continuation of Clinical Nurse Specialist; management of acute and/or complex patients across the lifespan; consultant, case manager, change agent and research roles. May be used in the degree program a maximum of 2 times.
Discussion with others: Not applicable
Rationale: Course not longer taught

NGR 6781L CON-NURS 3(0,3)
Clinical Nurse Specialist II Practicum PR: NGR 6780 and NGR 6780L, CR: NGR 6781. Continuation of CNS 1. Management of acute and/or complex patients across the lifespan. Consultant, case manager, change agent and research roles. Graded S/U. May be used in the degree program a maximum of 2 times.
Discussion with others: Not applicable
Rationale: Course no longer taught

NGR 6782 CON-NURS 3(3,0)
Adult CNS I PR: Admission to the Doctor of Nursing Practice program, Adult/Gerontology Clinical Nurse Specialist track; completion of NGR 5003, NGR 5003L, NGR 5141, NGR 5720, or

C.I. Clinical Nurse Specialist foundation. Common problems relevant to adult acute care. Clinical Nurse Specialist competencies of direct care, coaching, and ethical decision making. May be used in the degree program a maximum of 2 times.
Discussion with others: Not applicable
Rationale: Course not longer taught

NGR 6782L **CON-NURS** **2(0,2)**
Adult CNS I Clinical CR: NGR 6782. Development of multi-faceted Clinical Nurse Specialist role. Emphasis on clinical expert, coaching, and ethical decision-making competencies of the Clinical Nurse Specialist. Graded S/U. May be used in the degree program a maximum of 2 times.
Discussion with others: Not applicable
Rationale: Course no longer taught

NGR 6819 **CON-NURS** **3(3,0) Client**
Health Empowerment PR: Enrollment in a graduate health program or C.I. Analysis of the research and application of interventions that promote empowerment in health care delivery for diverse populations. May be used in the degree program a maximum of 2 times.
Discussion with others: Course no longer taught
Rationale: Course no longer taught

NGR 7176 **CON-NURS** **3(3,0)**
Advanced Pharmacology for Advanced Practice Nursing PR: Admission to DNP and National Certification for APN Specialty or C.I. Comprehensive understanding and application of pharmacotherapeutics for acute and complex patients throughout the life span. May be used in the degree program a maximum of 2 times.
Discussion with others: Not applicable
Rationale: Course no longer taught

College of Optics and Photonics Course Deletions

OSE 6118 **OPT-OPT** **3(3,0)**
Optical Propagation in Inhomogeneous Media PR: Graduate standing or C.I. Basic concepts of optical wave scattering and propagation in inhomogeneous media with applications to material sciences, optical remote sensing,biomedical optics, imaging, and image analysis.
Discussion with others: Request Sent to EE and Phy to go forward with deletion: EE: Approved by Kalpathy Sundaram. PHY: Approved by Eduardo Mucciolo.
Rationale: This course has only been taught one time in 10 years, and that one instance was more than 5 years ago. There is no intention to offer this course again.

College of Sciences Course Deletions

STA 5045 **COS-COMM** **3(3,0)**
Statistical Analysis of Communication Data PR: STA 2023 or C.I. Descriptive statistics; correlation; bivariate, multiple and logistic regression; reliability and validity; effect size,

power, confidence intervals; one and two sample tests; ANOVA; categorical data analysis.
Discussion with others: NSC deleted course from their curriculum.

Rationale: Course deleted from Communication curriculum; no longer needed. Emails available upon request.

PHY 5455 COS-PHYS 3(3,0)
Modern X-ray Science PR: Graduate status or senior standing or C.I. An introduction to the science and applications of modern X-ray optics, X-ray lasers, etc., with a review of basic properties of X-rays.
Discussion with others: n/a
Rationale: This course was offered by an affiliated faculty who is not interested in offering it again. The course is not seen as a current curriculum priority.

PHY 5650 COS-PHYS 3(3,0)
Introduction to Quantum Computation PR: C.I. Theoretical fundamentals and physical implementations of quantum computation for science and engineering students.
Discussion with others: n/a
Rationale: This course was offered once, but it overlaps with a similar course offered by Computer Science.

PHY 5705 COS-PHYS 1(1,0)
Physics of Graphene and Carbon Nanotubes PR: PHZ 4404 or equivalent, or C.I. Advanced topics in carbon nanotubes and graphene sheets by presentation and discussion of current literature.
Discussion with others: n/a
Rationale: This course has never been offered. There is no faculty willing to teach it and does not constitute a current curriculum priority.

PHY 5846C COS-PHYS 3(3,3)
Methods of Experimental Physics PR: Graduate status or senior standing or C.I. Introduction to methods of experimental physics, including instrumental design, data acquisition, vacuum, cryogenics, sample preparation, nuclear physics, transport, and spectroscopy.
Discussion with others: n/a
Rationale: This was originally a mandatory course for graduate students in the department. As an elective, it is found redundant and not necessary anymore.

PHY 6939 COS-PHYS 1(1,0)
Physics Research Seminar PR: Graduate standing or C.I. Modern experimental and theoretical research methods and current topics will be presented by local and invited researchers in physics. Graded S/U. May be used in the degree program a maximum of 3 times.
Discussion with others: n/a

Rationale: Given the current course load on graduate students in the Physics department, this course is not needed anymore.

PHY 7423 **COS-PHYS** **3(3,0)**
Physics of Nanostructures PR: PHY 6624 or C.I. Electronic properties of mesoscopic nanostructures, conductance as transmission, s-matrix and Green's functions, localization, universal conductance fluctuations, single electron tunneling, chaos, nonequilibrium transport.
Discussion with others: n/a
Rationale: Created by a former physics faculty, it overlaps with another course active in the department.

PHZ 5045 **COS-PHYS** **3(3,0)**
Attosecond Laser Physics PR: PHY 5606, PHY 5346 or PHY 4324, or C.I. Technique for generating attosecond optical pulses using both semi-classical models and quantum mechanics theories. Illustrative examples of attosecond applications.
Discussion with others: n/a
Rationale: This course was created more than five years ago and never offered. Not seen as a curriculum priority by the department at this time.

PHZ 5445 **COS-PHYS** **3(3,0)**
Nanofabrication using Focused Ion Beam PR: Graduate standing or C.I. Basic theory of ion-solid interaction; fundamental principle of focused ion beam instrument and its applications in nanofabrication; other ion beam techniques.
Discussion with others: n/a
Rationale: This course won't be offered anymore. It was too specialized and had low demand.

PHZ 6446 **COS-PHYS** **3(3,0)**
Selected topics in Physics of Semiconductors and Devices PR: PHZ 6426 or C.I. Theory of semiconductor physics and devices.
Discussion with others: n/a
Rationale: This course won't be offered anymore. It was too specialized and had low demand.

INR 6086 **COS-POLS** **3(3,0)**
International Public Policy PR: Graduate standing. Examines endogenous and exogenous variables involved in selected issues in the arena of international public policy.
Discussion with others: n/a
Rationale: Course not offered in 5-years.

INR 6096 **COS-POLS** **3(3,0)**
International Drug Policy PR: Admission to degree-seeking program or C.I. Overview of drug use/abuse around the globe, debating the issues associated with international drug dealing and trafficking and analyzing the U.S. "War on Drugs".
Discussion with others: n/a
Rationale: Course not offered in 5-years.

SYP 5615 **COS-SOC** **3(3,0)**
Sociology of Culture PR: Graduate standing or C.I. Major theoretical approaches and empirical studies in the sociology of culture and analysis of cultural processes.
Discussion with others: None.
Rationale: Course was created by a faculty member no longer with UCF. Currently there are no

faculty available to offer course on an occasional basis.

5. Course Continuations

College of Arts and Humanities Course Continuations

ASH 5229 **CAH-HIST** **3(3,0)**
History of the Middle East PR: Graduate standing or C.I. Selected topics in the history of the modern Middle East. May be used in the degree program a maximum of 2 times only when course content is different.
Rationale: We haven't taught it recently because of scheduling issues. We have hired Dr. Sohns, a specialist in US in the Middle East, who will be teaching this course in Fall 2017.

MUE 5348C **CAH-MUSIC** **4(4,0)**
K-12 Music Methods PR: Graduate standing in Music Education or C.I. Organization and administration of instruction for comprehensive music education, K-12. Instructional planning, techniques, and materials for general, choral, and instrumental music education.
Rationale: We haven't been able to teach the course due to scheduling conflicts. This course will be taught in Spring 2017.

MVK 5650 **CAH-MUSIC** **2(2,0)**
Piano Pedagogy PR: Graduate standing in Music or C.I. Techniques, methods, and experiences of former and current pedagogues to equip students for current or future piano teaching.
Rationale: Recent faculty changes have resulted in altered plans for course offerings. For this time, the school would like to keep this course as an option for future course offerings.

FIL 5414 **CAH-SVAD** **3(3,0)**
Film Vision, Scope & Financing PR: Acceptance to the MFA Film & Digital Media program. Exploration of the creative and business challenges filmmakers encounter when working on a screenplay, including financing, making, and distributing a digital, microbudget motion picture.
Rationale: We request to continue this course so that it may be incorporated into our revised Film MFA in Emerging Media.

THE 6308 **CAH-THEA** **3(3,0)**
Script and Score Analysis PR: Admission to MFA Musical Theatre program. Representative works from the musical theatre repertoire analyzed as dramatic and musical literature.
Rationale: Script Analysis is part of the MFA in Musical Theatre curriculum. Since the track has been on hold, this course has not been offered recently. The school would like to keep this course until further plans are made regarding this track.

TPA 6097C **CAH-THEA** **3(2,2)**
Advanced Rendering and Modeling II PR: TPA 6096C. A continuation of Advanced Rendering and Modeling I with an emphasis on creating a professional portfolio of advanced work. May be used in the degree program a maximum of 3 times.
Rationale: Advanced Rendering and Modeling II is part of the MFA in Theatre Design curriculum.

Since the track has been on hold, this course has not been offered recently. The school would like to keep this course until further plans are made regarding this track.

TPA 6106C **CAH-THEA** **3(2,2)**
Sound Design Studio PR: MFA Design candidate, Advanced Problems in Design I. Advanced work in the process of designing sound for the stage with an emphasis on the use of sound as artistic expression.
Rationale: Recent faculty changes have resulted in altered plans for course offerings. For this time, the school would like to keep this course as an option for future course offerings.

College of Business Administration Course Continuations

GEB 5941 **BA-BA** **1.5(1.5,0)**
Professional Business Practicum PR: Acceptance in the graduate program. The practicum is to provide a professional business work experience for students entering the MBA program without such experience.
Rationale: The course will be used as part a mentorship/internship agenda in the MBA programs.

ECO 6315 **BA-ECON** **3(3,0)**
Seminar in Contemporary Economic Issues PR: ECO 6118 or equivalent and ECO 6403 or equivalent. Discussion and analysis of current economic problems and issues. May be used in the degree program a maximum of 3 times only when course content is different.
Rationale: Retain course for us by Economics MS students as program is being reactivated

ECP 6309 **BA-ECON** **3(3,0)**
Survey of Environmental and Natural Resource Economics PR: ECO 6118 or equivalent and ECO 6403 or equivalent. A survey of the basic theoretical principles and the accompanying empirical work in environmental and natural resource economics.
Rationale: Retain course Economics MS students as the program is being reactivated.

FIN 6536 **BA-FIN** **3(3,0)**
Seminar in Investments PR: Graduate standing, FIN 6406, and FIN 6515. Analysis of options, futures, and other derivative securities and their use in hedging strategies. Other topics include institutional equity and bond portfolio management techniques.
Rationale: It is true that there has been a lack of demand from students for an advanced course in Investments. However, it is important that we retain the existing course because it covers really important aspects and topics related to both investments and risk-management. If there is a cohort group that is enrolled in our graduate programs that has the capacity and interest to tackle more rigorous and advanced topics in investments, they will greatly benefit from the material covered in this course.

College of Education and Human Performance Course Continuations

PET 6135 **ED-E&HS** **3(3,0)**
Historical Aspects of Sport and Physical Education PR: Graduate standing. This course examines the development of sport and physical education from historic to modern times. The focus will be on US sport development following 1865.

Rationale: The department has requested to keep this course active.

PET 6217 **ED-E&HS** **3(3,0)**
Peak Performance in Sports PR: Admission to graduate certificate in Coaching or C.I. An
in-depth study of mental and physical performance, including mental rehearsal, motivation, effort, and persistence.
Rationale: The department wants to continue this course as active.

SPM 5308 **ED-E&HS** **3(3,0)**
Marketing and Promoting Sports and Fitness Programs PR: C.I. Introduces students to all aspects of sports marketing including planning, organizing, marketing, evaluating, and conducting special and sport events.
Rationale: The department wants to keep this course active.

College of Medicine Course Continuations

MCB 5932 **COM-BSBS** **VAR(VAR,VAR)**
Current Topics in Molecular Biology PR: Graduate standing or C.I. Selected current research topics from the primary literature reflecting recent advances in molecular biology. May be repeated for credit.
Rationale: We are in process of hiring additional faculty who will be involved in 3 new tracks which will involve these courses in the near future.

PCB 6595 **COM-BSBS** **3(3,0)**
Regulation of Gene Expression PR: Advanced course in molecular biology of BSC 6407C. Concepts of molecular biology focusing on major areas in transcriptional and translational processes.
Rationale: We are in process of hiring additional faculty who will be involved in 3 new tracks which will involve these courses in the near future

College of Sciences Course Continuations

BSC 5332 **COS-BIOL** **3(3,0)**
Invasion Biology PR: PCB 3044 or C.I. The three stages of biological invasion (introduction, establishment and spread) as well as impacts on native species and ecosystems.
Rationale: Expected to be taught by new Plant Biologist hire in Fall 2017.

ZOO 6520 **COS-BIOL** **3(3,0)**
Behavioral Ecology PR: Admission to the M.S. in Biology, Ph.D. in Conservation Biology, or Certificate in Conservation Biology, or C.I. Introduction to the field of Behavioral Ecology, which studies evolution of animal behavior in the wild.
Rationale: The Biology Department hired a behavioral ecologist who will begin teaching the course as soon as possible.

AST 5334 **COS-PHYS** **3(3,0)**

Extrasolar Planets and Brown Dwarfs PR: Admission to Physics M.S. or Physics Ph.D., or C.I. Substellar-mass objects, their formation, evolution, dynamics, detection, and environments. Rationale: This class was originally taught by Prof. Eduardo Martin (former Physics faculty), who had a non-tenure-track position that was cut during the economic crash. The class was popular. This is one of the most quickly developing areas in modern astronomy and the class prepares students to participate in existing faculty research. There is high interest among students.

PHY 5255 **COS-PHYS** **3(3,0)**

Physics of Fluids and Biofluids PR: PHY 3513, PHY 3323, and MAP 2302 or C.I. Ideal Fluids; Basic equation of fluid flow; Viscous flow, instability and turbulence; Thermal and mass transfers in fluids, biofluid mechanics of blood circulation.

Rationale: The Physics department plans to offer the following elective courses in the immediate future to maintain a diverse curriculum in different fronts of physics. These courses have not been offered during the last years due to the limiting number of instructors in the department during a time of a substantial increase of the number of students enrolled in physics courses. With the recent hires of physics faculty, it is the department's plan to start offering these courses again soon.

PHY 5715 **COS-PHYS** **3(3,0)**

Physical Basis of Life PR: Graduate standing or C.I. Molecular and physical principles of origin of life, physical and chemical interpretation of life processes.

Rationale: The Physics department plans to offer the following elective courses in the immediate future to maintain a diverse curriculum in different fronts of physics. These courses have not been offered during the last years due to the limiting number of instructors in the department during a time of a substantial increase of the number of students enrolled in physics courses. With the recent hires of physics faculty, it is the department's plan to start offering these courses again soon.

PHZ 5432 **COS-PHYS** **3(3,0)**

Introduction to Soft Condensed Matter Physics PR: PHY 3513 or C.I. Introduction to the physics of polymers, colloids, surfactants using basic tools of statistical mechanics.

Rationale: The Physics department plans to offer the following elective courses in the immediate future to maintain a diverse curriculum in different fronts of physics. These courses have not been offered during the last years due to the limiting number of instructors in the department during a time of a substantial increase of the number of students enrolled in physics courses. With the recent hires of physics faculty, it is the department's plan to start offering these courses again soon.

PHZ 5505 **COS-PHYS** **3(3,0)**

Plasma Physics PR: PHY 4324, and graduate status or senior standing or C.I. Introduction to theory and experimental basis of both weakly and highly ionized plasmas. Instabilities, plasma waves, nonlinear effects, controlled thermonuclear fusion.

Rationale: The Physics department plans to offer the following elective courses in the immediate future to maintain a diverse curriculum in different fronts of physics. These courses have not

been offered during the last years due to the limiting number of instructors in the department during a time of a substantial increase of the number of students enrolled in physics courses. With the recent hires of physics faculty, it is the department's plan to start offering these courses again soon.

CPO 6446 **COS-POLS** **3(3,0)**
Comparative Political Parties PR: C.I. Theories of the formation, structure, organization, and behavior of political parties as well as theories of political party systems.
Rationale: Course will be offered in 2017-18.

EXP 5254 **COS-PSYCH** **3(3,0)**
Human Factors and Aging PR: Graduate standing, post bac, or senior standing with C.I. An overview of issues related to enhancing quality of life of elderly through the implementation of basic human factors principles in environmental and task design.
Rationale: Recently hired 3 new faculty members that are experts in aging. Anticipate the course will be offered in the near future as an elective.