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Graduate Committee Minutes

Graduate Committee

3-10-2011

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Audie Graham

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GRADUATE COMMITTEE MINUTES

Chair: Dr. Robert Fernekes

Graduate Committee Meeting Date – March 10, 2011

- Present: Dr. Richard Flynn, CLASS; Dr. Ednilson Bernardes, COBA ; Dr. Delores Liston, COE; Dr. Robert Vogel, JPHCOPH; Mr. Jonathan Harwell, Library; Dr. Elanie Marshall, CHHS; Dr. Bill Yang, COBA; Dr. Yasar Bodur, COE; Dr. Michele McGibony, COST; Dr. Simone Charles, JPHCOPH; Dr. Robert Fernekes, Library; Dr. Charlie Hardy, Dean, JPHCOPH, [Academic Affairs]; Dr. Charles E. Patterson, COGS/ORSSP; Dr. Dick Diebolt, COGS; Mrs. Audie Graham, COGS
- Guests: Ms. Candace Griffith, VPAA; Mr. Wayne Smith, Registrar; Dr. Toby Ziglar, Graduate Admissions; Dr. Christine Ludowise, CLASS; Dr. Shahnam Navaee, COST; Dr. Johnathan O'Neill, CLASS; Dr. Mark Edwards, COST; Dr. Brian Koehler, COST; Dr. John DiCesare, COST; Dr. Trenton Davis, CLASS
- Absent: Dr. Deborah Allen, CHHS; Dr. John Dyer, CIT; Dr. Risa Cohen, COST; Dr. Ardian Greca, CIT; Dr. Pat Walker, CLASS;

I. CALL TO ORDER

Dr. Robert Fernekes called the meeting to order on Thursday, March 10, 2011 at 8:00 AM.

II. APPROVAL OF AGENDA

Mr. Jonathan Harwell made a motion to approve the agenda as written. A second was made and the motion to approve the agenda was passed.

III. DEAN'S UPDATE

Dr. Charles Patterson provided an update on the following initiatives:

- Graduate Appreciation Week (GAW) is scheduled March 29-April 1; details for the events will be sent out today. The deadline for the Graduate Research Symposium is extended to March 11. Dr. Patterson will notify Deans of the time extension and ask them to encourage their students to participate. The symposium awards will be announced at a social on Friday, April 1, and there will also be a drawing for a student to win an iPad 2. Students are entered by attending each event during the week.
- Dr. Patterson has been working with the Graduate Student Organization (GSO) to build their infrastructure. He stated that he appreciates Dr. Simone Charles, from Jiann-Ping Hsu College of Public Health, for serving as the Faculty Representative.
- The new Graduate Admissions website is live and they are using Google Analytics to track what links are being visited.
- The Taskforce for Graduate Education has been meeting, but there is nothing to report at this time.
- The Averitt Awards have been awarded to students in two categories: (1) Tomas Condon in Biology for Excellence in Research and (2) Drew Keane in English for Excellence in Instruction. The prizes for each category will include a \$1000 cash prize and a Crystal Eagle Trophy, and will be provided at Honor's Day.
- Graduate Commencement is scheduled for May 13. Mr. Chris Clark, President & CEO of the Georgia Chamber of Commerce, will be the guest speaker. There will be a Doctoral Brunch/Reception held in Russell Union prior to commencement. There will be a photographer present and mock hoodings and other offerings. COGS will promote the event once everything is finalized.
- Dr. Patterson stated DegreeWorks is progressing. Mrs. Melanie Reddick is the main scribe for COGS, and she is checking the scribe for all graduate programs. Mrs. Reddick is also coordinating training for all colleges.

Dr. Patterson asked the committee to start thinking about meeting times for next year and if the current 8 AM meeting time can remain the same. Any preferences should be sent to Audie Graham.

Dr. Patterson stated SACS accreditation issues related to student learning outcomes may need to be addressed as the Graduate Committee reviews curriculum items. Dr. Charles Hardy said he also wanted to reiterate the note that was sent from Dr. Kathy Albertson that stated as an institution GSU needs to get more sophisticated in our graduate programs. Dr. Patterson stated he would be meeting with Dr. Albertson, Dr. Fernekes, and Dr. Dick Diebolt to address this issue. Dr. Fernekes said his main concern is how the Graduate Committee fits into the review of these documents.

IV. NEW BUSINESS

A. College of Science and Technology

Dr. Shahnam Navaee presented the following agenda items for the College of Science and Technology.

Department of Chemistry

New Courses:

CHEM 5331G - Advanced Organic Chemistry

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

CHEM 5332G - Principles of Drug Design

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

CHEM 5333G - Carbohydrate Chemistry

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

CHEM 6130 - Industrial Chemistry

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

CHEM 6230 - Scientific Inquiry and Ethics

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

CHEM 6730 - Master of Science in Physical Science Internship

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

CHEM 7130 - Sustainability in the Physical Sciences

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

CHEM 7610 - Graduate Seminar

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

CHEM 7999 - Thesis

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

Course Revision:

CHEM 5243G - Environmental Chemistry

JUSTIFICATION:

The Department of Chemistry no longer requires the lab content of this course. Changing the course to a lecture-only format requires reducing the credit hours, which also necessitates the appropriate change in the course number.

Department of Physics

New Courses:

PHYS 6131 - Physics of Solid State Materials

JUSTIFICATION:

This course is required for the Material & Coating Science Concentration of the proposed Master Science in Physical Science degree.

PHYS 6132 - Applied Optics

JUSTIFICATION:

This course is needed for the Material & Coating Science Concentration of the proposed Master of Science in Physical Science degree.

PHYS 6231 - Thin-Film Coating

JUSTIFICATION:

This course is needed for the Material and Coating Science Concentration of the proposed Master of Science in Physical Science degree.

PHYS 6237 - Applied Quantum Mechanics

JUSTIFICATION:

This course is required for the Material & Coating Science Concentration of the proposed Master of Science in Physical Science degree.

PHYS 6730 - Master of Science in Physical Science Internship

JUSTIFICATION:

Required course for the proposed Master of Science in Physical Science degree.

PHYS 7330 - Principles and Practice of Pre-clinical Drug Development

JUSTIFICATION:

This course is a required course for the Pharmaceutical Science Concentration of the proposed Master of Science in Physical Science.

PHYS 7610 - Graduate Seminar

JUSTIFICATION:

This course is required for the proposed Master of Science in Physical Science degree.

PHYS 7999 - Thesis

JUSTIFICATION:

This is a required course for the proposed Master of Science in Physical Science degree.

Departments of Chemistry & Physics

New Program:

M.S. in Physical Science

JUSTIFICATION:

This form accompanies the formal proposal for the Master of Science in Physical Science degree at Georgia Southern University.

New Proposal:

Master of Science in Physical Science (MSPS formal proposal will be submitted to the Board of Regents)

Dr. Navaee stated the follow changes have been made to the MSPS program page and proposal, per Dr. Diebolt's request:

- **Admission requirements were modified to provide more information regarding foreign students, GRE, & TOEFL scores. See MSPS catalog program page - listed items #1 & 2.**
- **WRIT 5930 was changed to WRIT 5930G in the catalog page.**
- **Admission requirements were also changed in the MSPS proposal. See page 3 (listed items #1 & 2), and pages 16 & 29.**

Dr. Diebolt suggested some minor changes be made to the "Thesis" section of the MSPS program page to be more constant with the ETD model. Dr. Navaee agreed to revise this section as follows:

Each Candidate for the Master of Science in Physical Science degree, thesis option, must complete a thesis on a subject approved by the graduate thesis committee. The student must complete and submit the Thesis Title and Committee Member Approval form which must be signed by the proposed committee members to the College of Graduate Studies for final approval by the graduate dean. The major professor supervises the research, directs the writing of the thesis, and approves the thesis in its final form. Prior to the final approval, the thesis is read by the thesis committee. One member, termed the second reader, has the responsibility for an intensive and rigorous criticism of the thesis, and a third member of the thesis committee has the responsibility of an “editorial reader.” Both second and third readers must report all comments to the major professor. The thesis must be defended in an oral examination before the graduate committee prior to final approval and sign-off.

The style and format for the completed thesis shall follow that prescribed by the Director for the Master of Science in Physical Science degree. Procedural steps in the preparation of the thesis are as follows:

- The prospectus for the thesis shall be submitted to the major professor and thesis committee for approval.
- The thesis must be prepared in the program approved format style and follow the *Electronic Thesis and Dissertation (ETD) Student Guide to Preparation and Processing* guidelines.
- Thesis submission will follow the ETD guidelines stated on the College of Graduate Studies ETD website <http://academics.georgiasouthern.edu/etd/>.

MOTION: Dr. Richard Flynn made a motion to approve the agenda items submitted by the College of Science and Technology, with the understanding that the editorial changes would be made to the MSPS program pages. A second was made by Dr. Michele McGibony. The motion to approve the New Courses, Course Revisions, and the New Program was passed.

Revised proposal and curriculum pages are below.

MASTER DEGREES

NEW PROPOSAL FORM: ONE-STEP PROCESS

(Submit One Copy)

Institution: Georgia Southern University

Institutional Contact (President or Vice President for Academic Affairs): Dr. Jean Bartels, Interim Provost

Date: 27 January 2011

School/Division: Allen E. Paulson College of Science and Technology

Department: Chemistry & Physics

Departmental Contacts: Dr. John DiCesare and Dr. Mark Edwards

Name of Proposed Program/Inscription: Master of Science in Physical Science

Degree: Master of Science in Physical Science

Major: Physical Science with concentrations in Environmental Science, Pharmaceutical Science, and Materials and Coatings Science

CIP Code: 400101

Anticipated Starting Date: Jan 2012

Note

The “Executive Summary” and the developed catalog page for the proposed **Master of Science in Physical Science** program are provided in the following three pages. More detailed information regarding the specific of this degree program is also included in the remainder of the document, as required by the Board of Regents.

Executive Summary

The Master of Science in Physical Science

Georgia Southern University's new Master of Science in Physical Science is a terminal professional degree that prepares graduates for the workplace by giving them real-world experience applying their knowledge of mathematics and science to projects of interest to the business, government, and nonprofit sectors. Students gain a deeper understanding of the science and mathematics used in their fields, as well as a solid grounding in business fundamentals and communications, preparing them to become leaders in the business aspects of science. Two options will be available to students: a terminal non-thesis or a terminal thesis option. The concentration areas are interdisciplinary, building on the expertise of Georgia Southern faculty in three specific areas:

- Environmental Science
- Pharmaceutical Science
- Materials and Coating Science

Overview of the Non-thesis option (36 hours)

Required Core Coursework (21 hours):

- 3 science courses (core, 9 hours)
 - Chemical industry foundation, statistics, and scientific ethics
- 3 business fundamentals courses (core, 9 hours)
 - leadership, project management, and technical communications
- A final internship or industrial project (3 hours)

Required and Elective Coursework (15 hours):

- 3 science electives - (9 hours)
- 2 non science electives (6 hours):
 - specific business skills such as finance, accounting, or marketing
 - leadership skills
 - applied statistics

Overview of the Thesis option (30 hours)

Required Core Coursework (18 hours):

- 3 science courses (core, 9 hours)
 - Identical to Non-thesis option
- 3 research courses (core, 9 hours)
 - Thesis (6 hours) and Seminar (3 hours)

Elective Coursework (12 hours):

- 4 courses within the chosen concentration (12 hours)

PHYSICAL SCIENCE

M.S., 30 HOURS THESIS TRACK

36 HOURS NON-THESIS TRACK

Total Hours: Non-Thesis Track 33 + 3 internship hours

Total Hours: Thesis Track 24 + 6 thesis hours

Advising: Department of Chemistry and Department of Physics, Georgia Southern University, P.O. Box 8064 Statesboro, GA 30460

Admission Requirements

Regular

1. BS or BA degree in chemistry or physics from an appropriate regionally accredited college or university, or an equivalent degree from a recognized foreign college or university. Official TOEFL scores (not more than two years old) required for international students.
2. A overall minimum cumulative GPA of 3.0 on a 4.0 scale.
3. Official GRE Report showing competitive subtest scores.
4. 2 Letters of Recommendation
5. Applicant's Statement of Purpose, which must address (1) the student's preparation for graduate study, (2) the student's goals for the graduate program, potential concentration area, and possible advisor (for thesis option), & (3) the student's professional goals following completion of the MSPS program
6. The applicant must have the appropriate undergraduate preparation for the area of concentration. This requires meeting the general MSPS requirements and the pre-requisites listed for the particular concentration area.

Provisional

None

Non-Degree

None

Program Concentrations

The Master of Science in Physical Science degree program provides concentrations in Environmental Science, Pharmaceutical Science, or Materials and Coatings Science.

A maximum of 12 credit hours at the 5000 level are allowed for the Master of Science in Physical Science degree.

Environmental Science Concentration

Non-Thesis Track.....36 Hours

Core Requirements

- CHEM 6130 – Industrial Chemistry (3)
- CHEM 6230 – Scientific Inquiry and Ethics (3)
- CHEM 6730 **OR** PHYS 6730 – Master of Science in Physical Science Internship (3)
- CISM/MGNT 7431 – Project Management (3)
- MGNT 7330 – Leadership and Motivation (3)
- PUBH 6541 – Biostatistics (3) **OR** STAT 5531G - Statistical Methods (3) **OR** ACCT 7134 - Financial Reporting & Analysis (3)
- WRIT 5930G – Technical Writing (3)

Concentration Requirements

- CHEM 5233G – Environmental Chemistry (3)
- CHEM 7130 – Sustainability in the Physical Sciences (3)
- Concentration Elective courses (9) at or above the 5000 level - as contracted with the faculty advisor and degree coordinator

Thesis Track.....30

Hours

Core Requirements

- CHEM 6130 – Industrial Chemistry (3)
- CHEM 6230 – Scientific Inquiry and Ethics (3)
- CHEM 7610 **OR** PHYS 7610 – Graduate Seminar (3)
- CHEM 7999 **OR** PHYS 7999 – Thesis (6)
- PUBH 6541 – Biostatistics (3) **OR** STAT 5531G - Statistical Methods (3)

Concentration Requirements

- CHEM 5233G – Environmental Chemistry (3)
- CHEM 7130 – Sustainability in the Physical Sciences (3)
- Concentration Elective courses (6) at or above the 5000 level - as contracted with the faculty advisor and degree coordinator

Pharmaceutical Science Concentration

Non-Thesis Track.....36 Hours

Core Requirements

- CHEM 6130 – Industrial Chemistry (3)
- CHEM 6230 – Scientific Inquiry and Ethics (3)
- CHEM 6730 **OR** PHYS 6730 – Master of Science in Physical Science Internship (3)

CISM/MGNT 7431 –Project Management (3)
 MGNT 7330 – Leadership and Motivation (3)
 PUBH 6541 – Biostatistics (3) **OR** STAT 5531G - Statistical Methods (3) **OR** ACCT 7134 - Financial Reporting & Analysis (3)
 WRIT 5930G - Technical Writing (3)

Concentration Requirements

PHYS 7330 - Principles and Practice of Pre-clinical Drug Development (3)
 Concentration Elective courses (12) at or above the 5000 level - as contracted with the faculty advisor and degree coordinator

Thesis Track.....30

Hours

Core Requirements

CHEM 6130 – Industrial Chemistry (3)
 CHEM 6230 – Scientific Inquiry and Ethics (3)
 CHEM 7610 **OR** PHYS 7610 – Graduate Seminar (3)
 CHEM 7999 **OR** PHYS 7999 – Thesis (6)
 PUBH 6541 – Biostatistics (3) **OR** STAT 5531G - Statistical Methods (3)

Concentration Requirements

PHYS 7330 – Principles and Practice of Pre-clinical Drug Development (3)
 Concentration Elective courses (9) at or above the 5000 level - as contracted with the faculty advisor and degree coordinator

Material and Coatings Science Concentration

Non-Thesis Track.....36 Hours

Core Requirements

CHEM 6130 – Industrial Chemistry (3)
 CHEM 6230 – Scientific Inquiry and Ethics (3)
 CHEM 6730 **OR** PHYS 6730 – Master of Science in Physical Science Internship (3)
 CISM/MGNT 7431 – Project Management (3)
 MGNT 7330 – Leadership and Motivation (3)
 PUBH 6541 – Biostatistics (3) **OR** STAT 5531G - Statistical Methods (3) **OR** ACCT 7134 - Financial Reporting & Analysis (3)
 WRIT 5930G – Technical Writing (3)

Concentration Requirements

PHYS 6131 – Physics of Solid State Materials (3)
 PHYS 6237 – Applied Quantum Mechanics (3)
 Concentration Elective courses (9) at or above the 5000 level - as contracted with the faculty advisor and degree coordinator

Thesis Track.....30

Hours

Core Requirements

CHEM 6130 – Industrial Chemistry (3)
 CHEM 6230 – Scientific Inquiry and Ethics (3)
 CHEM 7610 **OR** PHYS 7610 – Graduate Seminar (3)
 CHEM 7999 **OR** PHYS 7999 – Thesis (6)
 PUBH 6541 – Biostatistics (3) **OR** STAT 5531G - Statistical Methods (3)

Concentration Requirements

PHYS 6131 – Physics of Solid State Materials (3)
 PHYS 6237 – Applied Quantum Mechanics (3)
 Concentration Elective courses (6) at or above the 5000 level - as contracted with the faculty advisor and degree coordinator

Thesis

Each Candidate for the Master of Science in Physical Science degree, thesis option, must complete a thesis on a subject approved by the graduate thesis committee. The student must complete and submit the Thesis Title and Committee Member Approval form which must be signed by the proposed committee members to the College of Graduate Studies for final approval by the graduate dean. The major professor supervises the research, directs the writing of the thesis, and approves the thesis in its final form. Prior to the final approval, the thesis is read by the thesis committee. One member, termed the second reader, has the responsibility for an intensive and rigorous criticism of the thesis, and a third member of the thesis committee has the responsibility of an “editorial reader.” Both second and third readers must report all comments to the major professor. The thesis must be defended in an oral examination before the graduate committee prior to final approval and sign-off.

The style and format for the completed thesis shall follow that prescribed by the Director for the Master of Science in Physical Science degree. Procedural steps in the preparation of the thesis are as follows:

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- Thesis submission will follow the ETD guidelines stated on the College of Graduate Studies ETD website <http://academics.georgiasouthern.edu/etd/>.

1. Program Description and Objectives:

- a. Objectives of the program*
- b. Needs the program will meet*
- c. Brief explanation of how the program is to be delivered*
- d. Prioritization within the institution's strategic plan*

a. Objectives of the program

Georgia Southern University proposes a new Master of Science in Physical Science (MSPS) consisting of two options: a terminal non-thesis or a terminal thesis option. The focus of the program will be a terminal graduate degree that prepares students for the workplace by giving them real-world experience in applying their knowledge of mathematics and science to projects of interest to business and industry. Students completing the proposed program earn a degree that enables them to integrate information and concepts across different scientific and technical disciplines with business needs. Students will be able to apply specialized knowledge from chemistry, industrial technology, mathematics and physics to solve problems that are critical to future growth of local business and industry. Additionally, students will be able to work effectively with people who possess various educational and experiential backgrounds. These individuals can gain a deeper understanding of the science and mathematics used in their fields, as well as attain a solid foundation in business fundamentals and communications, preparing them to become leaders in business and science arenas. Students completing the terminal Master of Science in Physical Science degree will gain in-depth knowledge in one of three concentration areas and defend a research-based thesis in their area of specialty. The three concentration areas available are Environmental Science, Pharmaceutical Science, and Materials and Coating Science.

The vision for the new Master's degree at Georgia Southern University's Allen E. Paulson College of Science and Technology is to provide an interdisciplinary perspective on the intermingling of science fields with business skills, providing students with a unique background for tackling the demands of a 21st Century workplace. This new Master's degree will meet the needs of the region by producing graduates with enhanced skill sets suitable for employment as project managers, environmental scientists, and commercial or business development scientists. The new degree is a terminal professional degree that prepares students for the workplace by giving them a real-world experience applying their knowledge of science and mathematics to projects of interest in the business, government, and nonprofit sectors. The key deliverables of this program are to establish a new sustainable graduate degree based on the interdisciplinary fields of chemistry, physics, and business in the College, and to support the economic development of regional industry by increasing the available workforce trained in both science and business. The goals of the new program at Georgia Southern University are to provide students with:

- 1) a broad-based understanding of the chemistry and physics, underlying specific concentration areas through core courses,
- 2) a deeper level understanding of the applicability of science to business problems through a real-world summer internship or project,
- 3) a spectrum of highly skilled training in the students' interest area through elective courses.

Upon completing the requirements of this program, students will:

- 1) demonstrate a broad knowledge of physics, chemistry, statistics and the interdisciplinary science in their concentration area
- 2) demonstrate analytical and organization skills to deal with large quantities of data, evidence, clues and be able to generate testable hypothesis for problem solving

- 3) demonstrate good project management skills from initiation to completion, including information searching, strategic planning, problem solving, and drawing conclusions
- 4) demonstrate skills in communications of technical information, management, and team work.

b. Needs the program will meet.

The Master of Science in Physical Science degree is intended to support the economic development of regional industries from northern Florida to southern South Carolina, a geographic area currently underserved by existing programs. While several universities in the region offer biological or life science related Master's degrees, none presently offer a graduate level degree to support the chemical or physical sciences, nor is there a program specifically designed to offer a broad-based science Master's degree. The new MSPS degree option will have three primary concentration areas, reflecting the primary needs of the region. The concentration areas are interdisciplinary, building on the expertise of Georgia Southern faculty in the following specific areas: environmental science, pharmaceutical science, and materials and coatings science. These areas nicely meld existing expertise of the faculty in the Chemistry and Physics Departments, and build on the existing infrastructure of the existing graduate programs in the College. Currently neither of the two departments offers graduate degree programs.

c. Brief explanation of how the program is to be delivered.

The proposed degree program will be delivered in a format using a combination of face-to-face courses and online courses. It is anticipated that all of the required courses and many of the elective courses will be available as either an online only course, or an online complement of a traditional face-to-face course. Therefore, it will be possible for a student to graduate from the program taking only online courses.

d. Prioritization within the institution's strategic plan.

Georgia Southern University has set a goal of raising the proportion of graduate students to 20% of the total enrollment (up from the present 14%). This composition will better reflect the University's evolving position in the region as a Doctoral/Research University. While enrollment in existing programs is being expanded, it is recognized that this target cannot be achieved without adding new programs. As the location of the University in Statesboro does not lend itself to large enrollments in face-to-face professional degree programs, many of the new programs will utilize an online format to reach a broader regional audience, which also circumvents on-campus classroom space limitations. The proposed MSPS will include an online format to broadly reach into industries across the state.

Currently across its eight academic departments, the College of Science and Technology (COST) has only three graduate programs in the following areas: biology, mathematical science, and applied engineering. The majority of faculty in the Departments of Chemistry and Physics are members of the Graduate Faculty, and their qualifications have them well positioned to add a graduate program to their current loads. The addition of the MSPS will allow the College to achieve a key goal within its strategic plan, to develop targeted educational programs to meet the needs of industries and corporations through the state and surrounding region. Meeting this goal will boost the region's capacity for rapid economic development.

2. Description of the program's fit with the institutional mission and nationally accepted trends in the discipline.

The Master of Science in Physical Science degree will prepare students for careers in applied chemistry, applied physics, and engineering businesses and industries. Particularly for the non-thesis track, emphasis is placed on blending core knowledge and applied skills in physics and chemistry with an understanding of business and an internship experience. This degree fits the University mission by

“bridging theory with practice and extending the learning environment beyond the classroom” via internships or project-based experiences as expressed in the University’s mission statement.

Recent hiring trends in chemistry and physics show that students who graduate with undergraduate degrees in these disciplines follow diverse career paths (such as computer programming or pharmaceutical sales). The degree will give students interested in industrial and business careers an opportunity to become familiar with other possible careers available to them beyond the traditional careers for which they were trained as undergraduates.

The non-thesis track, designed to meet criteria for certification as a Professional Science Master’s degree, is a growing trend in the terminal Master’s field and as such has a national organization, the National Professional Science Master Association (www.sciencemasters.com), initially sponsored by the Alfred P. Sloan Foundation. Additionally, the National Science Foundation (NSF) has recognized the benefits and needs of such programs and has recently began an initiative to fund the formation of this type of programs.

3. Description of how the program demonstrates demand and a justification of need in the discipline and geographic area and is not unnecessary program duplication.

This proposal, developing a new graduate program in a college with a significant proportion of underrepresented minority students, provides a new opportunity for these students to continue their education in STEM fields and acquire critically important skills necessary to succeed in a business environment. The new degree program outlined will satisfy a need in a wide geographic region of the Southeast that currently has no comparable program. The combination of a research focused internship to solve a well-crafted, business-oriented problem provides students with the ability to use their knowledge and skills in a workplace setting as well as experience the intensity and excitement of real world problem solving. As the program grows, the key learnings in developing and implementing this new degree will be disseminated through presentations and publications in appropriate venues. In addition, this proposal serves to enhance the ties between the university and local and regional businesses. This improved relationship has several benefits, including the ability of faculty to interact with businesses in problem solving and research, the ability of students to explore the work-related opportunities through internships and co-op experiences, and the ability of the businesses to better meet their hiring needs.

This degree is intended to support the economic development of regional industries from northern Florida to southern South Carolina, a geographic area currently underserved by existing programs. While several universities in the region offer biological or life science related Masters degrees, none presently offer a program specifically designed to offer a broad-based professional science Master’s degree. The new degree program will have three interdisciplinary concentration areas, building on the expertise of Georgia Southern faculty in these areas: environmental science, pharmaceutical science, and materials and coatings science. These areas nicely meld existing expertise of the faculty in the Chemistry and Physics Departments, neither of which currently offer graduate degrees, and build on the existing infrastructure of the existing graduate programs in the College.

Needs Assessment:

A needs-based survey was administered to a group of Georgia-based industries and the COST Industrial Advisory Board in 2009. Twenty of 35 surveys were returned (a 57% response rate). Key skills noted as essential for employees included the ability to work with people of many different backgrounds (culturally, educationally, and technically), effective communication of highly technical information to others, ability to work as a team member, well developed problem solving and critical thinking skills, and maturity. Specific general skills that should be included in the program that were requested by the companies surveyed included communications and teamwork skills like conflict management, and a general knowledge of how businesses function (management of organizational behavior). Technical skills desired included statistics, project management, and introductory intellectual property. Based on the surveys, the environmental science concentration area was of the most interest; material science focused

on inorganic materials and coatings was of interest to a select few companies. Two respondents ranked the pharmaceutical area highly (5, “essential to hire” on the Likert scale portion of the survey); this response was attributed to the lack of pharmaceutical industry in the immediate local area, where the needs survey was principally based; the two respondents are willing to support students in internships. An emphasis in pharmaceutical science meets the interests of potential students as well as providing incentive for future economic growth in a new market sector for this area. A strong majority of respondents (70%) indicated that a fully online degree would be of most interest to their employees. The numbers of students who would participate, estimated from the current employees, ranged from none to 125; the larger figures represented estimates from nationally-based companies assuming that employees in non-local sites would also be interested in this program if offered online.

As the only provider of these degrees in this regional area, Georgia Southern University will benefit from increased enrollments and increased visibility as a provider of well-trained highly skilled employees. The relationships built as a result of the internships and research projects will continue to enhance the reputation of the university as forward thinking and responsive to the needs of the region. The program is unique for several reasons: the breadth of concentration areas to be offered, the focus on matching needs of the regional employers with skill sets in future employees, and the interdisciplinary nature of the concentration areas. Over 35% of the industrial respondents indicated that this degree would meet more of their future hiring needs. This degree also provides an opportunity for continued growth of the Chemistry and Physics Departments through the introduction of a new graduate degree.

4. Brief description of institutional resources that will be used specifically for the program (e.g., personnel, library, equipment, laboratories, supplies & expenses, capital expenditures at program start-up and when the program undergoes its first comprehensive program review.

The program does not anticipate the need of any extra expenditure beyond those currently anticipated due to the growth of the University and College. At start-up, sufficient science courses exist within the Departments of Chemistry and Physics to initiate the program. Arrangements have already been made for students in the program to enroll in existing non-science graduate courses taught by departments outside of the College of Science and Technology, specifically the College of Business Administration and the Jiann-Ping Hsu College of Public Health. The library currently subscribes to sufficient journals in the area of chemistry and physics for the program and recently acquired online access to the ScienceDirect Environmental Sciences Database. Either track for the MSPS degree (thesis or non-thesis options) will be able to utilize the existing equipment and laboratories housed in the Chemistry and Physics Departments.

Students enrolling in the program will be traditional on campus or online students. It is anticipated that the online students will be full paying students with many having the support of employer tuition benefit programs. On campus students will be either full paying or receive graduate teaching assistantships (GAs). Currently the Departments of Chemistry and Physics rely on a significant number of temporary faculty positions to teach the laboratories associated with courses, as neither department has an existing graduate program. The use of GAs to teach these laboratories instead of temporary faculty would allow these departments to cover more laboratory sections for the same costs.

The courses required for the program will either be online version of existing courses or other totally new courses. Existing faculty will be able to teach the new offered courses through efficient scheduling of elective courses within the departments. No additional resources are needed beyond those that are currently anticipated due to the growth in undergraduate student population for the new Masters program's first comprehensive program review.

5. Curriculum: List the entire course of study required and recommended to complete the degree program. Provide a sample program of study that would be followed by a representative student.

- a. *Clearly differentiate which courses are existing and which are newly developed courses. Include the course titles as well as acronyms and credit hour requirements associated with each course.*
- b. *Append course descriptions for all courses (existing and new courses).*
- c. *When describing required or elective courses, list all course prerequisites.*
- d. *Provide documentation that all courses in the proposed curriculum have met all institutional requirements for approval.*
- e. *Append materials available from national accrediting agencies or professional organizations as they relate to curriculum standards for the proposed program.*
- f. *Indicate ways in which the proposed program is consistent with national standards.*
- g. *If internships or field experiences are required as part of the program, provide information documenting internship availability as well as how students will be assigned and supervised.*
- h. *Indicate the adequacy of core offerings to support the new program.*

Georgia Southern University's Master of Science in Physical Science is a terminal professional degree that prepares graduates for the workplace by giving them real-world experience applying their knowledge of mathematics and science to projects of interest to the business, government, and nonprofit sectors. Students gain a deeper understanding of the science and mathematics used in their fields, as well as a solid grounding in business fundamentals and communications, preparing them to become leaders in the business aspects of science. Two options will be available to students: a terminal non-thesis or a terminal thesis option. The concentration areas are interdisciplinary, building on the expertise of Georgia Southern faculty in three specific areas:

- Environmental Science
- Pharmaceutical Science
- Materials and Coating Science

Details of the curriculum, including Course numbers, titles, and catalog descriptions, can be found in Appendix A.

Overview of the Non-thesis option (36 hours)

Required Core Coursework (21 hours):

- 3 science courses (core, 9 hours)
 - Chemical industry foundation, statistics, and scientific ethics
- 3 business fundamentals courses (core, 9 hours)
 - leadership, project management, and technical communications
- A final internship or industrial project (3 hours)
 - in a real working environment with timely goals and deliverables
 - application of knowledge to a relevant business problem
 - oral and written presentation of results

Required and Elective Coursework (15 hours):

- 3 science electives (to deepen knowledge in one of the concentration areas) - (9 hours)
- 2 non science electives (6 hours):
 - specific business skills such as finance, accounting, or marketing
 - leadership skills
 - applied statistics

The new degree will build on the successful undergraduate and graduate programs in the college. The new degree will have two primary components: required core coursework and electives specific to the concentration area chosen by the student. The required core is comprised of three science courses (industrial chemistry, statistics, and scientific ethics), and three business fundamentals courses (leadership, project management, and technical communications). There will be three interdisciplinary concentration areas from which students may choose: environmental science, pharmaceutical science, and material and coatings science.

In the environmental science concentration area, students will gain in-depth understanding of issues facing the environmental scientist and community. Emphasis areas include public policy and law, environmental science, and chemistry in regulated environments. In the pharmaceutical science concentration area, students will prepare for careers in the pharmaceutical industry. Emphasis areas include design and synthesis of pharmaceutical materials, regulations and policy of new drug development, and the process of submitting new pharmaceutical intermediates. The concentration area in material sciences focuses on modern materials science. Emphasis areas include material science, coatings, optics, and solid state materials.

Each concentration area has specific science electives from which a student may choose depending on her or his interest area. The non science electives are common for all concentration areas. Students will have at least one additional required science class and select two science electives (chosen to deepen knowledge in one of the three concentration areas) and two non science electives. One of the non science electives will be a course in financial reporting and analysis. In addition, students will be required to complete a final internship or industrial project, including both oral and written presentation of results. Substitution of appropriate electives not listed in the curriculum must be approved by the faculty advisory committee.

A typical student matriculating in the Fall Semester will follow one of the paths indicated in the table below. Online courses are denoted with (*).

Table 1: Georgia Southern MSPS: Curriculum Flowchart - Environmental Science Concentration

| Year 1: MSPS | | |
|---|---|-----------------------------------|
| Fall Semester (9 CH) | Spring Semester (9 CH) | Summer Semester (3 CH) |
| CHEM 6130 Industrial Chemistry* | <i>ELECTIVE</i> STAT 7231 Design of Experiments (recommended) | CHEM or PHYS 6730 MSPS Internship |
| PUBH 6541 Biostatistics OR STAT 5331G Statistical Methods OR ACCT 7134 Financial Reporting & Analysis | WRIT 5930G Technical Writing | |
| CHEM 6230 Scientific Inquiry and Ethics* | CHEM 5233G Environmental Chemistry* | |
| Year 2 | | |
| Fall Semester (9 CH) | Spring Semester (6 CH) | |
| <i>ELECTIVE</i> | | |
| CISM/MGNT 7431 Project Management* | CHEM 7130 Sustainability in the Physical Sciences* | |
| <i>ELECTIVE</i> ACCT 7134 Financial Analysis* (strongly | MGNT 7330 Leadership and Motivation | |

| | | |
|--------------|--|--|
| recommended) | | |
|--------------|--|--|

Table 2: Georgia Southern MSPS: Curriculum Flowchart - Pharmaceutical Science Concentration

| Year 1: MSPS | | |
|---|--|-----------------------------------|
| Fall Semester (9 CH) | Spring Semester (9 CH) | Summer Semester (3 CH) |
| CHEM 6130 Industrial Chemistry* | <i>ELECTIVE</i> STAT 7231 Design of Experiments (recommended) | CHEM or PHYS 6730 MSPS Internship |
| PUBH 6541 Biostatistics OR STAT 5331G Statistical Methods OR ACCT 7134 Financial Reporting & Analysis | WRIT 5930G Technical Writing | |
| CHEM 6230 Scientific Inquiry and Ethics* | <i>ELECTIVE</i> | |
| Year 2 | | |
| Fall Semester (9 CH) | Spring Semester (6 CH) | |
| <i>ELECTIVE</i> ACCT 7134 Financial Reporting and Analysis* (strongly recommended) | PHYS 7330 Principles and Practice of Pre-clinical Drug Development | |
| CISM/MGNT 7431 Project Management* | MGNT 7330 Leadership and Motivation | |
| <i>ELECTIVE</i> | | |

Table 3: Georgia Southern MSPS: Curriculum Flowchart - Materials and Coatings Concentration

| Year 1: MSPS | | |
|---|---|-----------------------------------|
| Fall Semester (9 CH) | Spring Semester (9 CH) | Summer Semester (3 CH) |
| CHEM 6130 Industrial Chemistry* | <i>ELECTIVE</i> STAT 7231 Design of Experiments (recommended) | CHEM or PHYS 6730 MSPS Internship |
| PUBH 6541 Biostatistics OR STAT 5331G Statistical Methods OR ACCT 7134 Financial Reporting & Analysis | WRIT 5930G Technical Writing | |
| CHEM 6230 Scientific Inquiry and Ethics* | PHYS 6237 Applied Quantum Mechanics | |
| Year 2 | | |
| Fall Semester (9 CH) | Spring Semester (6 CH) | |
| <i>ELECTIVE</i> ACCT 7134 Financial Analysis* (strongly | | |

| | | |
|--|-------------------------------------|--|
| recommended) | | |
| CISM/MGNT 7431 Project Management* | MGNT 7330 Leadership and Motivation | |
| PHYS 6131 Physics of Solid State Materials | <i>ELECTIVE</i> | |

Students will progress through the core portion of the curriculum as a cohort, providing opportunities to establish professional networks with other students as well as creating a team environment comparable to one student will encounter in the workplace. Faculty involved in the curriculum will have options for cyber-enabled learning, online and hybrid courses, and traditional face to face modes of instruction for their courses, and will be expected to collaborate in the development of new materials as needs evolve. Local, regional, and global considerations for the core and the electives will be emphasized as part of each course. Students will be required to enroll in a course focused on scientific and business ethics, where case studies, role playing, and other forms of active learning will imbue the student with an appreciation for the multitude of ethical issues in the scientific and business world. Industrial partners will be volunteers from the existing industrial advisory board or other local employers.

Career development and training are available through a well staffed career development center at Georgia Southern University. Resume writing, interviewing (including videotaped mock interviews), career fairs, employment options, and other services are available; staff from the career center will be invited to courses as appropriate to work with students.

The curriculum requirements are a total of 11 courses (33 semester hours of course work) plus at least one internship or industrial project experience (equivalent to 3 semester hours). Students are expected to be full time students; completion of this degree will require two years or five semesters (inclusive of one summer) of study. The courses required consist of a core curriculum in science and non science courses (6 courses/18 credit hours) plus electives appropriate for the concentration area chosen (5 courses/15 credit hours). An internship or industrial project is required; this internship or project must be equivalent to 10 weeks or 3 credit hours and will typically be carried out during the summer following the first year of enrollment in the program. Students must also pass a cumulative written and oral exam, as well as present their work from their internship or industrial project.

Core curriculum

The core curriculum will strengthen the science background of the student and provide the needed foundation in critical business skills. The science core courses will be (1) an overview of the chemical industry from petrochemicals to pharmaceuticals and will include an overview of intellectual property issues and record keeping in a regulated environment (2) statistical methods, including a focus on data analysis with commonly used software packages, and (3) a scientific methods and ethics course, focusing on ethics of scientific research.

Table 4: Core science courses

| Course Number | Course Title | Existing or New |
|--|--|-----------------|
| CHEM 6130 | Industrial Chemistry | Existing Course |
| PUBH 6541 <i>or</i> STAT 5531G <i>or</i> ACCT 7134 | Biostatistics Statistical Methods Financial Reporting & Analysis | Existing Course |
| CHEM 6230 | Scientific Inquiry and Ethics | New Course |

The core curriculum will also include three business fundamentals courses, focused on critical skills identified from the needs assessment survey.

Table 5: Core business courses

| Course Number | Course Title | Existing or New |
|----------------|---------------------------|-----------------|
| CISM/MGNT 7431 | Project Management | Existing Course |
| MGNT 7330 | Leadership and Motivation | Existing Course |
| WRIT 5930G | Technical Writing | New Course |

Environmental Science Concentration

For the environmental science concentration area, students will gain an in-depth understanding of issues facing the environmental scientist and community. Emphasis areas include public policy and law, environmental science, and chemistry in regulated environments. Two required courses and one elective class make up the technical portion of the concentration area; students may choose courses from Table 6 below; other courses may be substituted with appropriate approval.

Table 6: Environmental Science Courses

| Course Number | Course Title | Existing or New |
|----------------|---|-----------------|
| CHEM 5233G | Environmental Chemistry (REQUIRED) | Existing Course |
| CHEM 7130 | Sustainability in the Physical Sciences (REQUIRED) | New Course |
| TSEC 5336G | Environmental Law | Existing Course |
| PBAD/POLS 7337 | Environmental Management & Policy | Existing Course |
| TSEC 5334G | Hazardous Waste Management | Existing Course |
| CHEM 7230 | Analytical Chemistry in Regulated Environments | New Course |
| CHEM 7030 | Special Topics | New Course |

Pharmaceutical Science Concentration

For the pharmaceutical science concentration area, students will prepare for careers in the pharmaceutical industry. Emphasis areas include design and synthesis of pharmaceutical materials, regulations and policy of new drug development, and the process of submitting new pharmaceutical intermediates. One required and two elective courses make up the technical portion of the concentration area; students may choose courses from the list in Table 7; other courses may be substituted with appropriate approval.

Table 7: Pharmaceutical Science Courses

| Course Number | Course Title | Existing or New |
|---------------|---|-----------------|
| PHYS 7330 | Principles and Practice of Pre-clinical Drug Development (REQUIRED) | New Course |

| | | |
|------------|--|-----------------|
| BIOS 7431 | Statistical Issues in Drug Development | Existing Course |
| CHEM 5332G | Principles of Drug Design | Existing Course |
| CHEM 5333G | Carbohydrate Chemistry | Existing Course |
| BIOS 7231 | Clinical Trials Methodology | Existing Course |
| CHEM 7230 | Analytical Chemistry in Regulated Environments | New Course |
| CHEM 7030 | Special Topics | New Course |

Material and Coatings Science Concentration

The material and coatings science concentration area will prepare students for a variety of careers in the general chemical industry. This concentration area will initially focus on solid-state material science, but is planned to ultimately include a focus in coatings, adhesives, and polymeric new materials. For this area, students will be required to take two required courses and select one elective (see Table 8).

Table 8: Material and Coatings Science Courses

| Course Number | Course Title | Existing or New |
|---------------|---|-----------------|
| PHYS 6237 | Applied Quantum Mechanics (REQUIRED) | New Course |
| PHYS 6131 | Physics of Solid State Materials (REQUIRED) | New Course |
| PHYS 6132 | Applied Optics | Existing Course |
| PHYS 6231 | Thin-Film Coatings | New Course |
| CHEM 7130 | Sustainability in the Physical Sciences | New Course |
| CHEM 7430 | Materials Chemistry | New Course |
| CHEM 7030 | Special Topics | Existing Course |

In addition, students will be expected to select 2 additional electives from an extensive list of options, intended to provide grounding in other essential skills needed to be successful in the workplace. The elective list in the appendix covers the most highly desired elective offerings based inputs from on the needs survey. A number of electives from the existing MBA program are also available for students. Additional electives may be substituted with appropriate approvals. Annual reviews of the program may highlight commonly requested electives either from students or industrial partners that should be added to the list.

Overview of the Thesis option (30 hours)

Required Core Coursework (18 hours):

- 3 science courses (core, 9 hours)
 - Identical to Non-thesis option
- 3 research courses (core, 9 hours)
 - Thesis (6 hours) and Seminar (3 hours)

Elective Coursework (12 hours):

- 4 courses within the chosen concentration (12 hours)

The second option for the new degree will also build on the successful undergraduate and graduate programs in the college and is very similar to the non-thesis option. Students who elect to complete the Master of Science in Physical Science program under a thesis option will also choose one of the three concentration areas and will enroll in the same three Core science classes as students in the non-thesis track. The major difference for the thesis option curriculum is the replacement of 15 non-science hours (9 hours of business fundamentals courses in the core and 6 hours of non-science electives) with 12 hours of science courses (3 hours of seminar (PHYS/CHEM 7610), and 6 hours of thesis (PHYS/CHEM 7999), and one extra elective (3 hours) in the chosen concentration) and the replacement of the final internship or industrial project (3 hours) with a written thesis document which must be defended. This curriculum requires a total of 24 hours of coursework and a research thesis (6 hours). The purpose of the thesis option is to introduce some flexibility into the MSPS program to serve students who are (or become) unsure of their future career path so that they have another path to the degree.

6. Admissions criteria. Please include required minimal scores on appropriate standardized tests and grade point average requirements.

- BS or BA degree in chemistry or physics from an appropriate regionally accredited college or university, or an equivalent degree from a recognized foreign college or university. Official TOEFL scores (not more than two years old) required for international students.
- Overall minimum GPA = 3.0 on a 4.0 scale
- Official GRE Report showing competitive subtest scores
- 2 Letters of Recommendation
- Applicant's Statement of Purpose, which must address (1) the student's preparation for graduate study, (2) the student's goals for the graduate program, potential concentration area, and possible advisor (for thesis option), & (3) the student's professional goals following completion of the MSPS program
- The applicant must have the appropriate undergraduate preparation for the area of concentration. This requires meeting the general MSPS requirements and the pre-requisites listed for the particular concentration area.

7. Availability of assistantships (if applicable).

Students enrolling in the program will be traditional on-campus or online students. It is anticipated that the online students will be full paying students with many having the support of employer tuition benefit programs. On-campus students will be either full paying or receive graduate teaching assistantships (GA) by applying for the limited number of competitive GAs administered through the Graduate College. Currently the Departments of Chemistry and Physics rely on a significant number of temporary faculty positions to teach the laboratories associated with courses, as neither department has an existing graduate program. The use of GAs to teach these laboratories instead of temporary faculty would allow these departments to cover more laboratory sections for the same costs. Therefore, the new Master of Science in Physical Science program is not requesting assistantships to support this program. Instead the Chemistry and Physics Departments anticipate the ability to offer assistantships in the future by reallocating instructional resources.

8. Student learning outcomes and other associated outcomes of the proposed program.

The overarching goal of the new Master's program is to prepare students with a combination of focused training in a growing scientific field with highly-valued business skills conducive to meeting the needs of a 21st Century workforce in this regional area. The key deliverables of this program are to establish a new sustainable graduate degree based on the interdisciplinary fields of chemistry, physics, and business in the College, and to support the economic development of regional industry by increasing the available workforce trained in both science and business skills. The goals of the Master of Science in Physical Science Program at Georgia Southern University are to provide students with

- 1) a broad-based understanding of the chemistry and physics underlying specific concentration areas through core courses
- 2) a deeper level understanding of the applicability of science to business problems through a real-world summer internship or project
- 3) a spectrum of highly skilled training in their interest area through elective courses

At the time of completion of the requirements of this program students will

- 1) demonstrate a broad knowledge of physics, chemistry, statistics and the interdisciplinary science in their concentration area
- 2) demonstrate analytical and organization skills to deal with large quantities of data, evidence, clues and be able to generate testable hypothesis for problem solving
- 3) demonstrate good project management skills from initiation to completion, including information searching, strategic planning, problem solving, and drawing conclusions
- 4) demonstrate skills in communications of technical information, management, and team work

Performance Assessment / Project Evaluation

The purpose of assessment is to improve the Master of Science in Physical Science program to effectively meet the professional needs of the students and their potential employers, and to evaluate and update specific objectives of the program. Assessment of the program will periodically evaluate how well the core courses, elective courses, internship and other activities fit the program mission and goals. The achievement of long- and short-term goals will be evaluated using a variety of measurement tools. There will be two types of assessments: an external, objective-based evaluation from industrial partners and an internal, outcome-based evaluation from faculty and students. The assessments will be given biannually in the first three years of the program and annually afterward. There are four steps in the assessment program:

- 1) Assessment documentation: Based on the program mission and goals, the program oversight team will develop questionnaires, evaluation forms, and any special requirements for external or internal (faculty and student) evaluation. The documentation will be finalized with the Georgia Southern University graduate school office to meet the mission and goals of the University. Independent consultant(s) will also be used for objective review and comments.
- 2) Data collection: Reviewers include program faculty, students, and advisors/managers from industry who will evaluate the program to their best of their knowledge by completing the questionnaires and evaluation forms. Data will also be collected from student performance on course work, projects, presentations, team work and information from graduate school administration (GPA, GRE) at the time of admission.
- 3) Data analysis and assessment report: Data will be objectively analyzed and a report will be prepared by the program oversight team. A summative and formative annual report will be

circulated to representatives of the departments, college, and graduate school and to independent consultant for comments. The report will identify strengths and weaknesses, recommend implementation of suggestions and improvements, and provide an overall evaluation of the program.

- 4) **Implementation:** The program oversight team will review suggestions from each evaluation report annually and draw conclusions on how best to improve the current program. An implementation plan including proposed actions will be submitted to the principal decision makers within the college, department and graduate school. The proposed plan changes will be implemented after a final review with appropriate parties upon finalizing recommendations.

Measurement tools

Measurement tools, focused on knowledge-based and skill-based objectives, will be used to evaluate how well the objectives have been achieved during the evaluation period of the program. The principle tools to be used will be

- 1) Pre- and post-test results from each core course (knowledge-based)
- 2) Course presentations will be videotaped and electively reviewed by other program faculty (skill-based)
- 3) Final projects will be evaluated by faculty and classmates in course work (knowledge-based)
- 4) Internship projects will be evaluated during the summer internship by the industrial partner and the faculty advisor (skill-based)
- 5) Thesis defense (for thesis option)

9. Administration of the program:

- a. *Indicate where the program will be housed within the academic units of the institution.*
- b. *Describe the administration of the program inclusive of coordination & responsibility.*

The new program will be housed within the College of Science & Technology and the Departments of Chemistry and Physics. The proposed program will be administered by a graduate director (initially from the Chemistry department) who will be a full-time tenure-track faculty member. The director will chair the graduate committee, which is responsible for determining the acceptance of graduates into the program and for coordinating administrative and curriculum changes to the program. The graduate committee consists of three tenure track graduate faculty members (one member each from Chemistry and Physics plus the committee chair).

10. Waiver to Degree-Credit Hour (if applicable): If the program exceeds the maximum credit hour requirement at a specific degree level, then provide an explanation supporting the increase in hours (Note: The maximum for bachelor's degrees is 120-semester credit hours and the maximum for Masters degrees is 36-semester credit hours).

Not applicable

11. Accreditation: Describe disciplinary accreditation requirements associated with the program (if applicable).

Not applicable as there are no accreditation bodies specific for Chemistry or Physics graduate programs. However, the non-thesis track, the Professional Science Master degree, is a growing trend in

the terminal Master's field and as such has a national organization, the National Professional Science Master Association (www.sciencemasters.com), initially sponsored by the Alfred P. Sloan Foundation. Our non-thesis program has been modeled to meet the criteria for membership into this organization. Once the program has been approved, we will submit an application to become a member of the National Professional Science Master Association.

12. Projected enrollment for the program especially during the first three years of implementation. Please indicate whether enrollments will be cohort-based.

Enrollment in the Master of Science in Physical Science degree program is initially projected at five students (spring 2012), increasing by five each year until reaching approximately a steady-state of 20 new students enrolling each year (see Table 9). This projection results in a total enrollment of five students the first year, 15 students the second year, 25 students the third year, and 35 in the fourth year. After that, it is expected that enrollment will increase by 5 students until leveling out at 40 total students in the fall of 2016. Enrollments will be cohort-based.

Table 9: Enrollment Projections: MSPS Program

| | First Year | Second Year | Third Year | Fourth Year |
|----------------------------------|------------|-------------|------------|-------------|
| I. ENROLLMENT PROJECTIONS | | | | |
| Student Majors | | | | |
| Shifted from other programs | 0 | 0 | 0 | 0 |
| New to the institution | 5 | 10 | 15 | 20 |
| Continuing majors | 0 | 5 | 10 | 15 |
| Total Majors | 5 | 15 | 25 | 35 |
| | | | | |

13. Faculty

a. Provide an inventory of faculty directly involved with the administration of the program. For each faculty member, provide the following information:

| Faculty Name | Rank | Highest Degree | Degrees Earned | Academic Discipline | Current Workload |
|----------------|---------------------|----------------|----------------|---------------------|-----------------------------|
| Mark Edwards | Professor & Chair | Ph.D. | B.S., M.A. | Physics | 3 contact hours/semester |
| Cleon Dean | Associate Professor | Ph.D. | B.S. | Physics | 9-12 contact hours/semester |
| Delena Gatch | Assistant Professor | Ph.D. | B.S. | Physics | 9-12 contact hours/semester |
| Clayton Heller | Associate Professor | Ph.D. | B.S. | Physics/Astronomy | 9-12 contact hours/semester |
| Jim Higdon | Assistant Professor | Ph.D. | B.S. | Physics/Astronomy | 9-12 contact hours/semester |
| Sarah Higdon | Lecturer | Ph.D. | B.S. | Physics/Astronomy | 15 contact hours/semester |
| Li Ma | Associate Professor | Ph.D. | B.S. | Physics/Chemistry | 9-12 contact hours/semester |

| | | | | | |
|--------------------|---------------------|-------|------|--------------|-----------------------------|
| Xiao-jun Wang | Professor | Ph.D. | B.S. | Physics | 9-12 contact hours/semester |
| Jing-Yuan Zhang | Professor | Ph.D. | B.S. | Physics | 9-12 contact hours/semester |
| John DiCesare | Professor & Chair | Ph.D. | B.S. | Chemistry | 3 contact hours/semester |
| Karelle Aiken | Assistant Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |
| Shannon Davis | Assistant Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |
| Laura Frost | Professor | Ph.D. | B.S. | Biochemistry | 9-12 contact hours/semester |
| Michael Hurst | Associate Professor | Ph.D. | B.S. | Biochemistry | 9-12 contact hours/semester |
| Brian Koehler | Associate Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |
| David Kreller | Assistant Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |
| James LoBue | Associate Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |
| Allison Long | Associate Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |
| Michele McGibony | Associate Professor | Ph.D. | B.S. | Biochemistry | 9-12 contact hours/semester |
| Mohammed Abid | Assistant Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |
| Jeffery Orvis | Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |
| Norman Schmidt | Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |
| Dontarie Stallings | Assistant Professor | Ph.D. | B.S. | Biochemistry | 9-12 contact hours/semester |
| Christine Whitlock | Professor | Ph.D. | B.S. | Chemistry | 9-12 contact hours/semester |

Explanation of how workload will be impacted by the new program:

There will not be any changes in the current workload assignments of faculty. Existing faculty will be able to teach the new offered courses through efficient scheduling of elective courses within the departments

Expected responsibilities in the program:

The faculty will be expected to teach a graduate course in one of the concentration areas on a rotational basis, maintain currency in online content and presentation where appropriate and interact with the graduate students by serving as advisors for the industrial internship/project for the non-thesis MSPS students and as thesis advisors for the thesis option students.

Total Number of Faculty: 24

b. If it will be necessary to add faculty in order to begin the program, give the desired qualifications of the persons to be added, with a timetable for adding new faculty and plan for funding new positions.

This new program can be administered and taught with the existing faculty in the Departments of Chemistry and Physics by efficient scheduling of elective courses within the departments.

14. Fiscal, Facilities, Enrollment Impact, and Estimated Budget

a. Provide a narrative that explains how current institutional resources will be expended specifically for this program. Provide a narrative that explains how the institution will fiscally support the establishment of the new program through the redirection of existing resources and acquisition of new resources. Indicate whether the institution will submit a request for new funds as part of its budget request. The narrative also needs to explain the basis of the institution's projections with regard to anticipated EFT, head count, student enrollment, estimated expenditures, and projected revenues.

The projections detailed in the table below are derived by considering the number of new courses that need to be offered and the number of students who will enroll in the program. The main emphasis of our new program is to establish a non-thesis Professional Science Masters degree that combines graduate level science and business courses. The non-science courses were chosen from existing graduate courses taught at Georgia Southern in consultation with appropriate departmental Chairs and college Deans as to not cause the need to add any additional sections of these courses or changes in personnel usage based on our projected enrollment. Therefore the numbers corresponding to current institutional resources are based on changes in the departments of Chemistry and Physics. The proposed program will require the development of 11 new courses in addition to the revamping of several senior level existing undergraduate courses to include suitable graduate level content (a fairly simple process as most of these courses are already equivalent to graduate courses at other universities). The number of courses taught in any given year will be much lower as not all courses will be taught every year. In any given year, the maximum number of new course load to the departments of Chemistry and Physics will be four courses a semester and most semesters will be lower. Therefore the cost of the program in terms of redirection of existing resources is based on the maximum number of four new courses a semester.

This new program can be administered and taught with the existing faculty in the Departments of Chemistry and Physics by efficient scheduling of elective courses within the departments and by combining several 1000 level sections of an intro-course into one larger section. The Chemistry department is equipped to offer three additional courses each semester by converting existing upper-level elective courses that have traditionally coupled a 3-contact hour lecture with a 3-contact hour lab into a 3-contact hour lecture only course. The coupled lecture/lab upper-level elective courses are fairly unique in a chemistry program and were developed out of necessity. Up until seven years ago, the Chemistry department did not have adequate research laboratories to conduct undergraduate research for the vast majority of our majors. Therefore, in order for our undergraduates to obtain exposure to advanced instrumentation and techniques, laboratories were coupled to the upper level elective lecture courses. Over the last 7 years, the Chemistry department has now gained the capacity to offer all of our graduates the opportunity to participate in undergraduate research and therefore no longer need to have all of our elective courses have a lab component. The Chemistry department currently offers four upper-level elective courses each semester to satisfy the needs of our large number of majors (over 500 undergraduate majors). Therefore we plan to convert three of these lecture lab courses each semester into lecture-only courses that will allow us to redirect the teaching load of the labs into three new graduate courses each semester. The Physics department plans to combine four sections of a 1000 level course into one section, thereby allowing them to redirect the teaching load of the combined sections into two new graduate courses, one taught each semester. The above reassignment will result in the ability of the departments of

Chemistry and Physics to offer four new courses each semester as needed. Georgia Southern University will not submit a request for new funds as part of its budget request.

The projected number of students to enroll into the new MSPS program is based on a conservative estimate of five students in the first year and then increasing the number of new students to the program by 5 students each year until 20 students are achieved. It is estimated that any loss of students will be offset by increases in estimated number of new students. The main recruitment pool of students for the initial years of the program will be the undergraduates enrolled in the Georgia Southern chemistry and physics programs. Each year the combined number of graduates from both of these programs is about 50 students, sufficient to fully populate this program. Many of these students have expressed an interest in remaining for a graduate degree if one was available. The expenditures are revenue neutral, as they will result from redirecting existing faculty teaching load as described in the above paragraphs and are based on the cost of a full time faculty member to teach a course (9% of his/her academic year salary, or approximately \$5,625 per course plus benefits). The projected revenues are based on the number of students in the program each enrolling in 9 credit hours a semester at \$250 per credit hour.

| | First Year | Second Year | Third Year | Fourth Year |
|--|------------------|-------------------|-------------------|-------------------|
| I. ENROLLMENT PROJECTIONS | | | | |
| Student Majors | | | | |
| Shifted from other programs | 0 | 0 | 0 | 0 |
| New to the institution | 5 | 10 | 15 | 20 |
| Continuing majors | 0 | 5 | 10 | 15 |
| Total Majors | 5 | 15 | 25 | 35 |
| Course Sections Satisfying Program Requirements | | | | |
| Previously existing | 6 (3 non-sci) | 11 (6 non-sci) | 18 (6 non-sci) | 18 (6 non-sci) |
| New | 2 | 7 | 0 | 0 |
| Total Program Course Sections | 8 (3 non-sci) | 18 (6 non-sci) | 18 (6 non-sci) | 18 (6 non-sci) |
| Credit Hours Generated by Those Courses | | | | |
| Existing course enrollments* | 78 | 180 | 450 | 630 |
| New course enrollments* | 12 | 90 | 0 | 0 |
| Total Credit Hours | 90 | 270 | 450 | 630 |
| *Note: these courses will also have undergraduate students enrolled that will increase the credit hours generated. | | | | |
| DEGREES AWARDED | | | | |
| | 0 | 5 | 10 | 15 |
| II. EXPENDITURES | | | | |
| | EFT Dollars | EFT Dollars | EFT Dollars | EFT Dollars |
| Personnel – reassigned or existing positions | | | | |
| Faculty | \$18,750 | \$45,000 | \$45,000 | \$45,000 |
| Part-time Faculty | | | | |
| Graduate Assistants | | | | |
| Administrators | | | | |
| Support Staff | | | | |
| Fringe Benefits (Salary*17.93%) | \$3,362 | \$8,068 | \$8,068 | \$8,068 |
| Other Personnel Costs | | | | |
| Total Existing Personnel Costs | \$22,112 | \$53,068 | \$53,068 | \$53,068 |

| | | | | |
|--|----------|----------|----------|----------|
| EXPENDITURES (Continued) | | | | |
| Personnel – new positions | | | | |
| Faculty | | | | |
| Part-time Faculty | | | | |
| Graduate Assistants | | | | |
| Administrators | | | | |
| Support Staff | | | | |
| Fringe Benefits | | | | |
| Other personnel costs | | | | |
| Total New Personnel Costs | \$0 | \$0 | \$0 | \$0 |
| | | | | |
| Start-up Costs (one-time expenses) | | | | |
| Library/learning resources | | | | |
| Equipment | | | | |
| Other | | | | |
| | | | | |
| Physical Facilities: construction or major renovation | | | | |
| Total One-time Costs | \$0 | \$0 | \$0 | \$0 |
| | | | | |
| Operating Costs (recurring costs – base budget) | | | | |
| Supplies/Expenses | \$500 | \$500 | \$500 | \$500 |
| Travel | \$500 | \$500 | \$500 | \$500 |
| Equipment | | | | |
| Library/learning resources | | | | |
| Other | | | | |
| Total Recurring Costs | \$1,000 | \$1,000 | \$1,000 | \$1,000 |
| | | | | |
| GRAND TOTAL COSTS | \$23,112 | \$54,068 | \$54,068 | \$54,068 |

| | | | | |
|---|----------|-----------|-----------|-----------|
| | | | | |
| III. REVENUE SOURCES | | | | |
| Source of Funds | | | | |
| Reallocation of existing funds | \$22,112 | \$53,068 | \$53,068 | \$53,068 |
| New student workload | | | | |
| New Tuition (\$250/credit hr) | \$22,500 | \$67,500 | \$112,500 | \$157,500 |
| Federal funds | | | | |
| Other grants | | | | |
| Student fees | | | | |
| Other | | | | |
| New state allocation requested for budget hearing | | | | |
| | | | | |
| Nature of Funds | | | | |
| Base budget | | | | |
| One-time funds | | | | |
| | | | | |
| GRAND TOTAL REVENUES | \$44,612 | \$120,568 | \$165,568 | \$210,568 |

Facilities Information for New Academic Programs

Proposed Location for the Program: Departments of Chemistry and Physics

Floor area required for the program (gross and net square feet): 70,000 sq feet (net)

The departments of Chemistry and Physics currently occupy approximately 70,000 sq. feet of lecture, lab and office space located in the Nursing/Chemistry and

Mathematics/Physics buildings. This space is sufficient to accommodate the requested degree program.

Type of spaces required:

| | |
|--------------------------------------|-------------------|
| ■ Number of classrooms | <u>10</u> |
| ■ Number of labs (Research/teaching) | <u>40</u> |
| ■ Number of offices | <u>22</u> |
| ■ Other spaces | <u> </u> |

Place an "X" beside the appropriate selection:

 X Existing facility will be used as is (70,000 sq. feet):

 Existing facility will require modification (area square footage):

Projected renovation cost:
Estimated relocation cost:
Total funding required:
Source of Funding:

 Construction of new facilities will be required (area square footage):

Estimated construction cost:
Estimated total project cost:
Proposed source of funding:

List any infrastructure impacts that the program will have (i.e., parking, power, HVAC, etc.) and indicated estimated cost and source of funding.

No impacts on parking, power, HVAC, etc.

Other comments:

Note: A system office Facilities Project Manager(through the Office of Facilities) may contact you with further questions separate from the review of the new academic program.

APPENDIX A

Executive Summary and Curriculum Details

Executive Summary

The Master of Science in Physical Science

Georgia Southern University's Master of Science in Physical Science is a terminal professional degree that prepares graduates for the workplace by giving them real-world experience applying their knowledge of mathematics and science to projects of interest to the business, government, and nonprofit sectors. Students gain a deeper understanding of the science and mathematics used in their fields, as well as a solid grounding in business fundamentals and communications, preparing them to become leaders in the business aspects of science. Two options will be available to students: a terminal, non-thesis or a terminal, thesis option. The concentration areas are interdisciplinary, building on the expertise of Georgia Southern faculty in three specific areas:

- Environmental Science
- Pharmaceutical Science
- Materials and Coating Science

Overview of the Non-thesis option (36 hours)

Required Core Coursework (21 hours):

- 3 science courses (core, 9 hours)
 - Chemical industry foundation, statistics, and scientific ethics
- 3 business fundamentals courses (core, 9 hours)
 - leadership, project management, and technical communications
- A final internship or industrial project (3 hours)
 - in a real working environment with timely goals and deliverables
 - application of knowledge to a relevant business problem
 - oral and written presentation of results

Required and Elective Coursework (15 hours):

- 3 science electives (to deepen knowledge in one of the concentration areas) - (9 hours)
- 2 non science electives (6 hours):
 - specific business skills such as finance, accounting, or marketing
 - leadership skills
 - applied statistics

Overview of the Thesis option (30 hours)

Required Core Coursework (18 hours):

- 3 science courses (core, 9 hours)
 - Identical to Non-thesis option
- 3 research courses (core, 9 hours)
 - Thesis (6 hours) and Seminar (3 hours)

Elective Coursework (12 hours):

- 4 courses within the chosen concentration (12 hours)

Admission Requirements

- BS or BA degree in chemistry or physics from an appropriate regionally accredited college or university, or an equivalent degree from a recognized foreign college or university. Official TOEFL scores (not more than two years old) required for international students.
- Overall minimum GPA = 3.0 on a 4.0 scale
- Official GRE Report showing competitive subtest scores
- 2 Letters of Recommendation
- Applicant's Statement of Purpose, which must address (1) the student's preparation for graduate study, (2) the student's goals for the graduate program, potential concentration area, and possible advisor & (3) the student's professional goals following completion of the program
- The applicant must have the appropriate undergraduate preparation for the area of concentration. This requires meeting the general MSPS requirements and the pre-requisites listed for the particular concentration area.

Curriculum Requirements

Requirements:

Non-thesis option: 12 courses (36 credit hours of course work) including one internship or industrial project experience (equivalent to 3 credit hours).

Thesis option: 10 courses (30 credit hours of course work) plus a research thesis describing work performed in collaboration with chemistry or physics graduate faculty, and both oral and written presentations of the results.

Students are expected to be full time students; completion of this degree will require 2 years or 5 semesters of study.

A maximum of 12 credit hours at the 5000 level are allowed.

Curriculum Details

ACCT 7134 (ONLINE)

Financial Reporting and Analysis: 3-0-3

This course focuses on the interpretation of financial statement information for decision making. Topics include understanding the importance of industry context and the firm's own strategic choices in evaluating the financial statement; assessing the quality of financial statement information and recognizing situations where more stringent forensic accounting measures might be appropriate; evaluating profitability and risk; associating subsets of the available analytical tools with the kinds of decisions for which they are most appropriate; and recognizing the effects of GAAP on the input variables of various firm valuation models.

ACCT 7230 (ONLINE)

Accounting for Executives: 3-0-3

A study of management accounting and control information. This course shows how to make pricing and product mix decisions, how to improve existing activities and processes, how to measure performance in decentralized operating units, and how to align organizational activities with long-term strategic objectives, both in a domestic and international setting.

BIOS 7231

Clinical Trials Methodology: 3-0-3

Students are introduced to regulatory, scientific, statistical and practical aspects of methods inherent in design, monitoring and analyzing clinical trials. Clinical trials in many areas of drug development are presented, discussed and critiqued. Prerequisite: A minimum grade of "C" in PUBH 6541.

BIOS 7431

Statistical Issues in Drug Development: 3-0-3

Major statistical issues in the federal regulation of drug research and clinical development will be studied. Specifically, summarization, analysis and monitoring of adverse experiences, two treatment crossover designs, active control equivalence studies, optimization in clinical trials and combination drug development, dosing in the elderly, intention to treat in clinical trials, and dual control groups in rodent carcinogenicity studies will be studied. Prerequisites: BIOS 6331 and BIOS 6332 or equivalent.

BUSA 7130 (ONLINE)

International Business: 3-0-3

This course presents fundamental considerations for managers of international trade operations, providing students with the experience of simulating the business of exporting. Prerequisites: Graduate standing and the completion of the MBA core or permission of the COBA Director of Graduate Studies for non-MBA students.

CHEM 5233G (ONLINE)

Environmental Chemistry: 3-0-3

A survey of the current environmental issues and the underlying chemistry associated with them, including stratospheric chemistry, air pollution, global climate change, toxic organic chemicals, natural water systems, soil chemistry, and energy production. Graduate students will be given an extra assignment determined by the instructor that undergraduates will not be required to do. Prerequisites: A minimum grade of "C" in CHEM 2242 and CHEM 3342, or equivalent.

CHEM 5331G (ONLINE)

Advanced Organic Chemistry: 3-0-3

A course designed to build upon the knowledge gained in CHEM 3341 (Organic I) and CHEM 3342 (Organic II). Topics covered may include considerations of structural and mechanistic organic chemistry, synthetic organic chemistry and bioorganic chemistry.

CHEM 5332G (ONLINE)

Principles of Drug Design: 3-0-3

A course designed to introduce the chemistry of drug design and development, as well as drug actions and their impacts on society. Topics include drug discovery, receptor site theory, neurotransmitters, pharmacokinetics, federal drug laws, drugs in sports and individual courses of drugs.

CHEM 5333G (ONLINE)

Carbohydrate Chemistry 3-0-3

This course provides students with an introduction to the chemistry of carbohydrates. Carbohydrates are found in all organisms and serve various functions including energy/nutrition and cell-to-cell communications. Carbohydrate chemistry is an interdisciplinary field of study incorporating organic chemistry, analytical chemistry, and biochemistry. Topics include structural aspects, stereochemistry, synthesis, conformational analysis, polysaccharides, and vaccine development.

CHEM 6130 (ONLINE)

Industrial Chemistry 3-0-3

This course will provide an overview of the petrochemical and basic chemical industry. Topics to be covered will be the origin and manufacture of basic petroleum feedstocks; polymers and plastics; green chemistry, pharmaceuticals, and nuclear chemistry. Intellectual property issues (basics of patent law, invention disclosures, trademarks, trade secrets) that practicing scientists should know will be addressed. Proper documentation of research and use and keeping of laboratory notebooks for regulated industries will also be explored. The impact of these industries on the economy of the United States, risk assessment, and cost/benefit analyses are also addressed.

CHEM 6230 (ONLINE) – *New course to be developed*

Scientific Inquiry and Ethics 3-0-3

This course will provide an overview of methods and philosophy of scientific inquiry and ethics of scientific research. Extensive use of case studies, analysis of research misconduct cases, and role playing will be used. An overview of the basic principles of scientific principles of scientific inquiry will be provided.

CHEM or PHYS 6730 – *New courses to be developed*

Master of Science in Physical Science Internship 3-0-3

This 10 week internship will provide the student an opportunity to apply skills and knowledge to solve a real world business problem. A problem with specific timelines and constraints will be developed in collaboration with industrial partners which is relevant to the particular concentration area the student has chosen; the internship may be carried out in the work environment at the industrial partner location or at the University. Typically this internship class will be taken the summer after the completion of the first year of study.

CHEM 7130 (ONLINE) – *New course to be developed*

Sustainability in the Physical Sciences 3-0-3

This course will focus on the 12 Principles of Green Chemistry and Engineering. Case studies, analysis of sustainability trends and common practices, and future research will be covered. Lifecycle analysis, current best practices in sustainability, the triple bottom line, social impacts of sustainability, and other topics will be discussed.

CHEM 7230 (ONLINE) – *New course to be developed*

Analytical Chemistry in a Regulated Environment 3-0-3

This course is designed to introduce major analytical instruments and their application in regulated environments such as FDA, EPA, OECD and the pharmaceutical industry, or forensic science. The concept of good laboratory practices (GLP) will be introduced. Major analytical methods used for product physical/chemical characterization, quality control, purity/impurity testing, and potency testing are introduced. Practices on instrument Installation Qualification/Operational Qualification/Performance Qualification (IQ/OQ/PQ) and maintenance as well as analytical method validation are included. The GLP regulations Code of Federal Regulations Title 21 part 58 from the FDA and FIFRA in 40 CFR Part 160 and for TSCA in 40 CFR Part 792 from EPA will be introduced. Practices are covering development of Standard Operating Procedures (SOPs) from topics of personnel, facility, and equipment to the quality assurance unit.

CHEM 7430

Materials Chemistry 3-0-3

This course will cover applied polymer science, analysis of polymeric materials, processing equipment, and the chemistry of polymers.

CISM 7330

Information Technology Management: 3-0-3

Designed to enable the manager to effectively utilize and manage information technology in the applied business environment. The course focuses on the managerial, not the technical aspects of information management. No prior technical expertise is required. Relevant readings and cases are used to apply the concepts and techniques presented in the course. Prerequisites: Graduate standing and the completion of the MBA prerequisites, or permission of the Director of COBA Graduate Studies for non-MBA students.

CISM/MGNT 7431 (ONLINE)

Project Management: 3-0-3

This course focuses on the principles and processes of project management using a systematic approach to problem solving. The project management body of knowledge areas (PMBOK) is covered, along with project management life cycle in addition to traditional project management (e.g., efficiency of the project, operational performance, planning, meeting time and budget goals). This course will give special emphasis to the management of implementation projects relevant to the students' majors, e.g. Enterprise Resource Planning (ERP) for Information Systems students or Total Quality Management (TQM) for Management students. Students are also taught how to use computer software to facilitate project management, and obtaining project management certification is emphasized. Prerequisites: A minimum grade of "B" in CISM 7330, graduate standing and the completion of the MBA prerequisites or permission of the IS Department chair for non-MBA students. Prior completion of CISM 7331 is recommended.

MGNT 7330

Leadership and Motivation: 3-0-3 (ONLINE)

A study of leadership and motivation. This course provides an overview of existing theories and models of leadership and motivation. Using readings, cases, discussion, and guest speakers, the course explains the importance of leadership, motivation, power, and influence in organizational life. Special emphasis is placed on leadership for change. Prerequisites: Graduate standing and completion of MBA prerequisites, or permission of Director of COBA Graduate Studies for non-MBA students.

PBAD/POLS 7337

Environmental Management and Policy: 3-0-3

An overview of environmental and natural resource management in the United States. Particular attention will be paid to issues of regional importance, including water quality and availability, regulation and monitoring compliance, sustainable growth, and management within overlapping jurisdictions.

PHYS 6131 – *New course to be developed*

Physics of Solid State Materials 3-0-3

Introduction to the physical properties of solids. Topics may include: Periodic structure and symmetry of crystals, diffraction, reciprocal lattice, chemical bonding, lattice dynamics, phonons, thermal properties, free electron gas, model of metals, Bloch theorem and band structure, nearly free electron approximation, tight binding method, Fermi surface, semiconductors, electrons, holes, impurities, optical properties, excitons, and magnetism. Prerequisites: PHYS 3536, MATH 2242

PHYS 6132 – *New course to be developed*

Applied Optics 3-0-3

This course offers an introduction to laboratory optics, optical principles, and optical devices and systems. This course covers a wide range of topics, including: polarization properties of light, reflection and refraction, coherence and interference, Fraunhofer and Fresnel diffraction, holography, imaging and transforming properties of lenses, spatial filtering, two-lens coherent optical processor, optical properties of materials, lasers, electro-optic, acousto-optic and liquid-crystal light modulators, optical detectors, optical waveguides and fiber-optic communication systems. Students engage in extensive oral and written communication exercises. Prerequisites: PHYS 3536, MATH 2242

PHYS 6231 – *New course to be developed*

Thin-Film Coatings (Developed in collaboration with Viracon staff) 3-0-3

This course will cover the physics and chemistry of conductive coatings applied to dielectric substrates such as float glass. Topics considered will include thermal and optical properties of multilayer metallic coatings and coating manufacturing techniques such as sputtering.

PHYS 6237 (ONLINE) – *New course to be developed*

Applied Quantum Mechanics: 3-0-3

This course is designed to review Schrodinger's theory of quantum mechanics for application in modern devices and systems. Topics covered are quantum statistics, multi-electron atoms, molecules, one and two dimensional systems, and the neon particle system. Calculation techniques introduced are matrix diagonalization, perturbation theory, and variational methods. Also, time-dependent perturbation theory as applied to optical absorption, nonlinear optical properties of materials will be discussed.

PHYS 7330 (ONLINE) – *New course to be developed*

Principles and Practice of Pre-clinical Drug Development 3-0-3

This course is designed to introduce the key issues and aspects of developing a new small molecule or biological drug. The course focuses on the guidelines from regulatory agencies such as the FDA on the types of data required for the Investigational New Drug (IND) application. Major issues in Pharmacology, Toxicology, Safety Pharmacology, Pharmacokinetics and Chemistry, Manufacturing and Control (CMC) sections of the IND submission are described.

Practices cover examples of laboratory animal efficacy models, pharmacokinetics models, toxicology study protocols, master batch record generation and the concepts of Good Laboratory Practice (GLP)/Good Manufacturing Practices (GMP). Particularly, in GLP/GMP portion of the course Code of Federal Regulations Title 21 part 58, 210 and 211 will be introduced. Key issues in quality control of active ingredients, drug substance and drug product as well as in-process control will be discussed. Practices covering development of Standard Operating Procedures (SOPs) and generation of study protocols/reports, master-batch records, and certificates of analysis are provided. The GLP portion of the course describes key requirements including personnel, facility, equipment and the quality assurance unit. Interdisciplinary aspects are provided by faculty members who have experience in managing new drug pre-clinical development from bench-top to IND submission. Invited guests from industry and regulatory agencies are also expected to participate.

PUBH 6541

Biostatistics: 3-0-3

This course examines statistics in public health and related health sciences, including sampling, probability, basic discrete and continuous distributions, descriptive statistics, hypotheses testing, confidence intervals, categorical data analysis, regression, and correlation. Emphasis will be on the development of critical thinking skills and health data analysis applications with computer software.

STAT 5531G

Statistical Methods I: 3-0-3

This is the first of a two course sequence in applied statistics. The material covered will provide an introduction to statistical concepts and terminology while focusing on descriptive and inferential methods of data analysis. Topics include descriptive statistics, parameter estimation, tests of significance, confidence intervals, analysis of variance, simple linear regression and correlation. Both parametric and nonparametric methods are presented for the analysis of central tendency, variability, proportions and categorical data. Graduate students will be given an extra assignment determined by the instructor that undergraduates will not be required to do. Prerequisite: A minimum grade of "C" in MATH 3337.

STAT 7231

Design of Experiments I: 3-0-3

Various statistically designed experiments are introduced including randomized blocks designs, Latin squares, incomplete block designs, factorial and fractional factorial designs with and without confounding and nested designs. Prerequisite: STAT 5531.

STAT 7234

Statistical Process Control: 3-0-3

Philosophy of statistical process control is studied along with SPC techniques of control charts, process-capability, designed experiments and acceptance sampling. Prerequisite: STAT 5531.

TMAE 7430

Industrial Case Study Analysis: 3-0-3

The systems approach and case study format are utilized for the resolution of current technical management problems of various industries. Problem solving methods are presented, discussed, and utilized in student activities.

TMAE 7431

Advanced Quality Control: 3-0-3

A study of modern philosophies, methodologies, and technologies for quality control and improvement with emphasis on total quality management, statistical process control, quality improvement methods and acceptance sampling.

TSEC 5334G

Hazardous Waste Management: 3-0-3

A study of hazardous waste substances as they are created by various industries and their proper management by combining planning, organizing, and controlling techniques with a knowledge of generating, storing, transporting, treating, recycling and disposing of hazardous materials. Issues of environmental impact, regulatory compliance, ethics, and program management are discussed from a technical management perspective. Graduate students will be given an extra assignment determined by the instructor that undergraduates will not be required to do. Prerequisite: One chemistry course or permission of instructor.

TSEC 5336G

Environmental Law: 3-0-3

A course designed to provide an introduction and overview (for those without legal or specific scientific training) of the system through which our nation attempts to preserve the environment. The U.S. legal system, national, and

international environmental policy is reviewed. Emphasis is placed on the control of air quality, water quality, toxic substances, and hazardous releases as it relates to environmental regulation of industry. Graduate students will be required to complete an additional project or assignment in addition to the undergraduate course requirements.

WRIT 5930G

Technical Writing 3-0-3

A new class based on two existing undergraduate courses (WRIT 2130 & 3130). Teaches students to improve written, oral, and visual communication by requiring assignments relevant to their proposed professions. The focus is on the type of communication required by the scientific and engineering discourse communities. Prepares students from all disciplines to be effective communicators in their chosen professions. Students learn to write and prepare a variety of documents, including memos, letters, reports, proposals, critical studies, and recommendations. Prerequisite: A minimum grade of "C" in ENGL 1102.

B. College of Liberal Arts and Social Sciences

Dr. Johnathan O'Neill presented the agenda item for the Department of History.

Dr. Trenton Davis presented the agenda items for the Department of Political Science.

Department of History

New Course:

HIST 5030G - Selected Topics in History

JUSTIFICATION:

This course is needed to offer a graduate elective course in Selected Topics in History for students taking courses on-campus. This course will also have an undergraduate section.

Department of Political Science

New Courses:

PBAD 8131 - Survey of Public Administration for the In-Career Professional

JUSTIFICATION:

This is one of the five courses required of in-career professional students who wish to earn a Certificate in Public and Nonprofit Management. This course is necessary to provide students with best practices in Public and Nonprofit Management as they relate to the basic theoretical components of public administration and their practical application, principally because it represents a core component of public administration, as prescribed by the National Association of Public Affairs and Administration, the program's accrediting body.

This is one of the five courses required of in-career professional students who wish to earn a Certificate in Public and Nonprofit Management. This course is necessary to provide students with best practices in Public and Nonprofit Management, as evidenced by the fact that it represents a core component of public administration, as prescribed by the National Association of Public Affairs and Administration, the program's accrediting body.

PBAD 8132 - Theory and Practice of Public and Nonprofit Management

JUSTIFICATION:

This is one of the five courses required of in-career professional students who wish to earn a Certificate in Public and Nonprofit Management. This course is necessary to provide students with best practices in Public and Nonprofit Management, as evidenced by the fact that it represents a core component of public administration, as prescribed by the National Association of Public Affairs and Administration, the program's accrediting body.

PBAD 8133 - Human Resource Management for the In-Career Professional

JUSTIFICATION:

This is one of the five courses required of in-career professional students who wish to earn a Certificate in Public and Nonprofit Management. This course is necessary to provide students with best practices in Public and Nonprofit Management as they relate to Human Resource Management, principally because it represents a core component of public administration, as prescribed by the National Association of Public Affairs and Administration, the program's accrediting body.

PBAD 8134 - Ethics of Administration for the In-Career Professional

JUSTIFICATION:

This is one of the five courses required of in-career professional students who wish to earn a Certificate in Public and Nonprofit Management. This course is necessary to provide students with best practices

in Public and Nonprofit Management as they relate to organizational ethics, principally because it represents a core component of public administration, as prescribed by the National Association of Public Affairs and Administration, the program's accrediting body.

PBAD 8135 - Theory and Practice of Public and Nonprofit Budgeting

JUSTIFICATION:

This is one of the five courses required of in-career professional students who wish to earn a Certificate in Public and Nonprofit Management. This course is necessary to provide students with best practices in Public and Nonprofit Management as they relate to fundamentals of budgeting principally because it represents a core component of public administration, as prescribed by the National Association of Public Affairs and Administration, the program's accrediting body

New Program:

Certificate in Public and Nonprofit Management (followed by Certificate Notification Form)

JUSTIFICATION:

The purpose of Georgia Southern University's Graduate Certificate in Public and Nonprofit Management is to allow working professionals with careers in the public or nonprofit sectors (or current graduate students in a related field of study) to expand their educational background and to enhance their knowledge in the area of professional management. The graduate certificate is designed to extend students' understanding of theory and practice in the field of public and nonprofit sector management.

Through a specialized series of courses offered online, individuals will enhance their knowledge, skills, and abilities in the following areas:

- Basic conceptions and trends regarding the theory and practice of public administration.
- Personal standards of conduct, including social justice and whistle blowing.
- Fundamental nature of human resource management.
- Application of budget theories and financial management techniques.
- Management processes, including strategic planning, crisis management, public/private partnerships, and innovation management.

Dr. Patterson suggested that the student learning outcomes should be more defined in the HIST 5030G and PBAD 8133 new courses. There was a discussion on how these outcomes should be defined. Dr. O'Neill and Dr. Davis agreed to provide more detail of learning outcomes in their course proposals.

MOTION: Dr. Flynn made a motion to approve the agenda items submitted by the College of Liberal Arts and Social Sciences, with the understanding that the detailed student learning outcomes be included in the HIST 5030G and PBAD 8133 new courses. A second was made by Dr. Delores Liston. The motion to approve the New Courses and New Program was passed.

Revised new course forms are below.

| |
|---|
| Georgia Southern University New Course Form |
|---|

Subject: HIST

Number: 5030G

Answers to all the following questions must be submitted. Limit total responses to two pages.

- 1. Need for the Course: Identify the need for the course; for example, required for the major, for certification, elective, etc.**

This course is needed to offer a graduate elective course in Selected Topics in History for students taking courses on-campus. This course will also have an undergraduate section.

- 2. Similarity with existing course: Include a clear statement indicating that a thorough examination has been made of other departments/units/colleges and discuss to what extent this course duplicates or overlaps existing course(s). If course duplication occurs, provide a justification for a similar course and a description of dialogues that have occurred with the department(s) where the duplication exists.**

No duplication exists

3. **Accreditation/Licensure approval: Does this course meet the desired requirements for the appropriate accreditation bodies? Has the proposing unit secured the appropriate approval of all on-campus governing bodies {(e.g., Teacher Education Committee (TEC))}?**

This course meets the desired requirements for the appropriate accreditation bodies. The Department of History has secured the appropriate approval of all on-campus governing bodies.

4. **Course Goals/Objectives: Clearly outline the objectives of the proposed course. Describe the student learning outcomes that are expected from this course.**

Students taking a graduate special topics course will learn material above and beyond the courses regularly offered in the History Graduate Program. The intent of the special topics course is to expose students to topics and ideas that they might not encounter in their prescribed coursework in the program.

In addition, there are four desired learning outcomes for students earning the MA in History:

1) Students will demonstrate ability to present and support extended oral arguments about important ideas and concepts of history. This implies the ability to:

- Discuss diverse time periods, peoples, situations, and societies;
- Perceive past events and issues in an appropriate historical context;
- Comprehend the interplay of change and continuity;
- Grasp the complexities of historical causation.
- Effectively communicate historical arguments to non-specialists.

2) Students will develop skills in both the mechanics and structure of writing to effectively and skillfully present historical research and argumentation. This implies the ability to:

- Write clearly and effectively about complex ideas;
- Effectively use narrative to tell important stories;
- Follow proper rules of grammar and syntax;
- Use proper Turabian (Chicago Style) forms of citation.

3) Students will construct original historical arguments based upon competent research in primary materials and present these arguments effectively in a final Thesis or Non-Thesis Project. This implies the ability to:

- Work successfully in archives and other repositories of primary materials;
- Construct convincing interpretations based upon secondary and primary sources and place those interpretations within the historiography of the subject;
- Present historical interpretations and arguments in a well-organized, readable, and logical manner;
- Complete a thesis or other project that reflects the best practices of historians.

4) Students will demonstrate orally an understanding of the historiography and theory relevant to a thesis or non-thesis project research, and an ability to place work within those historiographical and theoretical frameworks as shown by a Thesis or Non-Thesis Project. This implies the ability to;

- Explain clearly the process or framework used to reach conclusions;
- Place conclusions within a larger historical and historiographical context;
- Defend conclusions reasonably when challenged;
- Consider openly new points of view.

5. **Student Assessment Procedures (See Policy on dual-listed Undergraduate/Graduate Courses at <http://cogs.georgiasouthern.edu/download/forms/GraduateFacultyForms/Policy%20on%20Dual%20Listed%20Courses%20-%20final%20100809.pdf>)**

(a) **Briefly describe how student learning will be assessed.**

(b) **If a dual-listed course, differentiate expectations for graduate students and undergraduate students in terms of concrete measurable outcomes.**

This course will cover selected topics whose specific assessment procedures may be different each time the course is taught. Students will complete readings and written assignments. Graduate students will be given an extra assignment(s) determined by the instructor that undergraduates will not be required to do.

6. **Course Content Outline: Provide a list of topics covered by the course, methodology used to deliver material, and typical materials (e.g., texts) used within the course.**
Topics may vary and textbooks will be selected accordingly. Methodology will include lectures, reading assignments, individual or group assignments.

7. **University Resources Statement: Provide information concerning what university resources will be required for this course. Do we currently have faculty trained and available to teach this course? Does the university have equipment/technology/software/etc. required? Does the institution have the library resources needed by the instructor or by students taking this class? If insufficient resources currently exist to teach this course, please indicate what is needed and the unit's plan to garner these resources.**
Resources have been allocated. There are many faculty members throughout the university who are qualified to teach the course.

8. **Fee Explanation (when appropriate): If the proposed course requires an additional fee, explain what it is and how the fee will be used. (Implementation of a special course fee must be approved per university policy.)**
No additional fees are required.
(Please complete curriculum form which follows)

Georgia Southern University
New Course Form

To: Undergraduate Committee (Date Format: 99/99/99) UC/GC Meeting Date: 3/10/11
 Graduate Committee (Date Format: 99/99/99) Date Submitted: 2/2/11
 (Term Format: 200608) Proposed Effective Term: 201108
 CIP Code: 540101

College Code: 12 - CLASS Department Code: 1209 Department: History

1. Subject: HIST Number: 5030G

2. Full Course Title for Catalog: Selected Topics in History
 Abbreviated Course Title (max 30 characters): _____
(Only abbreviate if Full Course Title is MORE than 30 characters)

3. Will this course be cross-listed with other courses? Yes
 If Yes, please list the cross-listed courses below.

Subject: HIST Number: 5030
 Subject: _____ Number: _____
 Subject: _____ Number: _____

****A New Course Form or Course Revision Form MUST be submitted for each cross-listed course. Forms will not be accepted by the Recording Secretary unless forms for all cross-listed courses are submitted from each College****

4. Will this course be listed on any program page(s)? No
If yes, a Revised Program Form must be submitted for each program on which the course is listed. Please contact other Department(s)/College(s) to inform them of the New Course so they can submit revisions if necessary.

5. Does this new course affect another Department or College? No
If yes, please contact the affected Department(s)/College(s) to inform them of the course revision so they can submit revisions if necessary. The signature page MUST be signed by Dean of College affected.

| | Low (Must Be Completed) | High (Only for variable hours) |
|---|----------------------------|-----------------------------------|
| 6. Credit Hours: | <u>3</u> | <u>Drop-Down</u> |
| Billing Hours: | <u>3</u> | <u>Drop-Down</u> |
| Lecture/Seminar Contact Hours: | <u>3</u> | <u>Drop-Down</u> |
| Lab Contact Hours: | — | <u>Drop-Down</u> |
| Will multiple labs be offered for each lecture section? | | <u>Drop-Down</u> |
| Other Contact Hours: | — | <u>Drop-Down</u> |
| Total Contact Hours: | <u>3</u> | <u>Drop-Down</u> |
| | (Low) | (High) |
| Ratio of Contact Hours to Credit Hours: | <u>3</u> : <u>3</u> | — : — |

7. Repeatable for Credit: Yes
("Yes" can count more than once toward graduation. "No" will only count once toward graduation.)

8. Additional Fees: No If yes, amount: _____

9. Level: S2-Masters Drop-down Drop-down

10. Grade Mode: N = Normal Drop-down Drop-down Drop-down
(Default)

11. Schedule Type: A = Lecture Drop-down Drop-down Drop-down
(Default)

**Schedule Type must match Lecture, Lab, or Other Hour Type (#6) **

| | | | | | |
|-----------------|---|----------------|---------------|-----------------------|-------------------------|
| PROPOSED | COURSE PREREQUISITE(S) | | | | |
| | | Subject: _____ | Number: _____ | Concurrent: <u>No</u> | Minimum Grade: <u>D</u> |
| | And | Subject: _____ | Number: _____ | Concurrent: <u>No</u> | Minimum Grade: <u>D</u> |
| | And | Subject: _____ | Number: _____ | Concurrent: <u>No</u> | Minimum Grade: <u>D</u> |
| | And | Subject: _____ | Number: _____ | Concurrent: <u>No</u> | Minimum Grade: <u>D</u> |
| | Additional prerequisite(s): Are prerequisites to be enforced at Registration? <u>Drop-down</u> | | | | |

| | | | | | |
|-----------------|---|----------------|---------------|--|--|
| PROPOSED | COURSE CO-REQUISITE(S) | | | | |
| | | Subject: _____ | Number: _____ | | |
| | And | Subject: _____ | Number: _____ | | |
| | And | Subject: _____ | Number: _____ | | |
| | And | Subject: _____ | Number: _____ | | |
| | Additional co-requisite(s): Are co-requisites to be enforced at Registration? <u>Drop-down</u> | | | | |

| | |
|-----------------|--|
| PROPOSED | CATALOG DESCRIPTION |
| | Topics will vary with individual professor. Graduate students will be given an extra assignment (s) determined by the instructor that undergraduates will not be required to do. |

Georgia Southern University
New Course Form

Subject: PBAD

Number: 8133

Answers to all the following questions must be submitted. Limit total responses to two pages.

- 1. Need for the Course: Identify the need for the course; for example, required for the major, for certification, elective, etc.**

This is one of the five courses required of in-career professional students who wish to earn a Certificate in Public and Nonprofit Management. This course is necessary to provide students with best practices in Public and Nonprofit Management as they relate to Human Resource Management, principally because it represents a core component of public administration, as prescribed by the National Association of Public Affairs and Administration, the program's accrediting body.

- 2. Similarity with existing course: Include a clear statement indicating that a thorough examination has been made of other departments/units/colleges and discuss to what extent this course duplicates or overlaps existing course(s). If course duplication occurs, provide a justification for a similar course and a description of dialogues that have occurred with the department(s) where the duplication exists.**

The proposed course is designed as part of a new certificate program in Public and Nonprofit Management. While the proposed course exhibits similarities to PBAD 7430, the content is specifically distinct in the following ways. First, the course readings, exercises, materials, and assignments will be designed specifically for in-service career professions, and will not be as appropriate for pre-service students. For this reason, courses will focus more heavily on theory and its manifestation in organizational life than PBAD 7430, which places students in simulated environments. Second, the material for this course is specifically tailored for online delivery. Again, this method is particularly appropriate for in-service students who, unlike pre-service students, do not need to rely on in-class simulations and other classroom activities to apply principles learned in the course to administrative environments. Instead, they can utilize their own referent organization. For example, students in PBAD 7430 are taught the fundamentals of developing a job posting and position description, whereas students in the proposed course will be expected to have previous experience with these fundamentals. Third, the course content is designed to be delivered in a period of eight weeks as opposed to a traditional sixteen week semester. Moreover, from a practical perspective, having a separate course guarantees that students can differentiate between the two classes; underscoring the important differences between the courses and avoiding confusion regarding their course eligibility. Additionally, because this certificate program will be a part of the program's overall accreditation, maintaining distinct courses will enhance the ease with which both the certificate program and the existing MPA program can be evaluated independently. Thus, due to the work experience of these exclusively in-service students, the compressed time frame of the course, course materials, accreditation concerns, and other practical concerns, the program faculty believe a new and distinct course that is exclusive to the MPA Executive Certificate Program is warranted.

- 3. Accreditation/Licensure approval: Does this course meet the desired requirements for the appropriate accreditation bodies? Has the proposing unit secured the appropriate approval of all on-campus governing bodies (e.g., Teacher Education Committee (TEC))?**

Yes, the proposed course will be taught in accordance with the National Association of Schools of Public Affairs and Administration (NASPAA), the accrediting body for the MPA Program.

- 4. Course Goals/Objectives: Clearly outline the objectives of the proposed course. Describe the student learning outcomes that are expected from this course.**

This course will cover topics including: the origins of public sector personnel, merit selection, models of compensation, job analysis, job design, job evaluation, employee selection, employee motivation, performance appraisal, labor relations, and training. Intermingled with these foci will be some consideration of administrative ethics, affirmative action, comparable worth, and sexual harassment.

- 1) Students can identify the role and functions of the human resource manager in a public and nonprofit organizational setting.
- 2) Through an appreciation of the historical and political evolution of public human resource management, students can apply important personnel reforms within an organizational setting.
- 3) Students can effectively manage the major components of a personnel system within an organizational setting.

- 4) Students can explain the major functions of human resource planning, position classification, and employee selection and compensation systems.
- 5) Students can identify both theory and practice as it pertains to effectively motivating and managing personnel.
- 6) Students can describe the major components of affirmative action, prohibited practices, diversity, and equal employment opportunity (EEO) in the context of human resource management.
- 7) Students can describe as well as apply to an organizational setting existing jurisprudence in the areas of sexual harassment and employee disability.

5. Student Assessment Procedures (See Policy on dual-listed Undergraduate/Graduate Courses at <http://cogs.georgiasouthern.edu/download/forms/GraduateFacultyForms/Policy%20on%20Dual%20Listed%20Courses%20-%20final%20100809.pdf>)

- (a) Briefly describe how student learning will be assessed.
- (b) If a dual-listed course, differentiate expectations for graduate students and undergraduate students in terms of concrete measurable outcomes.

This proposed course, as with all courses being proposed for this certificate program, will be delivered through fully online instruction. Components of that online assessment may include writing assignments, discussion postings, exams, and field exercises requiring written reports. The courses will be designed using templates and best practices provided by the Center for Online Learning at Georgia Southern University: <http://academics.georgiasouthern.edu/col/id/>.

6. Course Content Outline: Provide a list of topics covered by the course, methodology used to deliver material, and typical materials (e.g., texts) used within the course.

Typical materials for the course will include a combination of textbooks and journal articles, chosen to ensure students can apply the appropriate theory to their own practical experiences. The course content will be delivered through online instruction and will include the following topics:

- 1) Explore the role and functions of the human resource manager.
- 2) Examine the historical and political evolution of public human resource management.
- 3) Explain the relationship of human resource planning, classification, selection and pay systems.
- 4) Describe affirmative action, prohibited practices, diversity, and EEO in the context of public human resource management.
- 5) Discuss the importance of ethics in public human resource management.
- 6) Apply theory and research on human resource management to the day-to-day working of real organization.

7. University Resources Statement: Provide information concerning what university resources will be required for this course. Do we currently have faculty trained and available to teach this course? Does the university have equipment/technology/software/etc. required? Does the institution have the library resources needed by the instructor or by students taking this class? If insufficient resources currently exist to teach this course, please indicate what is needed and the unit's plan to garner these resources.

Both the MPA Program and the University have the necessary resources for this course; the technology is available for the course to be delivered online.

8. Fee Explanation (when appropriate): If the proposed course requires an additional fee, explain what it is and how the fee will be used. (Implementation of a special course fee must be approved per university policy.)

N/A

(Please complete curriculum form which follows)

Georgia Southern University
New Course Form

To: Undergraduate Committee (Date Format: 99/99/99) UC/GC Meeting Date: 3/10/11
 Graduate Committee (Date Format: 99/99/99) Date Submitted: 12/15/10
(Term Format: 200608) Proposed Effective Term: 201208
CIP Code: 520206
College Code: 12 - CLASS Department Code: 1214 Department: POLITICAL SCIENCE

1. Subject: PBAD Number: 8133
 2. Full Course Title for Catalog: Human Resource Management for the In-Career Professional
Abbreviated Course Title (max 30 characters): HR Management
(Only abbreviate if Full Course Title is MORE than 30 characters)
 3. Will this course be cross-listed with other courses? No
If Yes, please list the cross-listed courses below.
Subject: _____ Number: _____
Subject: _____ Number: _____
Subject: _____ Number: _____
****A New Course Form or Course Revision Form MUST be submitted for each cross-listed course. Forms will not be accepted by the Recording Secretary unless forms for all cross-listed courses are submitted from each College****
 4. Will this course be listed on any program page(s)? Yes
If yes, a Revised Program Form must be submitted for each program on which the course is listed. Please contact other Department(s)/College(s) to inform them of the New Course so they can submit revisions if necessary.
 5. Does this new course affect another Department or College? No
If yes, please contact the affected Department(s)/College(s) to inform them of the course revision so they can submit revisions if necessary. The signature page MUST be signed by Dean of College affected.
- | | Low
(Must Be Completed) | High
(Only for variable hours) |
|---|----------------------------|-----------------------------------|
| 6. Credit Hours: | <u>3</u> | <u>Drop-Down</u> |
| Billing Hours: | <u>3</u> | <u>Drop-Down</u> |
| Lecture/Seminar Contact Hours: | <u>3</u> | <u>Drop-Down</u> |
| Lab Contact Hours: | — | <u>Drop-Down</u> |
| Will multiple labs be offered for each lecture section? | | <u>Drop-Down</u> |
| Other Contact Hours: | — | <u>Drop-Down</u> |
| Total Contact Hours: | <u>3</u> | <u>Drop-Down</u> |
| | (Low) | (High) |
| Ratio of Contact Hours to Credit Hours: | <u>3</u> : <u>3</u> | — : — |
7. Repeatable for Credit: No
("Yes" can count more than once toward graduation. "No" will only count once toward graduation.)
 8. Additional Fees: No If yes, amount: _____
 9. Level: S2-Masters Drop-down Drop-down
 10. Grade Mode: N = Normal Drop-down Drop-down Drop-down
(Default)
 11. Schedule Type: M = Asynchronous Instruction Drop-down Drop-down Drop-down
(Default)
*Schedule Type must match Lecture, Lab, or Other Hour Type (#6) *

| | | | | | | | | |
|-----------------|---|-------------|---------|-------------|-------------|-----------|----------------|----------|
| PROPOSED | COURSE PREREQUISITE(S) | | | | | | | |
| | Subject: | <u>PBAD</u> | Number: | <u>8131</u> | Concurrent: | <u>No</u> | Minimum Grade: | <u>B</u> |
| | And Subject: | _____ | Number: | _____ | Concurrent: | <u>No</u> | Minimum Grade: | <u>D</u> |
| | And Subject: | _____ | Number: | _____ | Concurrent: | <u>No</u> | Minimum Grade: | <u>D</u> |
| | And Subject: | _____ | Number: | _____ | Concurrent: | <u>No</u> | Minimum Grade: | <u>D</u> |
| | Additional prerequisite(s): Are prerequisites to be enforced at Registration? <u>Yes</u> | | | | | | | |

| | | | | | |
|-----------------|---|-------|---------|-------|--|
| PROPOSED | COURSE CO-REQUISITE(S) | | | | |
| | Subject: | _____ | Number: | _____ | |
| | And Subject: | _____ | Number: | _____ | |
| | And Subject: | _____ | Number: | _____ | |
| | And Subject: | _____ | Number: | _____ | |
| | Additional co-requisite(s): Are co-requisites to be enforced at Registration? <u>Drop-down</u> | | | | |

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|-----------------|--|
| PROPOSED | CATALOG DESCRIPTION |
| | This course is a required component of the Certificate in Public and Nonprofit Management. The course provides in-career professionals with an examination of the functions of human resource management and the challenges it faces in American government and society. |

C. College of Education

Dr. Yasar Bodur presented the following agenda item for the College of Education.

New/Revised Program:

M.Ed. in Teaching and Learning

JUSTIFICATION:

Add ESED 5234G to the M.Ed. in Teaching and Learning, Concentrations 1, 2, and 4, in order to meet the NCATE Standard 4 on diversity

Add the word "current" for test scores required for admission (#4).

Clarifies the "Program Exit Experience" for Concentration Five, Instructional Improvement.

MOTION: Dr. Ednilson Bernardes made a motion to approve the agenda item submitted by the College of Education. A second was made by Dr. McGibony. The motion to approve the New/Revised Program was passed.

D. College of Business Administration

Dr. Diebolt presented the following information item for the College of Business Administration.

Information Item:

Full-time/Part-time Enrollment Classification for MS-Applied Economics



JACK N. AVERITT COLLEGE OF GRADUATE STUDIES
POST OFFICE BOX 8008
STATESBORO, GA 30460-8008
PHONE (912) 478-2647 • FAX (912) 478-0605
WEB <http://cogs.georgiasouthern.edu>

April 18, 2011

To: Godfrey Gibbison
From: J. R. Diebolt
Subject: Full-time/Part-time Enrollment Classification for Ms-Applied Economics

This is to approve the proposed change in full-time/part-time enrollment classification. Based upon the approval, six (6) credit hours will be classified as full-time enrollment and three (3) credit hours will be classified as half-time enrollment for fall or spring semesters. Three (3) credits hours will be classified as full-time enrollment for summer.

This approval will be provided as information to the upcoming Graduate Committee. The Financial Aid Office Director will be informed of this decision for implementation at the earliest possible time for those students seeking financial aid.

There is no reason that you would have to be present to discuss this at the Graduate Committee meeting unless you wished to be present.

Cc: Ron Shiffler, Dean
Bill Wells, Associate Dean
Connie Murphey, Director, Financial Aid
Donna Fisher, Program Director



**COLLEGE OF BUSINESS
ADMINISTRATION**

School of Economic Development
Box 8152 Statesboro, GA. 30460

Phone: 912-478-5216 Fax: 912-478-0710 E-Mail: ggibbiso@georgiasouthern.edu

MEMORANDUM

DATE: March 7, 2011
FROM: Godfrey Gibbison
TO: Charles Patterson
RE: Full-time & Part-time Enrollment Status for MS-Applied Economics

The MS in Applied Economics was originally proposed as a traditional on-campus graduate degree program with a full-time course load of 9 credit hours. In 2008 the Board of Regents granted permission for the program to be delivered as a fully online program. The program is currently being delivered as a fully online program. Once the program started it became clear that students who are attracted to the program in this format are working adults (average age 35 years) with full-time employment. As a result we encouraged students to register for no more than 6 credit hours as a full-time course load, and 3 credit hours as a part-time course load, in order to increase the chance that students will be successful. In addition, 3 credit hours is considered full-time enrollment for the summer semester. This was a response to the difficulties students experienced in the first summer the program was offered. The 9-week (long) summer semester did not give students sufficient time to succeed in 6 credit hours.

This model has worked well for the program, the faculty and students. Therefore, to ensure the continued success of the program, I would like to petition the College of Graduate Studies to reduce the MS Applied Economics Program to 6 credit hours for full-time enrollment and 3 credit hours for part-time enrollment.

There was significant discussion on the full-time/part-time enrollment policies for individual programs. Concern was raised by some of the committee members of what the impact would be by having different enrollment policies.

Mr. Wayne Smith stated the Registrar's Office needs to be notified of these policy changes because they affect financial aid and loans. Dr. Patterson stated official communication will be sent to the Registrar's Office.

No action was needed for the Information Item.

V. OLD BUSINESS

A. Scholarships Sub-Committee – Dr. Patterson thanked the Sub-Committee for reviewing the candidates for the G. Lane and Christine S. Van Tassell Graduate Scholarship and the Katie and Tanner Miller/Van Tassell Family Graduate Scholarship. He stated the scholarships have been awarded and will be recognized during Honor's Day.

VI. ANNOUNCEMENTS

Dr. Patterson stated eight additional scholarships have been funded by the Jack N. and Addie D. Averitt Foundation in the amount of \$1000 each. These scholarships will be available to students in the History and Social Sciences graduate programs. Dr. Patterson stated he gave the College of Liberal Arts and Social Sciences' Dean the discretion of using these scholarships to recruit new students. Dr. Christine Ludowise stated a call was sent out to Program Directors for them to submit nominations and letters of support. Dr. Ludowise stated a committee will review candidates and the recipients will be announced. Dr. Patterson said this request will be sent out annually through the College of Graduate Studies.

VII. ADJOURNMENT

There being no further business, the meeting was adjourned on March 10, 2011 at 8:47 AM.

Respectfully submitted,

Audie Graham, Recording Secretary

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|---|
| Minutes were approved March 28, 2011 by electronic vote of Committee Members |
|---|