GRADUATE COUNCIL CURRICULUM REPORT #1, OCTOBER 2015

I. 400-level courses (undergraduate courses for graduate credit)

Changes

College of Arts and Sciences
Computer Science

CSC 406: Computer Graphics
Change in prerequisites to "CSC 212 and either MTH 215 or MTH 362, and student must be admitted to a degree-granting college."

CSC 436: Database Management Systems
Change: course is being offered online.

Mathematics

MTH 441: Introduction to Partial Differential Equations
Change in prerequisites to "MTH 243 and (MTH 244 or MTH 362)."

College of Environmental and Life Sciences
Cell and Molecular Biology

BCH 412: Biochemistry Laboratory
Change in title to "Advanced Biochemistry Laboratory I."
Change in description to "LAB: (3 crs.) An introduction to laboratory biochemical techniques and methods for the purification and analysis of biological macromolecules, in particular, DNA and protein."
Change in prerequisites to "BCH 311, and BCH 312 or MIC 211; or by permission of instructor."

New Courses:

Graduate School of Oceanography
Oceanography

OCG 404 (NRS 404, GEO 404): Environmental Data Acquisition and Analysis
Introduction to instrument prototyping and measurements in environmental science. Hands-on work with data collection: programming microcontrollers, interfacing hardware and software, wireless sensor networks. Data analysis in Python. Pre: MTH 131 or MTH 141; or permission of the instructor.

I. 500/600-level courses

Changes:

College of Arts and Sciences
English

ENG 595: Master's Project
Change in number of credits from 3 to 1-6.

Physics

PHY 555: Radiation Oncology
Change in title to "Radiation Oncology Clinical Practicum."
Change in description to "Provide the student a base knowledge and overview of medical physics in the environment of a modern radiation oncology clinical practice, opportunities for practical clinical training as a Medical Physicist, and a familiarity with the roles and practices of the clinical team tasked with the treatment of cancer patients. "
Change in prerequisite to "PHY 550 and PHY 552 or permission of instructor."
Change in course credits from 3 to 4 (Lec.3 to Lec. 3, Practicum 1)

PHY 560: Experimental Methods in Condensed Matter Science
Change in title to "Experimental Methods in Modern Physics."
Change in description to "Overview of the main principles that underlie selected experimental methods used in physics, engineering, chemistry, biology, and medicine."
Change in prerequisite to "MTH 244 or permission of instructor."

College of Human Science and Services
School of Education

EDP 665: Social Justice in Higher Education
Change in course code to "EDC 665."
Change in prerequisites to "Admission to Joint URI/RIC PhD in Education Program; or Graduate status with permission of instructor."

New Courses

College of Arts and Sciences
Physics

PHY 585: Advanced Clinical Medical Imaging
This course covers advanced topics in diagnostic and clinical imaging modalities with an emphasis on clinically relevant modalities. Modalities include radiography, fluoroscopy, computed tomography, nuclear imaging, mammography, magnetic resonance imaging, ultrasound and positron emission tomography. (Lec. 3, Practicum 1) Pre: ELE 564 or permission of instructor.

College of Environmental and Life Sciences
Cell and Molecular Biology

CMB 560X: Experimental Approaches in Molecular Biology
This course addresses modern approaches to studying problems in advanced biochemistry, molecular and cell biology, including experimental design, genetics-based tools, fluorescence-based methodology, functional interactions, high-resolution microscopy and single molecule studies. (Lec. 3) Pre: Graduate standing in BES or permission of instructor.

Geosciences

GEO 535 (NRS 535, CVE 535): Geospatial Watershed Modeling
Tools to simulate the water quantity and quality of a complex watershed; development of models for examining the water quantity and quality issues that are associated with watershed management. Pre: NRS 461 or Geo 483 or CVE 475 or equivalent, or graduate standing, or permission of instructor.

Marine Affairs

MAF 530 (HIS 530): Marine Environmental History
Provides background on the history of human interactions with the marine environment with insight into historical methodologies. (Lec. 3) Pre: Graduate standing or permission of instructor.

Additional Curricular Matters

College of Arts and Sciences
Communication Studies
Notice of Change for MA in Communication Studies

A. PROGRAM INFORMATION

1. Name of institution
University of Rhode Island

2. Name of department, division, school or college
Department: Communication Studies
College: A&S

3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.
Initiation date: Fall 2015
First degree date: N/A

4. Intended location of the program
N/A

5. Summary description of proposed program (not to exceed 2 pages).

That the following be added to the URI Catalog language directly after the first full paragraph in the catalogue description on "specializations" for the MA in Communication Studies on p. 138 of the 2014-2015 Catalog:

Beyond selecting a program of emphasis from one of the above identified content areas, students may choose an additional focus in the area of pedagogy. Students must apply to the pedagogy focus and those selected are required to take three semesters (3 credits total) of COM 503 (Graduate Practicum: Teaching Communication Seminar) and have concurrent teaching experience of at least one section in COM 100, with up to two sections per semester through the Communication Studies Department

6. Signature of the President

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David M. Dooley

Physics

A. PROGRAM INFORMATION

1. Name of institution
University of Rhode Island

2. Name of department, division, school or college
Department: Physics
College: A&S

3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.
Initiation date: Fall 2016
First degree date: Spring 2018

4. Intended location of the program
URI, Rhode Island Hospital

5. Summary description of proposed program (not to exceed 2 pages).

Medical Physics Track: Five-Year Program leading to a B.S. in Physics and an M.S. in Medical Physics.

The field of medicine is facing a significant shortage of well-trained and qualified clinical medical physicists, due to the increasing use of complex technology in the field of radiation oncology and medical imaging. Consequently there is a growing demand for the training of professionals in medical physics. Only specially created programs can accomplish this mission, since among other things medical physics requires a multidisciplinary effort.
This degree program provides students with rigorous training in essential undergraduate and graduate physics courses, as well as in medical physics courses. Students are introduced to both research and clinical aspects of modern medical physics through the Rhode Island Hospital state-of-the-art medical imaging and therapy facilities. The program is based on the B.S. and M.S. programs in physics with the introduction of additional courses in photo medicine, nanotechnology, radiation physics and dosimetry, radiation oncology, radio-biology, and a clinical practicum. These courses are taught by the URI Physics Department, the Rhode Island Hospital-Brown University Medical School Faculty, and the staff at the RI Nuclear Science Center at the Bay Campus.

Matriculation in this program requires that the student apply and be accepted; it is not automatic. It is possible that a student will enter the program having taken some of the courses

but not all. It is mandatory that the student take all of the courses (or show credit in them) in order to graduate. The schedule outlined below demonstrates that it is possible to get both degrees in five years. Where we have written two courses separated by an "or" (e.g., PHY 322 or 420) the student is to take whichever course is offered that semester. The student must have credit in both courses, however, at the end of the curriculum.)

Freshman Year First semester:
BIO 121 + lab; MTH 141; PHY 203H, 273H; URI 101; two 3-credit Basic Liberal Studies course (total 19 credits).

Second semester:
BIO 242, 244; CHM 101, 102; MTH 142; PHY 204H, 274H; one 3-credit Basic Liberal Studies course (total 19 credits).

Sophomore Year First semester:
CSC 211; MTH 243; PHY 205H, 275H, 210; 6 credits of Basic Liberal Studies courses (total 18 credits).

Second semester:
MTH 244; PHY 306, 402, 410; 9 credits of Basic Liberal Studies courses (total 19 credits).

Junior Year First semester:
MTH 215; PHY 322 or 420, 381, 451; SOC 224; 3 credits of Basic Liberal Studies courses (total 18 credits).

(In the beginning of the sixth semester, the student can begin the application process to be admitted to the graduate program. This is necessary only if the student is planning on getting both the master's and bachelor's degrees after five years. The application will be evaluated by a committee of faculty formed for that purpose, and it will be the sole determiner of who goes on in that year. At that time it will still be possible to get a simple B.S. in physics in the standard four years.)

Second semester:
PHY 331, 382, 455, 570; 6 credits of Basic Liberal Studies courses (total 18 credits).

Senior Year First semester:
ELE 564, 565; PHY 322 or 420, 540, 550; STA 411 (total 16 credits).

Second semester:
PHY 545 or 560, 552, 565 or 585, 591 (total 14 or 15 credits).

Fifth Year First semester:
PHY 401, 483, 555; PHY510 or CSC 593 (total 11 credits).

Fifth Year Second semester:
PHY 484, 545 or 560, 565 or 585 (total 10 or 9 credits).

Proposed URI catalog language for graduate program

Master of Science in Medical Physics
Admission requirements: GRE and advanced test recommended; bachelor's degree with major in physics or related discipline.
Program requirements: PHY 540, 545, 550, 552, 555, 560, 565, 585, 591; ELE 564, 565 are required courses. The following introductory courses or their equivalents, which could be taken at URI or other places, are required but not as program credit: BIO 121 + lab, 242 + lab; PHY 210; SOC 224. The student will complete 30 credits, of which no more than six may be below the 500 level. This is a non-thesis program which requires that at least one course will require a substantial paper involving significant independent study, and the student must pass a final written and oral examination.

Additional changes to the Catalog:

Existing:
PHY 550: Introduction to Radiation Physics and Dosimentry

Proposed:
PHY 550: Introduction to Radiation Physics and Dosimetry

Existing:
PHY 555: "Provide the student a base knowledge and overview of a medical physics in the environment of a modern radiation oncology practice, …."

Proposed:
PHY555: "Provide the student a base knowledge and overview of medical physics in the environment of a modern radiation oncology clinical practice,…."

6. Signature of the President

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David M. Dooley

Graduate School of Oceanography
GSO Master of Oceanography (MO) degree

Notice of Change of Requirements for GSO Masters of Oceanography (MO) Degree
Date: September 10, 2015

A. PROGRAM INFORMATION

1. Name of institution
University of Rhode Island

2. Name of department, division, school or college
Department: Not applicable; College: Graduate School of Oceanography

3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.
Initiation date: September 2016

First degree date: Continuing students will have the choice to follow the requirements of the program at the time they enrolled or the new requirements proposed in this form. Thus the potential date of the first degree will be immediately following approval of this proposal.

4. Intended location of the program
Graduate School of Oceanography

5. Summary description of proposed program (not to exceed 2 pages). If applicable, please include the existing URI catalog language and proposed catalog language changes that relate to your request.
We propose to modify the requirements for the existing Master's of Oceanography (MO), to better develop professional training programs in specific areas. Our goal is to develop specific tracks that attract and prepare students to find employment or enhance their careers with private companies, governmental and non-governmental organizations. We will also maintain a General Oceanography track. The existing program does not have tracks.

The proposed MO tracks are:

- Marine Fisheries Management
- Coastal Ocean Management
- Ocean Technology and Data
- General Oceanography

A faculty committee developed these tracks based on consideration of potential careers and existing relevant classes. These changes were approved by a unanimous vote of the GSO faculty (Sept. 9, 2015) and were discussed with the chairs and directors of potentially impacted programs (OCE, MESM, FAVS, MAF) as well as the Deans of all the colleges at the Deans' retreat.

No change in the total number of credits (30) is requested. The principal proposed changes from the existing program are,

1. Reduction of the number of introductory disciplinary oceanography classes from four to two or three (depending on track), selected from a group of five (see Appendix);
2. Require 6 credits instead of 3 credits of Individual Study (OCG 591/592); and
3. Change 3 credit general requirement in "Scientific Tools" and 6 credits in electives to requirements specific to each track.

The large number of required general courses in fields not directly related to students' interests and professional goals has been a deterrent to recruitment into the existing program. The proposed change allows for the development of coherent tracks with specific, educational goals that are clear to students.

A general description and specific requirements for each track are given in the Appendix.

Existing Catalog Language:
Program requirements (total of 30 credits): written comprehensive examination; OCG 695 (two credits); major paper (three credits); OCG 501, 521, 540, 561; six credits in oceanography or other science departments; three credits in policy, management, economics, or a related field; three credits in statistics, data analysis, or scientific writing.

Proposed Catalog Language:
Program requirements (total of 30 credits, minimum of 15 credits of OCG classes): written comprehensive examination; OCG 695 (two credits maximum); major paper or equivalent product (OCG 591/592, six credits); courses required by track. For Marine Fisheries Management track: OCG 561, 670, AFS 531; one from each of the following groups: A.) OCG 501, 521, 517, 540; B.) OCG 506, 673, NRS 410, 527, STA 550, EEC 543; C.) MAF 523, 526, 651, BIO 563, OCG 673, NRS 527. For Ocean Technology and Data track: at least two from OCG 540, 521, 517 or 501, 561; at least four classes from the following: OCE 467, 512, 514, 516, 522, 550, 562, 581, 582, 583; ELE 457, 485, 503, 504, 506, 509, 583; CSF 430, 432, 534, 580; OCG 404, 506, 517, 535, 555, 665; NRS 509, 516; GEO 577; MAF 461, 521, 564. For Coastal Ocean Management track: at least two from OCG 501, 521, 517 or 540, 561; at least four classes from one or more of the following groups: OCG 512, 513, 514, 517, 522, 614,

506, 555, 519, 535, 580; NRS 423, 501, 555, 585, 509, 516; GEO 511, 515, 577; OCE 581, 582, 583; MAF 461, 515, 514, 521, 564. For General Oceanography track: three from the following group: OCG 501 or 517, 521, 540, 561; 3 credits in statistics, data analysis, or scientific writing; 6 credits in oceanography or other science departments; 3 credits in policy, management, economics, or related field.

6. Signature of the President

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David M. Dooley