UNIVERSITY OF RHODE ISLAND
THE GRADUATE SCHOOL

To: Members of the 2014-2015 Graduate Council
From: Nasser Zawia, Dean
       Keith Killingbeck, Associate Dean
Date: 24 March 2015
RE: Agenda for Meeting Number 489 of the Graduate Council to be held on Monday 30 March 2015 at 2:00 p.m. in the rectangular Board Room of the Alumni Center.

I. Call to order
II. Approval of Minutes of Meeting Number 488, 23 February 2015
III. Announcements
   A. Recent additions to the Graduate Faculty

   MICHAEL DUNN       PHARMACY       2/25/2015
   DEBORAH CLICKNER    NURSING       2/27/2015
   CHARLES ALEXANDRE   NURSING       2/27/2015
   DEBORAH PEARLMAN    PSYCHOLOGY    2/27/2015
   JUDY MURPHY         NURSING       3/6/2015
   BRYNA WORTMAN       THEATRE        3/12/2015
   LINDA LAGASSE       NURSING       3/23/2015
   HOLLIE SMITH        COMMUNICATION STUDIES 3/25/2015

   B. Workshop on Policies and Guidelines for International graduate students – Thursday 2 April 2015, URI Multicultural Center, 3:00 p.m.

   C. Cultural Competence Workshop

   D. Speaker for the 2015 Graduate Commencement -- update

   E. Development of a task force to tackle the issue of assistantship distribution -- update.

   F. Graduate Faculty Status – update on the proposal to change the University Manual to match the Graduate School Manual.

IV. Committees
   A. Curriculum Committee (full proposals can be found as an attachment to the message announcing the agenda for the March meeting of the Graduate Council, and in your Sakai site under ‘Grad Curricular Proposals Resources’

   Changes:

   College of Engineering
   Civil and Environmental Engineering
CVE 552 Structural Timber Design
Change in prerequisite to “CVE 354 or permission of instructor.”

CVE 563 Prestressed Concrete
Change in prerequisite to “CVE 465 or permission of instructor.”

CVE 564 Advanced Reinforced Concrete
Change in prerequisite to “CVE 465 or permission of instructor.”

CVE 565 Structural Dynamics
Change in prerequisite to “CVE 453 or permission of instructor.”

CVE 582 (OCE 582) Seabed Geotechnics
Change in title to “Marine Geotechnics.”
Change in description to “Geotechnical engineering principles as applied to marine problems. Site survey and in-situ testing, soil properties, shallow foundations and deadweight anchors, piles and pile anchors, direct and drag embedment anchors, scour.”

CVE 651 Design of Highway Bridges
Change in course number to “CVE 566.”
Change in prerequisite to “CVE 453, 460, and 465 or permission of instructor.”

College of Arts and Sciences
Physics

PHY 510 Mathematical Methods of Physics I
Change in description to “Topics designed to include applications in physics: linear algebra; determinants, matrices, eigenvalues; properties of finite and infinite bases; basics of numerical linear algebra; probability and statistics; Monte Carlo methods.”

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 a medical physics in the environment of a modern radiation oncology clinic 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.”

PHY 560 Experimental Methods in Condensed Matter Science
Change in title to “Experimental Methods.”
Change in description to “Overview of the main principles of experimental methods used in physics, engineering, chemistry, biology, and medicine.”
Change in prerequisite to “MTH 244 or permission of instructor.”
PHY 565 Photomedicine  
Change in title to “Radiation Detection, Instrumentation and Data Analysis.”  
Change in description to “Provide the student a base knowledge of radiation detection as it pertains to radiation therapy, diagnostic imaging, and nuclear medicine.”  
Change in prerequisite to “Permission of instructor.”

PHY 625 Statistical Physics II  
Change in description to “Statistical physics of soft condensed matter: colloids, polymers, gels, liquid crystals, amphiphiles, biological matter. Interactions, conformations, hierarchical structures, phase transitions, aggregation, self-assembly, kinetics, transport.”  
Change in prerequisite to “PHY 525.”

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 the Environment and Life Sciences
Nutrition and Food Science

NFS 559X Standards for Dietetics Research and Practice  
Review of standards governing dietetics research and practice including human subjects, HIPAA, and the Code of Ethics. (Online 1) Pre: Enrolled in the MS in Dietetics Program

Natural Resources Science

NRS 543 Public Engagement with Science  
Theoretical and practical aspects of public engagement with science, policy, and management, with an emphasis on communication. (Lec. 3) Pre: Graduate Standing or permission of instructor.

College of Pharmacy
Biomedical and Pharmaceutical Sciences

BPS 557 Modern Spectroscopic Techniques in Drug Discovery  
Introduces spectroscopic techniques needed to understand data from contemporary biomedical science research, especially macromolecular NMR spectroscopy. Focused
Additional Curricular Matters

College of Engineering
Electrical Engineering

Notice of Change for Electrical Engineering Graduate Program
Date: February 5, 2015

A. PROGRAM INFORMATION

1. Name of institution University of Rhode Island

2. Name of department, division, school or college
   Department: Electrical, Computer and Biomedical Engineering
   College: College of Engineering

3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.
   Initiation date: Fall 2015 semester
   First degree date: not applicable

4. Intended location of the program
   Current location (Kelley Hall)

5. Summary description of proposed program (not to exceed 2 pages). see attached
   If applicable, please include the existing URI catalog language and proposed catalog language changes that relate to your request.

6. Signature of the President
   ________________________________  David M. Dooley
Summary Description: The proposed changes are to the existing language in the University Catalog that describes the Electrical Engineering (ELE) Graduate Program. The two proposed changes will clarify the ELE Department’s policies and requirements for the Master of Science degree in Electrical Engineering; these changes do not alter the existing requirements for the MS degree.

1. The “Program requirements” paragraph under the “Master of Science” section includes the following language:

“One credit of the departmental seminar (ELE 601 and/or 602) is required of all students. Up to two credits of seminar may be used toward the 30-credit master’s requirement."

Under this proposal, this language will be changed to:

“One credit of the departmental seminar (ELE 601 or ELE 602) is required of all students. Up to two credits of seminar (one each of ELE 601 and ELE 602) may be used toward the 30-credit master’s requirement."

This change clarifies how the departmental seminar courses may be used to satisfy the Program requirements.

2. The “Program requirements” paragraph under the “Master of Science” section includes the following statement:

“For the thesis option, the thesis counts as six to nine credits."

Under this proposal, this statement will be changed to:

“For the thesis option, the thesis counts as six to nine credits, but more than six credits requires prior written justification and approval by the student’s thesis committee, and the Graduate Program Director or Department Chair."

A typical ELE Masters thesis currently corresponds to six credit hours. If the research is more involved, then it is justified to allow additional (up to three) credits. This language change clarifies when and how more than six credits are allowed for thesis research.

College of Arts and Sciences
Physics

Notice of Change for Physics Programs
Date: 01/28/2015
A. PROGRAM INFORMATION

1. Name of institution
University of Rhode Island

2. Name of department, division, school or college
Department: Physics
College: Arts and Sciences
3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.
Initiation date: 01/09/2015
First degree date: NA

4. Intended location of the program
Physics Department, URI

5. Summary description of proposed program (not to exceed 2 pages).
On January 21, 2015 the faculty of the Physics Department voted to create a second track that would lead toward the Ph.D. in Physics and to change PHY625 course. Over the past few years, it was found that the curriculum needs of the students pursuing more applied research differed from those who were pursuing more traditional physics research. Rather than approving modifications to the programs of study for those students pursuing applied physics, the department determined it would be better to establish an “applied physics” track toward the Ph.D. Both tracks have identical credit requirements and are deemed to be of equal difficulty.

If applicable, please include the existing URI catalog language and proposed catalog language changes that relate to your request.
See attached catalog language information

6. Signature of the President
___________________________________________
David M. Dooley

Track Proposal for Ph.D. in Physics

Core courses:
PHY510, PHY520, PHY525, PHY530, PHY570, PHY580.

Physics track:
In addition to the core courses, students in the Physics track will be required to take: PHY610, PHY630, PHY670, PHY680, and either one of (PHY625, PHY 626).

Applied Physics Track:
In addition to the core courses, students in the Applied Physics track will be required to take: PHY540, PHY 560, one of (PHY625, PHY 626), one of (PHY630, PHY670), and one of (PHY610, PHY680).

The choice of tracks and courses should be done with adviser’s approval. No replacements by courses from outside the Department are allowed.

Existing URI catalog language

Physics
M.S., Ph.D.
401.874.2633
Faculty: Associate Professor Andreev, chair. Professors Heskett, Kahn, Kaufman, Malik, Meyerovich, Muller, Nightingale, and Steyerl; Associate Professors Andreev and Reshetnyak; Adjunct Professor McCorkle; Adjunct Associate Professors Bozyan, Karbach, and Ruffa; Professors Emeriti Desjardins, Hartt, Letcher, Nunes, and Pickart.

Specializations
Astronomy: low-frequency radio sources and optical counterparts.
Biological physics: membrane biophysics, molecular motors, fluorescence spectroscopy and microscopy.
Computational physics: classical and quantum Monte Carlo methods, large-scale parallel computations, optimization, many-body interactions and invariants, finite-size scaling, recursion method.
**Experimental condensed matter physics:** electronic and structural properties of surfaces and thin films studied via low-energy electron diffraction, Auger electron spectroscopy, X-ray standing wave and photoemission techniques (in-house and at the Brookhaven National Laboratory synchrotron facility); surfaces and interfaces in thin films and multilayers studied via X-ray and neutron reflection and diffraction (in-house and at the National Institute of Standards and Technology reactor facility); epitaxial growth, magnetism in nanoparticles and on surfaces via neutron and X-ray scattering; characterization of electromigration by electrical and optical techniques, Rutherford backscattering, and scanning tunneling microscopy.

**Experimental neutron physics:** ultracold neutrons used to study beta-decay, neutron optics (at the Institut Laue-Langevin, Grenoble).

**Medical physics and nanotechnology:** drug delivery, whole-body fluorescence imaging, cancer nanotechnology.

**Nonlinear dynamics and chaos:** turbulence, Hamiltonian chaos, integrability in quantum mechanics.

**Theoretical condensed matter physics:** surface physics, phase transitions and critical phenomena, critical dynamics, superconductivity, quantum transport, nano-scale films and clusters, disordered systems, low-dimensional systems, spin dynamics, Bethe ansatz.

**Theoretical low-temperature physics:** Fermi and Bose quantum liquids, solids and gases; spin-polarized quantum systems.

**Master of Science**

*Admission requirements:* GRE and advanced test recommended; bachelor’s degree with major in physics preferred.

*Program requirements:* PHY 510, 520, 525, 530, 560, 570, and 580 are required of all students. For both the thesis and the nontechnical options, the student will complete 30 credits, of which no more than six may be below the 500 level. For the nontechnical option, at least one course will require a substantial paper involving significant independent study, and the student must pass a final written and oral examination.

**Doctor of Philosophy**

*Admission requirements:* GRE and advanced test recommended; bachelor’s degree with major in physics preferred. Master’s degree is not required.

*Program requirements:* PHY 510, 520, 525, 530, 570, 580, 610, 625 (or 626), 630, 670, and 680. There is no formal departmental language requirement, although the candidate’s committee may require demonstration of language proficiency. Successful completion of a qualifying examination is required of all students. This examination is normally expected to be taken in the summer preceding the second year of studies.

**Five-Year Program in Medical Physics**
The Physics Departments also offers a five-year program of studies leading to a B.S. in physics and a M.S. in medical physics. The M.S. degree part of the program requires that the student take PHY 540, 545, 550, 552, 555, 560, 565, 691, 610; SOC 224; ELE 562 + lab, ELE 564 + lab. The rest of the courses are those indicated on the schedule in the undergraduate section of this catalog (see “Medical Physics” under Physics in Arts and Sciences).

**Proposed URI catalog language for graduate program**

**Physics**

M.S., Ph.D.

401.874.2633

*Faculty:* Professor Andreev, chair. Professors: Andreev, Heskett, Kahn, Kaufman, Malik, Meyerovich, Muller, Nightingale, Reshetnyak and Steyerl; Assistant Professor: Ganikhanov

**Specializations**

*Astrophysics:* high energy extragalactic radio astrophysics.

*Biological physics:* membrane biophysics; membrane-associated folding/unfolding; molecular motors; steady-state and kinetics fluorescence and circular dichroism studies; calorimetry; small angle x-ray scattering on biological objects (at the European Synchrotron Radiation Facility, Grenoble); fluorescence microscopy; fluorescence polarization microscopy; spectral analysis from cells; electric cell substrate impedance sensing on cells.

*Computational physics:* classical and quantum Monte Carlo methods, large-scale parallel computations, optimization, many-body interactions and invariants, finite-size scaling.

*Experimental condensed matter physics:* electronic and structural properties of surfaces and thin films studied via low-energy electron diffraction, Auger electron spectroscopy, photoemission techniques (in-house and at the Brookhaven National Laboratory synchrotron facility); surfaces and interfaces in thin films and multilayers studied via X-ray and neutron reflection and diffraction (in-house and at the National Institute of Standards and Technology facility); epitaxial growth, magnetism in nanoparticles and on surfaces via neutron and X-ray scattering; characterization of electromigration by electrical and optical techniques, Rutherford backscattering, and scanning tunneling microscopy.

*Medical physics and nanotechnology:* drug delivery, whole-body fluorescence imaging, cancer nanotechnology.

*Nonlinear dynamics and chaos:* turbulence, Hamiltonian chaos, integrability in quantum mechanics.

*Theoretical condensed matter physics:* surface physics, phase transitions and critical phenomena, critical dynamics, superconductivity, quantum transport, nano-scale films and clusters, disordered systems, low-dimensional systems, spin dynamics, Bethe ansatz.

*Theoretical low-temperature physics:* Fermi and Bose quantum liquids, solids and gases; spin-polarized quantum systems.
reactor facility); epitaxial growth, magnetism in nanoparticles and on surfaces via neutron and X-ray scattering; characterization of Lithium Ion Batteries using Hard X-ray Photoemission Spectroscopy (HAXPES), Rutherford backscattering, and scanning tunneling microscopy; ultrafast dynamics of hot carriers in 2-dimensional materials studied with multi-color femtosecond spectroscopy; phonon decay and vibrational dynamics in traditional and soft condensed matter studied by coherent Raman spectroscopy techniques; sub-optical cycle waveform generation. 

**Experimental neutron physics:** ultracold neutrons used to study beta-decay, neutron optics (at the Institut Laue-Langevin, Grenoble).

**Medical physics, physics oncology and nanotechnology:** novel approaches in drug delivery and tumor targeting; whole-body and *ex vivo* fluorescence imaging; gold and magnetic nanoparticles; laser and x-ray radiation; hyperthermia; liposome delivery.

**Statistical physics:** Bethe ansatz, density functional theory, fractional exclusion statistics, applications to spin systems, quantum gases, granular matter, and biological matter.

**Theoretical condensed matter physics:** surface physics, phase transitions and critical phenomena, critical dynamics, superconductivity, quantum transport, systems with random rough boundaries, nano-scale films and clusters, disordered systems, low-dimensional systems, spin dynamics, nonlinear optics.

**Theoretical low-temperature physics:** Fermi and Bose quantum liquids, solids and gases; spin-polarized quantum systems, ultracold neutrons in quantizing gravity field.

**Master of Science**

*Admission requirements:* GRE and advanced test recommended; bachelor’s degree with major in physics preferred.

*Program requirements:* PHY 510, 520, 525, 530, 560, 570, and 580 are required of all students. For both the thesis and the nonthesis options, the student will complete 30 credits, of which no more than six may be below the 500 level. For the nonthesis option, at least one course will require a substantial paper involving significant independent study, and the student must pass a final written and oral examination.

**Master in Science in Medical Physics**

*Admission requirements:* Bachelor’s degree with major in physics or related discipline.

*Program requirements:* PHY 540, 545, 550, 552, 555, 560, 565, 585, 591; ELE 564 + lab are required courses. The following are required introductory courses, which could be taken at URI or their equivalents at other institutions: BIO 121 + lab, 242 + lab; PHY 210; SOC 224.

**Doctor of Philosophy**

*Admission requirements:* GRE and advanced test recommended; bachelor’s degree with major in physics preferred. Master’s degree is not required.

*Program requirements:* PHY510, PHY520, PHY525, PHY530, PHY570, PHY580 are core courses required for all students. In addition to the core courses, students in the Physics track will be required to take: PHY610, PHY630, PHY670, PHY680, and either one of (PHY625, PHY 626). In addition to the core courses, students in the Applied Physics track will be required to take: PHY540, PHY 560, one of (PHY625, PHY 626), one of (PHY630, PHY670), and one of (PHY610, PHY680). The choice of tracks and courses should be done with adviser’s approval. No replacements by courses from outside the Department are allowed. There is no formal departmental language requirement, although the candidate’s committee may require demonstration of language proficiency. Successful completion of a qualifying examination is required of all students. *This examination is normally expected to be taken in the summer preceding the second year of studies.*

**Notice of Change for Medical Physics Program**

*Date: 01/28/2015*

**A. PROGRAM INFORMATION**

1. **Name of institution**
   University of Rhode Island

2. **Name of department, division, school or college**
   Department: Physics
   College: Arts and Sciences
3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.
   Initiation date: 01/09/2015
   First degree date: NA

4. Intended location of the program
   Physics Department, URI

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

   If applicable, please include the existing URI catalog language and proposed catalog language changes that relate to your request.
   See attached catalog language information

6. Signature of the President
   ___________________________________________
   David M. Dooley

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Summary Description
Proposal for the adjustments in the curriculum of medical physics program
Physics Department
January 2015

On December 6, 2010 the five years combined BS in physics and MS in medical physics program was approved by the Rhode Island Board of Governors of Higher Education. On October 19, 2014 the MS program in medical physics was granted accreditation by the Board of Directors of the Commission on Accreditation of Medical Physics Education Programs (CAMPEP). For accreditation, we were required to make some changes to the program. All of the changes are listed below:

1. We had to separate MS part of the program, since accreditation only pertains to the graduate part of the program in medical physics. The accreditation agency was not in the position to provide accreditation for the entire 5 years program. As a result, we have two potential ways to obtain MS in medical physics: i) via a 5-year combined BS in physics and MS in medical physics program and ii) via a 2-year MS in medical physics program, which people with degrees in physics or a related discipline can enter.

   The revised semester maps and course check lists are attached for both the 5-year combined BS in physics and MS in medical physics program.

2. The total number of credits (162 credits) in the 5-year combined BS in physics and MS in medical physics program is not altered, only several courses were changed in the curriculum to better address teaching in medical physics field:

   □ The STA307 (Introductory Biostatistics) course is replaced by the STA411 (Biostatistics II), which is more appropriate for students with math and physics background.

   □ The PHY610 (Mathematical Methods in Physics II) course is replaced by the newly proposed course PHY585 (Advance Clinical Medical Imaging). Imaging is a required part of the medical physics education and was requested by CAMPEP to be added to the program.

   □ The ELE562 (Biomedical Instrumentation Design) course is replaced by the modified PHY565 (Radiation Detection, Instrumentation, and Data Analysis) course, which covers topics related to instrumentations in the medical physics field.
The PHY691 (Advanced Special Topics) course is replaced by the PHY591 (Special Problems) course, since 600-level of courses are not required for MS degree.

3. We propose some adjustments/changes to the following courses: PHY510, PHY555, PHY560, PHY565 and we propose to introduce a new PHY585 to reflect needs in teaching of clinical imaging.

**Existing URI catalog language**

**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; one 3-credit Basic Liberal Studies course.

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

**Sophomore Year First semester:** CSC 211; MTH 243; PHY 306, 410; 9 credits of Basic Liberal Studies courses.

**Second semester:** MTH 244; PHY 306, 410; 9 credits of Basic Liberal Studies courses.

**Junior Year First semester:** MTH 215; PHY 381, 451, 322 or 420; 6 credits of Basic Liberal Studies courses.

(In the beginning of the sixth semester, the student can begin the application process to be admitted to graduate school. 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, 540 or 545; 6 credits of Basic Liberal Studies courses.

Senior Year First semester: PHY 322 or 420, 550 or 552, 560 or 565, 510 or 610; ELE 564, 565.

Second semester: PHY 402, 452 or 570, 540 or 545; ELE 562, 563; STA 307.

Fifth Year First semester: PHY 483, 550 or 552, 560 or 565, 510 or 610.

Fifth Year Second semester: PHY 484, 555, 691; SOC 224.

Near the end of the final semester, students also take a final exam which is similar to the ABR Part 1 exam they are expected to take to get into a CAMPEP accredited residency program.
Proposed URI catalog language for 5 years program

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; one 3-credit Basic Liberal Studies course.

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

*Sophomore Year First semester:* CSC 211; MTH 243; PHY 205H, 275H, 210; 9 credits of Basic Liberal Studies courses.

*Second semester:* MTH 244; PHY 306, 402, 410; 6 credits of Basic Liberal Studies courses.

*Junior Year First semester:* MTH 215; PHY 381, 401, 451, 322 or 420; 6 credits of Basic Liberal Studies courses.

(In the beginning of the sixth semester, the student can begin the application process to be admitted to graduate school. 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.

*Senior Year First semester:* STA 411; PHY 322 or 420, 540, 550; ELE 564, 565.

*Second semester:* PHY 545 or 560, 552, 565.

*Fifth Year First semester:* SOC 224; PHY 483, 510, 555, 591.
Fifth Year Second semester: PHY 484, 545 or 560, 585, 591.

Existing URI catalog language for graduate program

Five-Year Program in Medical Physics

The Physics Departments also offers a five-year program of studies leading to a B.S. in physics and a M.S. in medical physics. The M.S. degree part of the program requires that the student take PHY 540, 545, 550, 552, 555, 560, 565, 691, 610; SOC 224; ELE 562 + lab, ELE 564 + lab. The rest of the courses are those indicated on the schedule in the undergraduate section of this catalog (see “Medical Physics” under Physics in Arts and Sciences).

Proposed URI catalog language for graduate program

Master in Science in Medical Physics

Admission requirements: Bachelor’s degree with major in physics or related discipline.

Program requirements: PHY 540, 545, 550, 552, 555, 560, 565, 585, 591; ELE 564 + lab are required courses. The following are required introductory courses, which could be taken at URI or their equivalents at other institutions: BIO 121 + lab, 242 + lab; PHY 210; SOC 224.

Please note that the Medical Physics Notice of Change also includes several “semester maps” that could not be copied and pasted into this document due to their complex formatting.

V. Graduate School Manual

Current and proposed wording to Section 7.22 of the Graduate School Manual

Current wording of GSM 7.22

7.22. Only courses offered primarily for graduate students and from accredited schools are eligible for transfer credit. Further, the student must have earned a grade that will satisfy the graduate degree requirements for graduate level coursework at that institution. Transfer from all international institutions, other than those specifically authorized by the Graduate Council, is limited to earned degrees equivalent to US master's degrees or better.

Proposed wording of GSM 7.22

7.22. Only graduate-level courses that have not been used as part of a conferred degree are eligible for transfer credit. Further, the courses must have been taken from accredited schools and the student must have earned a grade of B or higher in those courses. Transfer from all international institutions, other than those specifically authorized by the Graduate Council, is limited to earned degrees equivalent to US master's degrees or better. Transfer of credits that have been used as part of a conferred degree is strictly limited to the 30 or fewer credits from a previously-earned master's degree that can be applied to a doctoral degree.
Current and proposed wording to Section 3.33 of the Graduate School Manual

Current wording of GSM 3.33

3.33. Advanced Standing Credits: Advanced standing refers to credits taken at the University of Rhode Island by a non-matriculating student or by a student in one degree program before formally beginning another program. In instances where a student plans to take a course or courses while in one degree program so as to apply those credits to a more advanced degree at a later date, the student must request and receive written prior approval from the Dean of the Graduate School before enrolling in said course(s). Credits earned at the University of Rhode Island by a non-matriculating student may be applied as advanced standing toward degree requirements only upon the recommendation of the student’s major professor and the Graduate Program Director and with the approval of the Dean of the Graduate School. To be eligible, these credits must have been earned within a seven-year period before matriculating into the degree program in question. The following cases apply:

Proposed wording of GSM 3.33

3.33. Advanced Standing Credits: Advanced standing refers to credits taken at the University of Rhode Island by a non-matriculating student or by a student in one degree program before formally beginning another program. In instances where a student plans to take a course or courses while in one degree program so as to apply those credits to a more advanced degree at a later date, the student must request and receive written prior approval from the Dean of the Graduate School before enrolling in said course(s). Credits earned at the University of Rhode Island by a non-matriculating student may be applied as advanced standing toward degree requirements only upon the recommendation of the student’s major professor and the Graduate Program Director and with the approval of the Dean of the Graduate School. To be eligible, these credits must have been earned within a seven-year period before matriculating into the degree program in question and cannot have been used to fulfill any requirement of another degree. The following cases apply:

VI. Topics for Discussion

A. Development of rubrics for assessing Enhancement of Graduate Research Award applications - overarching questions to be answered about the awards themselves (see EGRA attachment).

1) Should there be one award category or two? (travel to conferences was suggested as a separate award category)

2) Is the award need or merit-based?

3) Other questions?

VII. Old Business

VIII. New Business

IX. Adjournment