



**Graduate Board
Room 57, Stodder Hall
Thursday, February 22, 2018
Refreshments - 3:00 pm
Meeting - 3:15 pm**

AGENDA

1. Welcome
2. Approval of the December 2017 Graduate Board minutes
3. January 2018 Curriculum Committee Report
4. Updates:
 - a. Maine Impact Week/Student Research Symposium
 - b. Graduate Commencement
 - c. Graduate enrollment management update
 - d. FYI: Dual concentration/certification in Special Education
5. Review of Graduate Certificate proposal in Surveying Engineering
6. Review of substantive change proposal for MS in Economics
7. Items arising

Graduate Board
Room 57, Stodder Hall
December 14, 2017

Attending: P. Agrawal, J. Artesani, M. Blaszkiewicz, D. Bousfield, T. Bowden, S. Butler, S. Delcourt, S. Ell, J. Ferland, C. Gerbi, L. Hicks, C. Isenhour, S. Jain, Z. Jin, J. Kelley, M. Kienzler, M. Kinnison, A. Knightly, M. LaRocque, S. Marrs, I. Mette, D. Neivandt, S. Ohno, B. Olsen, E. Pandiscio, J. Rosenbaum, M. Shea, C. Sponarski, M. Tajvidi, K. Vekasi, C. Villacorta Gonzales

Graduate School: C. Burgess

1. Review/Approval of the October Graduate Board meeting minutes
Motion to approve, seconded, approved with two abstentions.

2. November/December 2017 Curriculum Committee Reports
S. Delcourt presented the following courses which were recommended by the Curriculum Committee at their November 1st meeting for approval by the GB.

New Courses:

AVS 546 - Forage Science and Range Management

AVS 577 - Zoonoses and Animal Health

HTY 665 - Digital and Spatial History

MEE 559 - Engineering Optimization

SMS 563 - Fisheries Policy and Management

Modifications:

BUA 601 - Data Analysis for Business

SFR 545 - Adhesion and Adhesives Technology

Motion to approve, seconded, unanimously approved.

3. Short Items
 - a) Waldron and Hunter fellowship nominations:
Hunter Fellowship deadline was last Friday, December 8, 2017 with three nominations for four awards slots. Provided all nominees meet the minimum requirements, all three should receive fellowships. There were 18 nominees for the Waldron fellowship; it is likely that only two \$25,000 fellowships will be awarded. Two awards will be carried over from last year, which reduced the amount of funding available for the awards this year. If additional funding is found, a third fellowship is possible. The Executive Committee will review applications, and the fellowship recipients will be announced in

early January. Next nominations will be for the Chase, Trustee and Atlantic Provinces scholarships in February 2018.

b) Proposed Tax Cut Legislation

The Graduate School and Margaret Nagle from the office of Marketing and Communication worked with representatives of Graduate Student Government to publish an Op-Ed in the Bangor Daily News on the potential impact of the tax cut legislation on graduate students supported by assistantships. GB members stated the most current version of the bill had been modified so that graduate tuition waivers would not be taxed. A group of graduate students visited Senator Collins' office to ensure that she was aware of the importance of the issue.

c) TargetX Feedback

Feedback from GB members was generally positive, noting the much faster applicant response time to decisions. Undergraduate enrollment management has utilized TargetX successfully for a couple of years, however, the Graduate School is first in the UMaine System to implement an application and decision module which is much more complicated.

d) Graduate School Commencement Update

VP Varahramyan met with the President's Cabinet and discussed moving forward with the plan to hold a separate formal Graduate School commencement in Spring 2018. The Graduate School commencement will be held in the Collins Center and is expected to start at 3:00pm instead of 4:00pm, leaving enough time to transition the space for the Nursing School pinning ceremony later that evening. There was a suggestion to have the faculty on stage during the ceremony to maximize space for guests. The plan is to give students a certain number of tickets and unused tickets will go to a pool for students who need more tickets. The number of tickets per student is still TBD. Doctoral students will still be hooded and receive their degrees at the Commencement ceremony on Saturday, but will be recognized in some way at the Graduate Commencement ceremony on Friday.

e) Guidelines for Advisor/Advisee Relationships

There is a current version of the guidelines document on Google Drive. S. Delcourt requested that the group review the document again to ensure previous comments were addressed and that no further comments are to be included. Some Graduate programs have Graduate Student handbooks that have language regarding vacation time and leaves by graduate students. S. Delcourt requested that copies of such are forwarded to him for review to ensure consistency with the new guidelines and to incorporate, as needed. The updated document and additional feedback will be reviewed again by S. Delcourt, M. Blaszkiewicz (President of Graduate Student Government) and E. Kilroy (VP of

Graduate Student Government) and a revised document will be released in the spring for further discussion.

f) CGS Meeting Summary

D. Neivandt discussed the Council for Graduate Schools meeting that he, S. Delcourt and K. Varahramyan attended in Scottsdale, AZ, December 6-9, 2017. He reported that Michael Crow of Arizona State University gave a talk about fostering student access through expanding online classes. He also reported that Kristen Soltis Anderson gave a talk about the generalized behavior traits of Millennials (Myths and Truths about America's Most Talked-About Generation). She discussed that Millennials tend to dislike labels, tend to avoid responsibility and commitment until they feel they have been given enough evidence that they *should* commit to something. They have expectations of speed and transparency in decision-making and conveyance of decisions. They tend to consider the ethical ramifications of their purchasing decisions and strongly value authenticity.

S. Delcourt discussed a session he attended on accelerated graduate programs (4+1 and 3+2 programs) and determined that UMaine is well positioned in the development of these programs and policies compared to other schools. One item of concern common among schools was effective marketing of these programs to undergraduate students.

S. Delcourt also discussed a session he attended on the Three-Minute Thesis (3MT), a competition which serves as professional development for graduate students where a student has three minutes to present the essence of their thesis in a concise way that a nonacademic could understand. He noted that, in cooperation with the Foster Center for Innovation, the Graduate School is hoping to do some 3MT workshops during Spring 2018, with the intention of making a competition part of the UMaine Student Symposium in April.

g) Additional Information from GSG

M. Blaszkiewicz announced a series of three grant-writing workshops for graduate students, which will include a panel of experts on foundation and external grants as well as a panel discussion with previous grant award recipients. Student participants will receive a writing assignment and peer review on an assigned topic. The goal is to have students attend all three workshops to receive a certificate and possibly earn CEU credits.

4. Draft Guidelines for Assistantship Allocation

S. Delcourt discussed the past and current methodology used for assistantship allocation to graduate programs. He noted that the allocation formula had not changed much since the early 2000s, and in some cases has not kept pace with the needs of growing graduate programs or the instructional needs of some undergraduate programs. He stated that the Dean

has asked for the development of a data-driven process to help inform the allocation for new assistantships. Proposed metrics are: vitality (enrollment numbers and trends), capacity (faculty/student ratio; number of students funded; ratio of internal support to external support), and undergraduate instruction (undergraduate majors; undergraduate student credit hours). It was noted that these metrics are preliminary and are open for further discussion. Several questions and comments were provided by GB members indicating a need for further review on this topic before anything is finalized. S. Delcourt added that VP Varahramyan and he are reviewing the data with individual college deans.

5. Discussion of MBA Reorganization

S. Delcourt and D. Neivandt continued the previous discussion regarding a proposed reorganization of the MBA program addressing questions and issues surrounding the organizational proposal. Given that the Graduate Board's responsibility is over issues of graduate policy, there is a valid concern is that the organizational structure is inconsistent with the current Graduate School policy and the Graduate School's Constitution. Other objections raised by GB members were funding sources, ownership of intellectual property, ongoing effect on faculty, and accreditation. It was noted that the Faculty Senate rejected the proposal, but steps continue to be taken to move the plan ahead. VP Varahramyan will share the Graduate Board members' concerns with the Provost.

Meeting adjourned at 4:38pm.

DATE: February 5, 2018

TO: University of Maine Graduate School

RE: Notification of new concentration in special education - dual certification for high incidence disabilities and low incidence disabilities

The Master in Special Education currently supports three concentrations: low incidence disabilities, high incidence disabilities, and early intervention. Each concentration is an initial state certification program approved by the Maine Department of Education, leading to certification as a special education teacher (e.g., LI-286; HI-282). Following a statewide survey of special education directors, we acknowledge the need to offer students an additional certification pathway. In partnership with regional special education directors, the state certification office, and the special services director, we present to you a dual certification concentration option that will lead to state certification for both the 286 (LI) and the 282 (HI). The dual special education certification concentration option is the first of its kind in Maine, and the online design makes the program accessible to students statewide and beyond.

The dual special education certification concentration is comprised of 11 existing courses and 3 new courses, for a total of 45 credits. This is 3 courses more than our current concentrations. The existing courses are taught within our current concentrations, and the new courses will be taught by program faculty without an increase to current loads. The current concentrations will continue because student choice is important; however, we anticipate that the new option will increase our already growing enrollment.

Attached are the Program of Study forms for the LI, HI, and dual LI/HI concentration options. Each has been reviewed and approved by the Maine DOE as meeting requirements for initial special education certification or dual special education certification.

Approvals:

Special Education Program Chair:

Deborah Rooks-Ellis

Digitally signed by Deborah Rooks-Ellis
DN: cn=Deborah Rooks-Ellis, o=Special Education,
ou=University of Maine,
email=deborah.l.rooks@maine.edu, c=US
Date: 2018.02.04 08:50:54 -05'00'

School of Learning and Teaching, Director:

 1/2/18

 2/6/18

College of Education and Human Development, Associate Dean of Accreditation and Graduate Affairs:

 2/6/18

Program of Study: Effective Spring 2018

Capstone (3-6 credits)

Prerequisites for SED 610 and SED 620:

- Passing scores on Praxis II in appropriate Special Education certification areas (e.g., High Incidence and Low Incidence)
- Completion of SED credits with grades of B- or higher
- Completion of research course with grade of B- or higher

Additional prerequisites for SED 620:

- Successful completion of at least 1 year full-time teaching in Special Education

		Date Completed	Grade
SED 610 (Internship/student teaching in special education teaching, K-8 or 7-12) Required to earn recommendation for state certification			
SED 620 (Graduate project in special education) Current state certification documented			

Signatures

Student:

Date:

Advisor:

Date:

Graduate Coordinator:

Date:

Notes:



Scott Delcourt <delcourt@maine.edu>

Proposal for Graduate Certificate in Surveying Engineering

1 message

Dana Humphrey <danah@maine.edu>

Wed, Jan 24, 2018 at 10:52 AM

To: Scott Delcourt <delcourt@maine.edu>

Cc: Scott Dunning <dunning@maine.edu>, Raymond Hintz <ray.hintz@maine.edu>, Mohamad Musavi <musavi@maine.edu>

Scott,

Attached please find a proposal to create an on-line graduate certificate in surveying engineering. This proposal has been reviewed and approved by the College of Engineering Graduate and Research Committee. I have also reviewed and approve of this proposal.

Please complete the graduate school approval process for this proposal.

Best wishes,
Dana



Dana N. Humphrey, Ph.D., P.E.
Dean of Engineering
Kenneth Warren Saunders and Henry W. Saunders
Professor of Engineering Leadership and Management
University of Maine
5796 AMC Building, Room 200
Orono, ME 04469-5796
Phone: 207-581-2217
email: danah@maine.edu

**Surv.-Engr.-Grad-Certificate.docx**

38K

On-Line Graduate Certificate in Surveying Engineering Proposal

Educational objectives

The proposed certificate is more directed in substance relative to the current on-line Professional Science Masters in Engineering and Business (PSM) – surveying engineering concentration. The 20+ students currently in the PSM desire a graduate degree that combines graduate instruction in surveying engineering and business. The certificate focuses on surveying engineering topics that is considered beyond the existing surveying engineering technology undergraduate curriculum. The certificate is suited for students with a BS degree in surveying engineering technology (or equivalent) or a student with a non-surveying related bachelor degree who has also taken undergraduate surveying courses in plane surveying, construction/route surveying, and boundary law. Note some students with a non-surveying related bachelor degree could take the three prerequisite undergrad surveying classes from the University of Maine before being accepted into the certificate program.

While the PSM is immensely successful there are students who cannot commit to the business aspects of the degree but are motivated for surveying engineering graduate coursework. Note the coursework of the proposed certificate already exists as it is part of the surveying engineering component of the PSM. Like the PSM, the graduate certificate will be greatly enhanced by the E tuition rate.

Proposed Course Sequence

The surveying engineering courses in the PSM were purposely established to not require a defined sequence. In other words a prescribed order is not required. The proposed certificate is 12 credits (4 courses) of the following six existing on-line courses.

- (1) SVT 501 Advanced Adjustment Computations 3 cr. Fall
Direct formation of reduced form of normal equations; Cholesky decomposition and back substitution; using Cholesky algorithms for computing select variance-covariance terms; optimization of solutions via banded and column profile minimization; recursive matrix partitioning; use of conjugate gradient procedures in solution efficiency; post-adjustment variance-covariance propagation for computed terms.
- (2) SVT 511 Geodetic United States Public Land Survey System 3 cr. Fall
Review of townships, sections, closing corners, parenthetical distance and acreage; section subdivision, fractional rules; major changes in the 2009 Manual; the USPLS datum; Mean bearing in geodesy; geodetic coordinate geometry; geodetic computations of single and double proportioning; geodetic one, two, and three point control; geodetic compass rule adjustment, grant boundary adjustment, irregular boundary adjustment, and meander line computations; Geographic coordinate data base issues in an updated system; mega-adjustments and error propagation.
- (3) SIE 509 Principles of Geographic Information Systems 3 cr. Fall
Covers foundation principles of geographic information systems, including traditional representations of spatial data and techniques for analyzing spatial data in digital form. Combines an overview of general principles associated with implementation of geographic information systems and practical experience in the analysis of geographic information. Not open to those who have taken ISE 201.
- (4) SVT 512 Advanced Survey Law 3 cr. Spring

This course will cover applicable law related to surveying from the location of property boundaries to the operation of a surveying business.

(5) SVT 532 Survey Strategies in Use of Lidar 3 cr. Spring

Types of Lidar sensors and their applications; integration of GPS-IMU with Lidar; calibration; elimination of non-ground data; break line extraction; ground based mobile Lidar; Integration of survey control into Lidar data sets; accuracy assessment of overlapping scanned data; the industry standard .las format; integration with other survey information; Lidargrammetry; classifying Lidar data by return number and layer; procedures for geodetic accuracy assessment; corridor mapping

(6) SVT 541 Geodesy 3 cr. Spring

Types of coordinate systems and mathematical models; defining datums; defining transformation parameters between datums; building gravity models; modeling continental drift; conventional celestial and terrestrial references frames, precession, nutation, and polar motion; spherical trigonometry and spherical harmonic expansions; geodesic line, geodesic curvature, differential equations of the geodesic, direct and inverse solutions; conformal mapping of the ellipsoidal surface

Proposed Courses vs. Educational Objectives

As stated the order of the courses is a non-issue by intention. The purpose of the certificate is to provide a level of surveying engineering education that is not presented at the undergraduate level. These courses will expand the ability of surveyors in their daily production work schedules. The proof of the concept is demonstrated by the success of these courses as part of the current PSM surveying engineering concentration.

Need for the Graduate Certificate in Surveying Engineering

The PSM surveying engineering concentration has made the University of Maine the largest program, based on number of students, in graduation education in surveying engineering in the United States. Likewise the PSM has enhanced the total number of graduate students in the College of Engineering. But it has been obvious that some potential students did not enter the PSM program because

- (1) They were not interested in a business component to graduate education in surveying engineering.
- (2) They wanted a focus on expanding their knowledge base in a shorter span of time than the traditional 30 credits in a master's degree program. This is especially true for students with a non-surveying engineering, and as discussed need 3 courses of undergraduate surveying to prepare themselves for graduate education. Note this route towards professional licensure as a land surveyor is always less credits than completing a second BS degree in surveying engineering.

Thus a niche exists for this graduate certificate. A recently completed study for the College of Engineering by a non-University of Maine contractor illustrated the need for bachelor degree on-line education in surveying engineering. It is logical if that need exists the graduate certificate need also exists.

Surveying Engineering Graduate Faculty Support

The surveying engineering graduate faculty consists of graduate coordinator Raymond Hintz, Knud Hermansen, and Carlton Brown. Dr. Hintz and Hermansen teach in the proposed certificate program. Dr. Brown contributes to graduate student supervision and is the third faculty member signing PSM graduate paperwork. SIE 509 has been taught by Ms. Connie Holden for many years and she has indicated she will continue to teach that course in the future.

Curricular Criteria

1. The proposed graduate certificate is at the post- baccalaureate level.
2. The proposed graduate certificate is free standing (not part of an existing degree).
3. The proposed graduate certificate will be adopted for five years.
4. The proposed graduate certificate will require 12 credits (4 courses) selected from six existing courses that are all numbered 500+.
5. All courses presently exist as distance education (on-line).
6. The certificate will be completed in four semesters or less.

Eligibility and Admission Criteria

The guidelines in the "Graduate certificate guidelines" documentation will be followed. A 3.0 cumulative grade point average is required for completion. No entrance exams of any type (TOEFL, GRE, etc.) will be required. The surveying engineering graduate committee will decide on prerequisite requirements for an applicant whose BS degree was not in surveying engineering.

Fiscal Criteria

Since all of the courses are already being taught in on-line format there is no additional internal cost for the graduate certificate. It is anticipated advertisement will be predominately on-line through state surveying societies along with the current PSM and the proposed on-line BS degree. Advertising in surveying trade magazines or journals will occur once a year and be paid through existing College of Engineering or Surveying Engineering Technology funds. It is obviously hoped many employers will pay tuition for their employees but there is no way to estimate how often this will occur.

Expedited Review

The proposed certificate fits the definition of "expedited review" as it contains no new courses, no new faculty lines, and no additional costs to the University.



Raymond J. Hintz
Surveying Engineering Graduate Coordinator

UNIVERSITY OF MAINE SYSTEM
SUBSTANTIVE CHANGES TO EXISTING PROGRAM
PROPOSAL

Graduate
 Two-Year
 Four-Year

University of Maine
College of Natural Sciences, Forestry & Agriculture

- Title:** Masters of Science in Economics
Degree: Masters of Science
Area: Economics
CIP Code: ECO-MA: 45.0601, Economics, General
CIP Code: ECO-MS: 45.0603, Econometrics and Quantitative Economics

- Person Responsible for Planning**

Name: Timothy M. Waring, Graduate Coordinator
Department: School of Economics
Address: 200 Winslow Hall
Telephone: 581-3157

- General Objective of Proposal**

The School of Economics has one main objective with this proposed graduate program modification: differentiating our Economics graduate tracks without adding a single new course. We propose to split our current ECO MA into to clearly differentiated Masters degrees, an ECO MS with increased technical course requirements which will prepare graduates for Economics PhD programs, and a modified ECO MA degree with fewer quantitative requirements, and more elective flexibility for students pursuing certificates or dual Masters degree programs elsewhere on campus.

We consider this change to be a single substantive change to our current ECO MA for the reason that we are not adding courses or content, but simply creating two degree tracks where there was only one.

- Documented Evidence of Need**

The need that drives our proposal to differentiate our program arises from patterns we have observed in the career trajectories of our graduate students. Most economics graduate students can be roughly categorized into two groups. The first group are

seeking a traditional economics masters degree, and the expanded career options it makes available. This type of student often desires a little more course flexibility to fit more of their graduate electives to courses that fit their interests. The second group are those who are seeking to develop a career around quantitative analysis, and are motivated to seek out more technical challenge and acquire a large quantitative skillset. Some of these students seek to pursue a PhD in Economics, or other quantitative PhD.

As an example, in the fall of 2017, three current ECO MA students approached the School to ask if a Masters of Science degree could be offered. They argued that an MS with more quantitative training would increase their chances of acceptance in PhD programs around the country. They are correct. Many economics PhD programs prefer applicants with masters degrees because they have more training in economics, mathematics and statistics. For example, Iowa State's Economics PhD program¹ states "*Master's Degree in economics, mathematics or statistics from a well-known university preferred.*" Additionally, there is a growing demand in the marketplace and among graduate students for modern computational and analytical skills. Therefore, a more technically-oriented Masters of Science would better position graduates for Economics PhD programs, and similarly analytically oriented positions.

Second, our School sees a growing number of students who take the ECO MA degree in complement with other graduate programs. These include dual masters degree programs such as the Dual Masters degree program with the School of Policy and International Affairs², or graduate certificates such as the Geographic Information Systems Certificate³. These students benefit from added graduate elective flexibility to allow them to complete the requirements. Our growing "4+1" enrollment is also increasing the number of students who complete an ECO MA without a research-based thesis, or time or interest to take many special electives. Therefore, a more flexible Masters of Arts would expand the reach of the 4+1 program, and enable innovative graduate careers such as a dual-degree choices.

Finally, differentiating the MA and MS degrees would have additional benefits for our graduate students and faculty advisors. By simplifying and streamlining our graduate offerings, graduate students would be better able to distinguish and choose among our graduate degrees, and would make it easier for faculty to explain alternative options clearly, and guide students in each.

¹ econ.iastate.edu/graduate-admission-guidelines

² umaine.edu/soe/dual-degree-in-global-policy-m-a

³ online.umaine.edu/graduate-certificates/geographic-information-systems

Rationale

A Masters in Science in Economics (ECO MS) would technically be a ‘new’ graduate program. However, the proposed curriculum is substantially reflected in the current MA program, as can be seen in the table below. Importantly, we will not offer any new courses as a result of this proposed change.

Moreover, we believe that neither change represents a significant departure from our current Masters degrees, either in content or in method of delivery. Nor are we proposing here to change the geographic area in which the degrees are offered. Thus, these changes do not constitute ‘substantive changes,’ by the criteria of Section 305.2 “Substantive Changes to Existing Academic Programs” of the University of Maine System Administrative Procedures Manual.

Program Design

The following table lays out the current and proposed degree requirements and options.

	Degree Requirements	MA (current)	MS (new)	MA (new)
CORE COURSES	511 – Macroeconomics (cr hrs)	1 (3)	1 (3)	1 (3)
	514 – Microeconomics	1 (3)	1 (3)	1 (3)
	530 – Econometrics	1 (3)	1 (3)	1 (3)
	531 – Discrete Econometrics	1 (3)	1 (3)	
	532 – Time Series Analysis		1 (3)	
ELECTIVES	ECO Graduate Electives (cr hrs)	6 (18)	5 (15)	6 (18)
	ECO 597 Indep. Study (cr hrs)			1 (3)
THESIS OPTION	ECO 699 Research (*substitute)	2 (6)	2 (6)	2 (6)
	TOTAL CREDITS	30	30	30

5. A. Which campuses, agencies, organizations, institutions or individuals have you involved or do you plan to involve in the program?

None beyond the School of Economics at the University of Maine.

6. What type and/or extent of support is presently available?

All support required for this program is already available. No additional support would be required for this change.

7. Briefly describe preliminary plans for regular program evaluations, formative and summative.

In keeping with our current evaluation efforts we will evaluate the success of the new program over time as we do with all our graduate degrees. We keep records of student progress and degree success, from graduate applications, to yearly student progress, to graduation and job placement. We also keep records of alumni career positions. These data, as well as the more frequent evaluations of faculty advisors, help us to ensure not only that each student is in the program best-suited for her or his interest and abilities, but also that the degrees themselves best represent the true demand.

8. Time Frame

Estimated Planning Time:	none
Estimated Implementation Time:	none
Estimate of Program Lifetime:	15-20 years

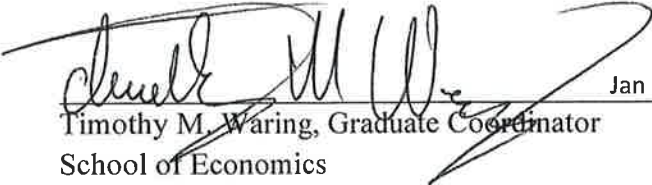
9. COMPLETE FOR GRADUATE PROGRAM ONLY: On what other campus, if any, will this program be available? What plans are there to insure transferability from other campuses into this program or to deliver this program to other campuses?

There are no other economics graduate degrees offered in any other University of Maine System campus.

Because of the rigorous nature of our graduate program, graduate students strongly prefer to work together and study in groups. This social support, and the support provided by second year students makes completing an economics graduate degree very difficult without being physically present on campus. As a result, graduate students prefer to attend our graduate economics degrees at UMaine in person, and as a result of that, we do not have plans to offer these degrees online at this time.


10. Other Pertinent Data and/or Information

11. Submitted By:


Jan 10, 2018
Timothy M. Waring, Graduate Coordinator (Date)
School of Economics

Approved By:


1/10/18
(Department Head) (Date)


1/16/18
(Dean of College) (Date)

(Dean of Graduate School) (Date)

(Chief Academic Officer) (Date)

(President) (Date)