The Graduate School

THE UNIVERSITY OF MAINE

5775 Stodder Hall, Room 42
Orono, Maine 04469-5775
Tel: 207.581.3291
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umaine.edu/graduate

CURRICULUM COMMITTEE REPORT

The Curriculum Committee met on November 3rd, 2015 and recommends the following courses to the Graduate Board for approval at its December 17, 2015 meeting.

New Courses:

COS 540 Computer Networks
SFA 672 Dynamic Technical Presentations

Modifications:

SIE 503 Principles of Experimental Design
SIE 505 Formal Foundations for Information Science
SIE 507 Information System Programming
SIE 510 Geographic Information System Applications
SIE 512 Spatial Analysis
SIE 515 Human Computer Interaction
SIE 516 Virtual Reality: Research and Applications
SIE 555 Spatial Database System
SIE 557 Database System Applications
SIE 558 Real-time Sensor Data Streams
SIE 559 Geosensor Network
SIE 570 Spatial Cognition Computing
SIE 571 Pattern Recognition and Robotics
SIE 590 Information System Internship
SIE 598 Selected Studies in Spatial Engineering
SIE 699 Graduate Thesis/Research
SMS 691 Marine Science Seminar

Eliminations:

SIE 565 Reasoning with uncertainty in Spatial Info. Systems

The Curriculum Committee met on December 1st, 2015 and recommends the following courses to the Graduate Board for approval at its December 17, 2015 meeting.

New Courses:

FSN 506 Nutritional Assessment
SFA 551 Infectious diseases and food safety-from plants to humans
SED 585 Communication for Students with Autism Spectrum Disorders

Modifications:

ERS 560 Marine Geology
SMT 507 Research-related curriculum Development in Science and Mathematics (title change)

THE UNIVERSITY OF MAINE

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OCT 15 2015
GRADUATE SCHOOL

NEW COURSE PROPOSAL FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: Spatial Information Science and Engineering

COURSE DESIGNATOR: COS COURSE NUMBER: 540 EFFECTIVE SEMESTER: Spring 2016

COURSE TITLE: Computer Networks

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- [x] X...New Course
- [ ] New Course with Electronic Learning [1]
- [ ] Experimental

MODIFICATION (Check all that apply and complete Section 2):

- [ ] Designator Change
- [ ] Number Change
- [ ] Title Change
- [ ] Description Change
- [ ] Prerequisite Change
- [ ] Credit Change
- [x] Cross Listing (must be at least 400-level) [2]
- [ ] Addition of Electronic Learning Component [1]
- [ ] Other (specify) COS 440

ELIMINATION:

- [ ] Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer	9/29/15	
College(s) Curriculum Committee Chair(s) [if applicable]		
Timothy Cole	10/6/15	TMC
Laura Artesani	10/6/15	LA
College Dean(s)		
Emily Haddad	10-13-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 1 (FOR NEW COURSE PROPOSALS):

Proposed Catalog Description (include designator, number, title, prerequisites, credit hours):

COS 540: Computer Networks
Prerequisites: COS 335 or permission of instructor
Credit Hours: 3
Provides an introduction to the concepts, protocols, technologies and principles of computer networking. Utilizes the technologies and protocols of the Internet as the primary vehicle for studying the fundamental concepts of computer networking. Uses a "top-down" approach to the study of the Internet, beginning with the "application layer", with such technologies as the Web and HTTP, peer-to-peer applications, and electronic mail. It then examines the other four layers of the Internet protocol stack (the transport, network, link, and physical layers), and the services they provide that enable the development of increasingly sophisticated and powerful networking applications.

Notes: COS 440 and COS 540 may not both be taken for degree credit.

Components (type of course/used by Student Records for MaineStreet) – *Multiple selections are possible for courses with multiple non-graded components:*

_____Applied Music _____Clinical _____Field Experience/Internship _____Independent Study
_____Laboratory __X__Lecture/Seminar _____Recitation _____Research _____Studio _____Thesis

Text(s) planned for use:

Computer Networking: A Top-Down Approach, by Kurose and Ross, Addison-Wesley, 2012

Course Instructor (include name, position, teaching load):

Phillip Dickens, School of Computing and Information Science

Reason for new course:

The internet is a transformative technology in today's society and a topic of significant interest to students in computer science. This course will provide a basic understanding of the tools and technologies utilized in the Internet, and enable students to create their own networking applications.
This course is a breadth requirement for all COS PhD students, as specified in the graduate catalog.

Does the course addition require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?
(X) No. The department will not request additional resources for this course.
( ) Yes. Please list additional resources required and note how they will be funded or supported.

What other departments/programs are affected (e.g. course overlap, prerequisites)? Have affected departments/programs been consulted? Any concerns expressed? Please explain.

N/A

How often will this course be offered? Will offering this course result in overload salary payments, either through the college or CED, either to the instructor of this course or to anyone else as a result of rearranging teaching assignments?

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Food and Agriculture**

COURSE DESIGNATOR: **SFA** COURSE NUMBER: **672** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Dynamic Technical Presentations**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- [x] New Course
- [ ] New Course with Electronic Learning [1]
- [ ] Experimental

MODIFICATION (Check all that apply and complete Section 2):

- [ ] Designator Change
- [ ] Number Change
- [ ] Title Change
- [ ] Description Change
- [ ] Prerequisite Change
- [ ] Credit Change
- [ ] Cross Listing (must be at least 400-level) [2]
- [ ] Addition of Electronic Learning Component [1]
- [ ] Other (specify) _____

ELIMINATION:

- [ ] Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s) M. Susan Erich / SFA	9/15/15	MSE
College(s) Curriculum Committee Chair(s) [if applicable]		
College Dean(s) EN Ashworth / NSFA	10/27/15	ENA
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 1 (FOR NEW COURSE PROPOSALS):

Proposed Catalog Description (include designator, number, title, prerequisites, credit hours):

SFA 672 Dynamic Technical Presentations
Presentation of research results and literature information.
May be repeated for credit up to three times.

Prerequisites & Notes
FSN 571 or permission.

Credits: 1

Components (type of course/used by Student Records for MaineStreet) – *Multiple selections are possible for courses with multiple non-graded components:*

☐ Applied Music ☐ Clinical ☐ Field Experience/Internship ☐ Research ☐ Studio
☐ Laboratory ☒ Lecture/Seminar ☐ Recitation ☐ Independent Study ☐ Thesis

Text(s) planned for use:

Course Instructor (include name, position, teaching load):

Dr. Tsutomu Ohno

Reason for new course:

The School of Food and Agriculture wants to offer an advanced graduate seminar that will potentially be taken by graduate students in all our program, including AVS, FSN and PSE programs. The focus of this course is on modern presentation styles appropriate for both scientific and public presentations, specifically the Pecha Kucha format.

Does the course addition require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?

◉ No. The department will not request additional resources for this course.

○ Yes. Please list additional resources required and note how they will be funded or supported.

What other departments/programs are affected (e.g. course overlap, prerequisites)? Have affected departments/programs been consulted? Any concerns expressed? Please explain.

SFA 672 is potentially open to graduate students from other programs if they wish to enroll.

How often will this course be offered? Will offering this course result in overload salary payments, either through the college or CED, either to the instructor of this course or to anyone else as a result of rearranging teaching assignments?

every spring, possibly every semester. It will not be overload, so will not result in any overload payments.

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **School of Computing and Information Science**

COURSE DESIGNATOR **SIE** COURSE NUMBER **503** EFFECTIVE SEMESTER **Spring 2016**

COURSE TITLE **Principles of Experimental Design**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) (If applicable)		
Timothy M. Cole	10/6/15	
Laura Artesani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 503 - Principles of Experimental Design

This is an interdisciplinary course designed primarily for first year graduate students and advanced standing undergraduates who plan to engage in scientific research. The course covers topics in: (1) design of experiments, (2) modern experimental techniques and instrumentation, and (3) data collection, organization, and statistical analysis techniques.

Prerequisites & Notes
SIE 501 or permission

Credits: 1

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 503 - Principles of Experimental Design

This is an interdisciplinary course designed primarily for first year graduate students and advanced standing undergraduates who plan to engage in scientific research. The course covers topics in: (1) design of experiments, (2) modern experimental techniques and instrumentation, and (3) data collection, organization, and statistical analysis techniques.

Prerequisites & Notes
SIE 501 or instructor permission

Credits: 1

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **School of Computing and Information Science**

COURSE DESIGNATOR **SIE** COURSE NUMBER **505** EFFECTIVE SEMESTER **Spring 2016**

COURSE TITLE **Formal Foundations for Information Science**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [If applicable]		
Timothy M. Cole	10/6/15	
Laura Arlesani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 505 - Formal Foundations for Information Science

Increases student's understanding of the approach to information systems and science by formalisms. Draws on mathematics to increase familiarity with formal syntax and language, develops understanding and technical ability in handling structures relevant to information systems and science. Includes a review of fundamental material on set theory, functions and relations, graph theory, and logic; examines a variety of algebraic structures; discusses formal languages and the bases of computation.

Prerequisites & Notes
SIE or MSIS student or permission of instructor.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 505 - Formal Foundations for Information Science

Increases student's understanding of the approach to information systems and science by formalisms. Draws on mathematics to increase familiarity with formal syntax and language, develops understanding and technical ability in handling structures relevant to information systems and science. Includes a review of fundamental material on set theory, functions and relations, graph theory, and logic; examines a variety of algebraic structures; discusses formal languages and the bases of computation.

Prerequisites & Notes
Graduate standing or instructor permission.

Credits: 3

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **507** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Information System Programming**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	MJG
College(s) Curriculum Committee Chair(s) (If applicable)		
Timothy M. Cole	10/6/15	TMC
Laura Artesani	10/6/15	LA
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 507 - Information Systems Programming

Programming for those envisioning careers focused on developing and managing information systems and databases as opposed to software design. Data structures, algorithms, and their analysis. Lec. 3.

Prerequisites & Notes
SIE or MSIS student or permission of instructor.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 507 - Information Systems Programming

Programming for those envisioning careers focused on developing and managing information systems and databases as opposed to software design. Data structures, algorithms, and their analysis. Lec. 3.

Prerequisites & Notes
Graduate standing or instructor permission.

Credits: 3

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **510** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Geographic Information System Applications**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [if applicable]		
Timothy M. Cole	10/6/15	
Laura Arresani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 510 - Geographic Information Systems Applications

Introduces both conceptual and practical aspects of developing GIS applications. Covers application areas from natural resourse planning cthrough transportation, cadastral and land information systems and their spatial modeling requirements, and application development from requirement analysis to database design and implementation.

Prerequisites & Notes
ISE 201, or SIE 509 or permission.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 510 - Geographic Information Systems Applications

Introduces both conceptual and practical aspects of developing GIS applications. Covers application areas from natural resource planning through transportation, cadastral and land information systems and their spatial modeling requirements, and application development from requirement analysis to database design and implementation.

Prerequisites & Notes
SIE 509 or instructor permission.

Credits: 3

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **School of Computing and Information Science**

COURSE DESIGNATOR **SIE** COURSE NUMBER **512** EFFECTIVE SEMESTER **Spring 2016**

COURSE TITLE **Spatial Analysis**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [If applicable]		
Timothy M. Cole	10/6/15	
Laura Artesani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 512 - Spatial Analysis

Introduces students to techniques for spatial analysis. Covers methods and problems in spatial data sampling, issues in preliminary or exploratory analysis, problems in providing numerical summaries and characterizing spatial properties of map data and analysis techniques for univariate and multivariate data. Students will be responsible for completing several hands-on exercises.

Prerequisites & Notes
an introductory statistics course, graduate standing or instructor permission.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 512 - Spatial Analysis

Introduces students to techniques for spatial analysis. Covers methods and problems in spatial data sampling, issues in preliminary or exploratory analysis, problems in providing numerical summaries and characterizing spatial properties of map data and analysis techniques for univariate and multivariate data. Students will be responsible for completing several hands-on exercises.

Prerequisites & Notes
Introductory statistics course and graduate standing or instructor permission.

Credits: 3

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **515** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Human Computer Interaction**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	M. G.
College(s) Curriculum Committee Chair(s) [if applicable]		
Timothy M. Cole	10/6/15	TMC
Laura Artesani	10/6/15	LA
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	EH
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 515 - Human Computer Interaction

Students are introduced to the fundamental theories and concepts of human-computer interaction (HCI). Topics covered include: interface design and evaluation, usability and universal design, multimodal interfaces (touch, gesture, natural language), virtual reality, and spatial displays.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 515 - Human Computer Interaction

Students are introduced to the fundamental theories and concepts of human-computer interaction (HCI). Topics covered include: interface design and evaluation, usability and universal design, multimodal interfaces (touch, gesture, natural language), virtual reality, and spatial displays.

Prerequisites & Notes
Programming experience and graduate standing or instructor permission.

Credits: 3

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **516** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Virtual Reality: Research and Applications**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning[1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [If applicable]		
Timothy M. Cole	10/6/15	TMC
Laura Artesani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 516 - Virtual Reality: Research and Applications

This course is designed to provide students with an overview of the basic principles of virtual reality (VR) and virtual environment technology (VET). The goal is to learn enough about the strengths and limitations of VR technology in order to be able to construct simple immersive environments as well as to understand the human factors and cognitive issues that should be considered when using this medium.

Prerequisites & Notes
none

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 516 - Virtual Reality: Research and Applications

This course is designed to provide students with an overview of the basic principles of virtual reality (VR) and virtual environment technology (VET). The goal is to learn enough about the strengths and limitations of VR technology in order to be able to construct simple immersive environments as well as to understand the human factors and cognitive issues that should be considered when using this medium.

Prerequisites & Notes
Programming experience and graduate standing or instructor permission.

Credits: 3

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

Please return the completed form with appropriate signatures and documentation to the Graduate School.
5775 Stodder Hall, Room 42
Orono, Maine 04469-5775

Course Proposal Guidelines available at http://umaine.edu/graduate/system/files/files/CourseGuidelines.pdf

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **School of Computing and Information Science**

COURSE DESIGNATOR **SIE** COURSE NUMBER **555** EFFECTIVE SEMESTER **Spring 2016**

COURSE TITLE **Spatial Database System**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☒ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [if applicable]		
Timothy M. Cole	10/6/15	TMC
Laura Arteseani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 555 - Spatial Database Systems

Covers internal system aspects of spatial database systems. Layered database architecture. Physical data independence. Spatial data models. Storage hierarchy. File organization. Spatial index structures. Spatial query processing and optimization. Transaction management and crash recovery. Commercial spatial database systems.

Prerequisites & Notes
SIE 550 and programming experience in Java, C++ or C.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 555 - Spatial Database Systems

Covers internal system aspects of spatial database systems. Layered database architecture. Physical data independence. Spatial data models. Storage hierarchy. File organization. Spatial index structures. Spatial query processing and optimization. Transaction management and crash recovery. Commercial spatial database systems.

Prerequisites & Notes
Programming experience and graduate standing or instructor permission.

Credits: 3

Reason for course modification:

Prereq: Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.
Distance Offering: Currently teaching other distance courses in our graduate curriculum over many years and will manage those students taking this course by distance in a similar manner.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **557** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Database System Applications**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [If applicable]		
Timothy M. Cole	10/6/15	
Laura Arlesani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 557 - Database System Applications

Study, design and implementation of object-relational database system applications. Introduction to database systems. Integrating database systems with programs. Web applications using database systems. Final database project.

Prerequisites & Notes
SIE 507

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 557 - Database System Applications

Study, design and implementation of object-relational database system applications. Introduction to database systems. Integrating database systems with programs. Web applications using database systems. Final database project.

Prerequisites & Notes
Graduate standing or instructor permission.

Credits: 3

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **558** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Real-time Sensor Data Streams**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☒ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [If applicable]		
Timothy M. Cole	10/6/15	
Laura Arlesani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-8-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 558 - Real-time Sensor Data Streams

This course is an introduction into the technology of sensor data stream management. This data management technology is driven by computing through sensors and other smart devices that are embedded in the environment and attached to the Internet, constantly streaming sensed information. With streams everywhere, Data Stream Engines (DSE) have emerged aiming to provide generic software technology similar to that of database systems for analyzing streaming data with simple queries in real-time. Sensor streams are ultimately stored in databases and analyzed using scalable cloud technologies.

Prerequisites & Notes
Graduate standing, programming experience in Java, C++, or C, or permission of the instructor.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 558 - Real-time Sensor Data Streams

This course is an introduction into the technology of sensor data stream management. This data management technology is driven by computing through sensors and other smart devices that are embedded in the environment and attached to the Internet, constantly streaming sensed information. With streams everywhere, Data Stream Engines (DSE) have emerged aiming to provide generic software technology similar to that of database systems for analyzing streaming data with simple queries in real-time. Sensor streams are ultimately stored in databases and analyzed using scalable cloud technologies.

Prerequisites & Notes
Programming experience in Java, C++ or C or instructor permission.

Credits: 3

Reason for course modification:

Prereq: Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.
Distance Offering: Currently teaching other distance courses in our graduate curriculum over many years and will manage those students taking this course by distance in a similar manner.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **School of Computing and Information Science**

COURSE DESIGNATOR **SIE** COURSE NUMBER **559** EFFECTIVE SEMESTER **Spring 2016**

COURSE TITLE **Geosensor Network**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☒ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) (if applicable)		
Timothy M. Cole	10/6/15	TMC
Laura Arfesani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-8-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 559 - Geosensor Networks

Readily available technology of ubiquitous wireless communication networks, the miniaturization of computing and storage platforms as well as the development of novel microsensors and sensor materials has lead to the technology of wireless geosensor networks (GSN). Geosensor networks have changed the type of dynamic environmental phenomena that can be detected, monitored and reacted to, often in real-time. In this course, we will survey the field of wireless geosensor networks, and explore the state of the art in technology and algorithms to achieve energy-efficient, robust and decentralized spatial computing.

Prerequisites & Notes
Graduate standing, programming experience in Java, C++, or C, or permission of the Instructor.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 559 - Geosensor Networks

Readily available technology of ubiquitous wireless communication networks, the miniaturization of computing and storage platforms as well as the development of novel microsensors and sensor materials has lead to the technology of wireless geosensor networks (GSN). Geosensor networks have changed the type of dynamic environmental phenomena that can be detected, monitored and reacted to, often in real-time. In this course, we will survey the field of wireless geosensor networks, and explore the state of the art in technology and algorithms to achieve energy-efficient, robust and decentralized spatial computing.

Prerequisites & Notes
Programming experience in Java, or C++, or instructor permission.

Credits: 3

Reason for course modification:

Prereq: Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.
Distance Offering: Currently teaching other distance courses in our graduate curriculum over many years and will manage those students taking this course by distance in a similar manner.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **570** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Spatial Cognition Computing**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [if applicable]		
Timothy M. Cole	10/6/15	TMC
Laura Alaesani	10/6/15	LA
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 570 - Spatial Cognition and Computing

Study of cognitive aspects for understanding spatial representations and reasoning processes. Cognitive models are studied and related to Artificial Intelligence Systems.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 570 - Spatial Cognition and Computing

Study of cognitive aspects for understanding spatial representations and reasoning processes. Cognitive models are studied and related to Artificial Intelligence Systems.

Prerequisites & Notes
Graduate standing or instructor permission.

Credits: 3

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

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THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **571** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Pattern Recognition and Robotics**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [If applicable]		
Timothy M. Cole	10/6/15	
Laura Arrescani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 571 - Pattern Recognition and Robotics

Pattern recognition algorithms classify input data based on statistical information. A mobile robot needs pattern recognition algorithms to make sense of its spatial environment based on sensor input. The course will introduce the mathematical framework of pattern recognition and present practical applications in robotics. The course will also cover supervised neural network learning algorithms.

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 571 - Pattern Recognition and Robotics

Pattern recognition algorithms classify input data based on statistical information. A mobile robot needs pattern recognition algorithms to make sense of its spatial environment based on sensor input. The course will introduce the mathematical framework of pattern recognition and present practical applications in robotics. The course will also cover supervised neural network learning algorithms.

Prerequisites & Notes
Graduate standing or instructor permission.

Credits: 3

Reason for course modification:

Promotion of consistency and clarity in the language for prerequisites among the SIE graduate courses.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

Please return the completed form with appropriate signatures and documentation to the Graduate School.
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Course Proposal Guidelines available at http://umaine.edu/graduate/system/files/files/CourseGuidelines.pdf

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **590** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Information System Internship**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☒ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/28/15	
College(s) Curriculum Committee Chair(s) [if applicable]		
Timothy M. Cole	10/6/15	TMC
Laura Ariosani	10/6/15	
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 590 - Information Systems Internship

Utilization of knowledge gained from the information systems graduate program within a business, non-profit or government organization and acquisition of practical training.

Prerequisites & Notes
Successful completion of nine credits of required courses in the MSIS program.

Credits: 3-6

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 590 - Information Systems Internship

Utilization of knowledge gained from a School of Computing and Information Science graduate program within a business, non-profit or government organization and acquisition of practical training.

Prerequisites & Notes
Successful completion of nine credits of required courses in a graduate program in SCIS.
May be repeated for credit.

Credits: 3

Reason for course modification:

Description: Desire to make the course available for students in any SCIS graduate program.

Credits: We only allow the course for three credits. We are open to having a student have more than one internship experience for credit with different companies assuming that the learning experience work plan differs substantially from the previous experience.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

Please return the completed form with appropriate signatures and documentation to the Graduate School.
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Orono, Maine 04469-5775

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THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Computing and Information Science**

COURSE DESIGNATOR: **SIE** COURSE NUMBER: **598** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Selected Studies in Spatial Engineering**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☒ Description Change
- ☐ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) (if applicable)		
Timothy M. Cole	10/6/15	TMC
Laura Ariesani	10/6/15	LA
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 598 - Selected Studies in Spatial Information Engineering

Topics in surveying, photogrammetry, remote sensing, land information systems and geodesy. Content varies to suit current needs. May be repeated for credit.

Credits: 1-3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 598 - Selected Studies in Spatial Information Engineering

Topics in any subfield of spatial information science and engineering. Content varies to suit current needs. May be repeated for credit.

Credits: 1-3

Reason for course modification:

Long overdue update of description due to changes in the field.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

Please return the completed form with appropriate signatures and documentation to the Graduate School.
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THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **School of Computing and Information Science**

COURSE DESIGNATOR **SIE** COURSE NUMBER **699** EFFECTIVE SEMESTER **Spring 2016**

COURSE TITLE **Graduate Thesis / Research**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [if applicable]		
Timothy M. Cole	10/6/15	TMC
Laura Artesani	10/6/15	LA
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SIE 699 - Graduate Thesis/Research

Graduate thesis or research conducted under the supervision of student's advisor.

Prerequisites & Notes
A "Responsible Conduct of Research" course approved by the Office of Research and Sponsored Programs and the Graduate School (www.umaine.edu/graduate/responsible-conduct-research) is required before or concurrently with completion of 3rd XXX 699 credit. Permission

Credits: Ar

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SIE 699 - Graduate Thesis/Research

Graduate thesis or research conducted under the supervision of student's advisor.

Prerequisites & Notes: Permission

Credits: Ar

Reason for course modification:

Update due ensuring that research methods courses are taken prior to pursuing thesis credits and we are now using INT 601 rather than listing the more general campus-wide RCR course requirement.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

Please return the completed form with appropriate signatures and documentation to the Graduate School.
5775 Stodder Hall, Room 42
Orono, Maine 04469-5775

Course Proposal Guidelines available at http://umaine.edu/graduate/system/files/files/CourseGuidelines.pdf

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Marine Sciences**

COURSE DESIGNATOR: **SMS** COURSE NUMBER: **691** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Marine Science Seminar**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning[1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☒ Description Change
- ☐ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)		Date	Sign Initials
Leader, Initiating Department/Unit(s) Rebecca Van Beneden		10/7/2015	RVB
College(s) Curriculum Committee Chair(s) (If applicable) Gayle Zydlewski		10-7-15	GBZ
College Dean(s) Edward Ashworth	George K Criner Assoc. Dean	10/14/15	GKC
Graduate School David Neivandt			

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SMS 691 – Marine Science Seminar

Student seminars on their own research or current topics in marine science.
Credits: 1

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SMS 691 – Marine Science Seminar

This graduate seminar focuses on aspects of professional development, performance, and conduct currently practiced in the marine sciences. Topics include: professional habits of mind, science communication, scientific ethics, and responsible conduct of research. This course meets the Graduate School requirement for "Responsible Conduct of Research Training Requirement". Credits: 1

Reason for course modification:

The course content has been approved by the Graduate School as meeting the requirement for RCR training.

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

Please return the completed form with appropriate signatures and documentation to the Graduate School.
5775 Stodder Hall, Room 42
Orono, Maine 04469-5775

Course Proposal Guidelines available at http://umaine.edu/graduate/system/files/files/CourseGuidelines.pdf

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **School of Computing and Information Science**

COURSE DESIGNATOR **SIE** COURSE NUMBER **565** EFFECTIVE SEMESTER **Spring 2016**

COURSE TITLE **Reasoning With Uncertainity in Spatial Information Systems**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☐ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☒ Other (specify) Hibernation of course

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Max Egenhofer, Director, SCIS	9/29/15	
College(s) Curriculum Committee Chair(s) [if applicable]		
Timothy M. Cole	10/6/15	TMC
Laura Arlesani	10/6/15	LA
College Dean(s)		
Emily Haddad, Dean, CLAS	10-6-15	
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

Reason for course modification:

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

PLACE IN HIBERNATION. COURSE HAS NOT BEEN TAUGHT IN SEVERAL YEARS BUT MAY BE TAUGHT AGAIN DEPENDING ON FUTURE COURSE LOADS AND STUDENT NEEDS.

SIE 565 - Reasoning With Uncertainty in Spatial Information Systems

Information systems and artificial intelligence approaches to uncertainty handling in spatial information systems. Typology of uncertainty: imprecision, inaccuracy and inconsistency. Representing and reasoning with spatial uncertainty in information systems. Logics of uncertainty, probabilistic and Bayesian approaches, Dempster-Shafer theory of evidence. Spatial vagueness. Handling conflicting information.

Prerequisites & Notes
SIE 451 or SIE 550, graduate standing or instructor permission.

Credits: 3

Please return the completed form with appropriate signatures and documentation to the Graduate School.
5775 Stodder Hall, Room 42
Orono, Maine 04469-5775

Course Proposal Guidelines available at http://umaine.edu/graduate/system/files/files/CourseGuidelines.pdf

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **Food Science and Human Nutrition**

COURSE DESIGNATOR **FSN** COURSE NUMBER **506** EFFECTIVE SEMESTER **Summer 2016**

COURSE TITLE **Nutritional Assessment**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☒ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☐ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s) M. Susan Erich/SFA	10-22-15	MSE
College(s) Curriculum Committee Chair(s) [If applicable]		
College Dean(s) E N Ashworth	11/6/15	ENA
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 1 (FOR NEW COURSE PROPOSALS):

Proposed Catalog Description (include designator, number, title, prerequisites, credit hours):

FSN 506- Nutritional Assessment.
Covers methods of evaluating the nutritional status of individuals or groups of people by dietary assessment and nutrition-related health indicators.
Prerequisites: FSN 410 and FSN 412, or permission.

Credits: 3

Components (type of course/used by Student Records for MaineStreet) – *Multiple selections are possible for courses with multiple non-graded components:*

☐ Applied Music ☐ Clinical ☐ Field Experience/Internship ☐ Research ☐ Studio
☐ Laboratory ☒ Lecture/Seminar ☐ Recitation ☐ Independent Study ☐ Thesis

Text(s) planned for use:

Krause's Food and the Nutrition Care Process 13th ed.

Course Instructor (include name, position, teaching load):

Mona Therrien, Lecturer,

Reason for new course:

This course was sunset in 2013 because there was no available faculty to teach this course. This is a valuable course for our graduate program. Offering this course as an online option will allow our dietetic interns, who may be in the field doing their internship, to complete this course.

Does the course addition require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?

◉ No. The department will not request additional resources for this course.

◯ Yes. Please list additional resources required and note how they will be funded or supported.

What other departments/programs are affected (e.g. course overlap, prerequisites)? Have affected departments/programs been consulted? Any concerns expressed? Please explain.

There are no other departments or programs affected.

How often will this course be offered? Will offering this course result in overload salary payments, either through the college or CED, either to the instructor of this course or to anyone else as a result of rearranging teaching assignments?

This course will be offered summer even years and will result in overload salary payments through CED.

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **School of Food and Agriculture**

COURSE DESIGNATOR **SFA** COURSE NUMBER **551** EFFECTIVE SEMESTER **Spring 2016**

COURSE TITLE **Infectious diseases and food safety- from plants to humans**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- [x] New Course
- [ ] New Course with Electronic Learning [1]
- [ ] Experimental

MODIFICATION (Check all that apply and complete Section 2):

- [ ] Designator Change
- [ ] Number Change
- [ ] Title Change
- [ ] Description Change
- [ ] Prerequisite Change
- [ ] Credit Change
- [ ] Cross Listing (must be at least 400-level) [2]
- [ ] Addition of Electronic Learning Component [1]
- [ ] Other (specify) _____

ELIMINATION:

- [ ] Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s) M. Susan Erich / SFA	10-3-15	MSE
College(s) Curriculum Committee Chair(s) [if applicable]		
College Dean(s) E N Ashworth	11/4/15	ENA.
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 1 (FOR NEW COURSE PROPOSALS):

Proposed Catalog Description (include designator, number, title, prerequisites, credit hours):

SFA 551 Infectious diseases and food safety – from plants to humans

Examines current concepts and trends in infectious disease biology, with a focus on enterobacterial human pathogens, plant pathogens and their impacts on one another. The nature of disease, the causal agents, mechanisms of transmission and epidemic, and strategies for management will be compared among humans and plants.

Prerequisites: One of the courses or equivalent: AVS 437, BMB 300, FSN 238, PSE457/557, PSE 469, or permission.

Components (type of course/used by Student Records for MaineStreet) – *Multiple selections are possible for courses with multiple non-graded components:*

☐ Applied Music	☐ Clinical	☐ Field Experience/Internship	☐ Research	☐ Studio
☐ Laboratory	☒ Lecture/Seminar	☐ Recitation	☐ Independent Study	☐ Thesis

Text(s) planned for use:

none

Course Instructor (include name, position, teaching load):

Jianjun (Jay) Hao, Assistant Professor, 30% teaching, also offers PSE 457/557 Plant Pathology and Advanced Plant Pathology

Reason for new course:

We wish to offer more courses, such as this one, that will be of broad interest to graduate students across the School of Food and Agriculture, including those in the areas of plant science, agriculture, food science, human nutrition, and animal science. SFA 551 might also be taken by graduate students in SBE and BMS. This topic is timely and important. The class will be synthetic in subject matter and appealing to graduate students in many disciplines.

Does the course addition require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?

◉ No. The department will not request additional resources for this course.

◯ Yes. Please list additional resources required and note how they will be funded or supported.

What other departments/programs are affected (e.g. course overlap, prerequisites)? Have affected departments/programs been consulted? Any concerns expressed? Please explain.

There are few courses with similar subject matter. We do not anticipate any concerns. This course is potentially beneficial to graduate students in other units and we expect to advertise it to them.

How often will this course be offered? Will offering this course result in overload salary payments, either through the college or CED, either to the instructor of this course or to anyone else as a result of rearranging teaching assignments?

It will be offered in alternate spring semesters (even years). There will be no overload payments. This is part of Dr. Hao's regular load.

THE UNIVERSITY OF MAINE

RECEIVED
NOV 04 2015
GRADUATE SCHOOL

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM
for Graduate Courses

GRADUATE PROGRAM/UNIT: Special Education

COURSE DESIGNATOR: SED | COURSE NUMBER: 585 | EFF. SEMESTER: Spr16

COURSE TITLE: Communication for Students with Autism Spectrum Disorders

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

_X_New Course
__ New Course with Electronic Learning Component [1]
__Experimental

MODIFICATION (Check all that apply and complete Section 2):

__Designator Change
__Number Change
__Title Change
__Description Change
__Prerequisite Change
__Credit Change
__Cross Listing (must be at least 400-level) [2]
X Addition of Electronic Learning Component [1]
__Other (specify)_____

ELIMINATION:

__Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s) James Antony	10-15-15	JA
College(s) Curriculum Committee Chair(s) [if applicable] Deborah Rooks-Ellis	10-30-15	Deborah L Rooks-Ellis
College Dean(s)	10/20/15	Susan Gardner
Dean and Associate Provost for Graduate Studies		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Dean and Associate Provost for Graduate Education.

SECTION 1 (FOR NEW COURSE PROPOSALS):

Proposed Catalog Description (include designator, number, title, prerequisites, credit hours):

SED 585_Communication for Students with Autism Spectrum Disorders
This course examines communication, including an overview of typical communication and language development, the difference in autism speech and language development, assessments of communication, augmentative communication supports, visual supports, and the interrelationships between communication and socialization. Students develop the awareness and the necessary skills to conduct informal observations of communication abilities to identify supports that match the individual's learning style. Students learn strategies to collaborate with teachers, family members and related professionals to increase communication. Using a combination of observation, practice sessions, lecture and project-based learning, students apply their knowledge of communication and supports across the autism spectrum. 3 credits.

Components (type of course/used by Student Records for MaineStreet) – *Multiple selections are possible for courses with multiple non-graded components:*

☐ Applied Music	☐ Clinical	☐ Field Experience/Internship	☐ Research	☐ Studio
☐ Laboratory	☒ Lecture/Seminar	☐ Recitation	☐ Independent Study	☐ Thesis

Text(s) planned for use:

- Hall, L. (2013). Autism spectrum disorders: From theory to practice. Pearson. ISBN: 9780132658096
- Prelock, P., & McCauley, R. (2012). Treatment of autism spectrum disorders. Brookes. ISBN: 9781598570533

Course Instructor (include name, position, teaching load):

Suzanne Bishop, Communication Sciences Disorder adjunct faculty
Deborah L. Rooks-Ellis, Ph.D., Special Education faculty, 2/2

Reason for new course:

This course is required as part of the 3-course sequence for the Graduate Certificate in Autism Spectrum Disorder and an elective for students enrolled in the special education masters program with a low incidence disabilities concentration. We have taught the course twice now and feel confident enough in the content to move forward with a new course proposal.

Does the course addition require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?

◉ No. The department will not request additional resources for this course.

○ Yes. Please list additional resources required and note how they will be funded or supported.

What other departments/programs are affected (e.g. course overlap, prerequisites)? Have affected departments/programs been consulted? Any concerns expressed? Please explain.

Special Education and CSD developed this course and CSD cross-lists the course when offered.

How often will this course be offered? Will offering this course result in overload salary payments, either through the college or CED, either to the instructor of this course or to anyone else as a result of rearranging teaching assignments?

This course is offered each spring as a required course of the Graduate Certificate in ASD rotation. The course is part of the regular faculty load or is taught by CSD adjunct, S. Bishop.

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT: **School of Earth and Climate Sciences**

COURSE DESIGNATOR: **ERS** COURSE NUMBER: **560** EFFECTIVE SEMESTER: **Spring 2016**

COURSE TITLE: **Marine Geology**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☒ Prerequisite Change
- ☐ Credit Change
- ☒ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☒ Other (specify) ERS 460

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign/Initials
Leader, Initiating Department/Unit(s) Scott E. Johnson	11-5-15	
College(s) Curriculum Committee Chair(s) [if applicable]		
College Dean(s) E N Ashworth	11-6-15	ENA
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

ERS 560 - Marine Geology

Topics include theories of the origin of the earth as a planet and the development of continents and ocean basins, morphology and structure of the sea floor, interpretation of geological and geophysical evidence relevant to the origin and evolution of major tectonic features of oceans. Students may not receive credit for both ERS 460 and ERS 560.

Prerequisites: Prerequisite: ERS 100, 101, 102, or 103

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

ERS 560 - Marine Geology

Topics include theories of the origin of the earth as a planet and the development of continents and ocean basins, morphology and structure of the sea floor, interpretation of geological and geophysical evidence relevant to the origin and evolution of major tectonic features of oceans. Students may not receive credit for both ERS 460 and ERS 560.

Prerequisites: Prerequisite: ERS 100, 101, 102, 103, or ERS/SMS 108

Reason for course modification:

ERS 108 was omitted from the prerequisites list by error. All introductory courses, including ERS/SMS 108 (Beaches and Coasts) provide adequate background information for students entering the course. Without ERS/SMS 108 listed as a prerequisite course, School of Marine Sciences students who wish to take ERS 560 are currently required to seek professor permission, which is always granted

SECTION 3 FOR COURSE ELIMINATIONS:

Reason for Elimination

Please return the completed form with appropriate signatures and documentation to the Graduate School,
5775 Stodder Hall, Room 42
Orono, Maine 04469-5775

Course Proposal Guidelines available at http://umaine.edu/graduate/system/files/files/CourseGuidelines.pdf

THE UNIVERSITY OF MAINE

NEW COURSE PROPOSAL/MODIFICATION/ELIMINATION FORM FOR GRADUATE COURSES

GRADUATE PROGRAM/UNIT **Master of Science in Teaching (MST)**

COURSE DESIGNATOR **SMT** COURSE NUMBER **507** EFFECTIVE SEMESTER **Spring 2016**

COURSE TITLE **Research-related Curriculum Development in Science and Mathematics**

REQUESTED ACTION:

NOTE: A complete syllabus is required for all new courses and for the addition of an electronic learning component [1] to an existing course.

NEW COURSE (check all that apply and complete Section 1):

- ☐ New Course
- ☐ New Course with Electronic Learning [1]
- ☐ Experimental

MODIFICATION (Check all that apply and complete Section 2):

- ☐ Designator Change
- ☐ Number Change
- ☒ Title Change
- ☒ Description Change
- ☐ Prerequisite Change
- ☐ Credit Change
- ☐ Cross Listing (must be at least 400-level) [2]
- ☐ Addition of Electronic Learning Component [1]
- ☐ Other (specify) _____

ELIMINATION:

- ☐ Course Elimination

ENDORSEMENTS (Print name)	Date	Sign Initials
Leader, Initiating Department/Unit(s)		
Susan R. McKay	9/15/15	SRM
College(s) Curriculum Committee Chair(s) (if applicable) Andrei Sleptchin	10/23/15	AS
College Dean(s)		
E N Ashworth	11/6/15	ENA
Graduate School		

1. If a course involves significant electronic access for the primary delivery of its content (more than 50%), the course proposal should specify faculty training/experience in use of technology and how the electronic delivery will be managed. Please consult with the Office of Distance Education for more information.
2. Courses cross-listed below 400-level require the permission of the Graduate School.

SECTION 2 (FOR COURSE MODIFICATIONS):

Current catalog description (include designator, number, title, prerequisites, credit hours):

SMT 507 – Research-related Curriculum Development in Science and Mathematics
Seminar for pre-service or in-service teachers who are currently participating in a research internship or who wish to use discipline-based education research to guide curricular innovation in their classrooms. Investigation and development of related research-based secondary science and mathematics curriculum and pedagogy.

Prerequisites, Corequisites & Notes
Permission. To be taken in conjunction with SMT 598, Sec.0001 (Jackson Laboratory Student Internship & Teaching Sabbatical)

Credits: 3

Proposed catalog description (include designator, number, title, prerequisites, credit hours):

SMT 507- Integrated Approaches in Biology Education

Applications of biology education research to the teaching of biology concepts and problem solving. Students will explore common student conceptual difficulties in biology, methods of assessment, and research-based instructional strategies.

Prerequisites, Corequisites & Notes
Permission.

Reason for course modification:

This course was taken in conjunction with SMT 598, Sec. 001 (Jackson Laboratory Student Internship & Teaching Sabbatical). The Jackson Laboratory Student Internship & Teaching Sabbatical program has now ended and this new course will be taught on the UMaine campus. The MST program currently offers courses in teaching physics, earth science, and mathematics. Having a course that focuses on biology education research will allow broader science training for future teachers. Dr Michelle Smith, assistant professor in the School of Biology and Ecology, will teach this course. Dr. Smith advises between 1-3 MST students every year and her research area is in biology education.

Course outline

Section 1: What leaning objectives are important for biology students?
Explore national standards: Next Generation Science Standards, Vision and Change etc.
Write learning goals
Research, reflect, and write about common student conceptual difficulties

Section 2: Assessment
Explore national assessment questions
Write assessment questions and collect data
Acquire expert feedback on assessment questions, what did you learn from experts?
What are other effective ways to assess students?

Section 3: Classroom activities
How can you engage students in the biology classroom?
What would a one-week unit look like for a course you would like to teach?
What does it mean to teach in an inquiry-based manner?

Please return the completed form with appropriate signatures and documentation to the Graduate School.
5775 Stodder Hall, Room 42
Orono, Maine 04469-5775

Course Proposal Guidelines available at http://umaine.edu/graduate/system/files/files/CourseGuidelines.pdf