The Graduate School

THE UNIVERSITY OF MAINE

5775 Stodder Hall, Room 42
Orono, Maine 04469-5775
Tel: 207.581.3291
Fax: 207.581.3232
umaine.edu/graduate

October 30, 2015

To: Curriculum Committee:
Scott Delcourt
Ali Abedi
Pat Burnes
Deborah Rooks-Ellis
Grant Miles
Xuan Chen
Deborah Rollins
Matthew Biddle

Fr: Jessica Ouellette, Administrative Support Supervisor

Re: **Curriculum Committee, November 3rd, 2015 Stodder Hall, Room #48**

The following courses will be presented on **Tuesday, November 3rd at 1:00 p.m.** in the Graduate School's Conference Room, 48 Stodder Hall.

1. 1:10-1:20 **COS 540**
   Dr. Phillip Dickens

2. 1:20-1:50 **SIE 503, 505, 507, 510, 512, 515, 516, 555, 557, 558, 559, 565, 570, 571, 590, 598, and 699**
   Dr. Max Egenhofer

3. 1:50-2:00 **SFA 672**
   Dr Stom Ohno

4. 2:00-2:10 **SMS 691**
   No presentation required

THE UNIVERSITY OF MAINE

RECEIVED
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
- [ ] 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 | 9/29/15 | |
| **College(s) Curriculum Committee Chair(s) [if applicable]** | | |
| Timothy Cole | 10/6/15 | TAC |
| Laura Arlesani | 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.

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?

COS 540: Computer Networking

**Course Description:** This course provides an introduction to the concepts, protocols, technologies, and principles of computer networking. It utilizes the Internet, which is the largest, most complex, and most transformative network ever created, as the primary vehicle for studying the fundamental concepts of computer networking. It uses a "top-down" approach to the study of the Internet, beginning with the "application layer", where applications such as the Web and HTTP, peer-to-peer applications, telephony, multiplayer online games, and social media reside. It then examines the services provided by lower layers of the Internet protocol stack that enable the development of such increasingly sophisticated applications.

**Prerequisites:** **COS 331 or equivalent**

**Place and Time:** TBD

**Instructor:** Phillip Dickens, Associate Professor,
School of Computer and Information Science,
327 Boardman Hall

**Email:** dickens@umcs.maine.edu

**Telephone:** 581-3967

**Office Hours:** Monday and Wednesday from 12:00 PM to 1:30 PM and by appointment.

**Teaching Assistant:** TBD

**TA Office Hours** TBD

**Textbook:** Computer Networking: A Top-Down Approach: International Edition, 6/E,
ISBN-13: 9780273768968

**Ada Notice:** If you have a disability for which you may be requesting an accommodation, please contact Disabilities Services, 121 East Annex, 581-2319, as early as possible in the term.

**Computer accounts:** All programming assignments will be evaluated on a Linux VM platform. If you do not have a personal computer on which the VM can be installed we will provide you with computer accounts on one of the school's servers.

**Course Management:** This course will use the Blackboard 9 Course Management System as its homepage. All class material, including the syllabus, homework assignments, project descriptions, copies of class slides, and course announcements will be maintained on this System.

URL: https://www.courses.maine.edu/webapps/portal/frameset.jsp

**Assignments:** Unless otherwise announced, all assignments, including written homework, programming assignments, project source code and supporting documentation, are to be submitted on Blackboard ONLY. The time by which the assignment must be uploaded to Blackboard will vary but will be specified.

**Course Workload:** The course workload will consist of programming projects, homework problems, in-class exercises, one preliminary exam and a final exam.

**Deadlines:** It is imperative to stay up to date with class material because most of the assignments, and certainly the projects, build upon one another. For this reason, no late work will be accepted!

**Course Grading:** Final grades will be determined based on the following components and weightings.

- Programming Projects: 50%
- One preliminary exam: 10%
- Final exam: 20%
- Homework Assignments: 10%
- In-class exercises 10%

**Other Class Policies:** Course attendance is expected but not required. However, you are responsible for any material covered and/or any announcements made during class time. Also, unless you miss class for legitimate reasons (e.g., illness, family emergency), you need to find out what happened from a classmate, not the instructor. Consistently coming in late to class is disruptive and should be avoided. Spending the class period surfing the web, talking to other students and/or sleeping is inconsistent with an atmosphere of student achievement and should be avoided.

**Academic Honesty:**

Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

**Student Learning Outcomes**

Students successfully completing this course will be able to:

- Compute important measurements of network state including available bandwidth, processing delay, queuing delay, propagation time, and traffic intensity.

- Implement a multi-threaded Web browser that can process HTTP commands and display jpeg, tiff, and other imaging formats.
- Compute the shortest path between a sender and receiver using algorithms such as the Link-State and Distance Vector Routing algorithms.
- Articulate and analyze the TCP congestion control mechanisms.
- Implement communication between two computers using both TCP and UDP.
- Implement a networking application.
- Compute expected network throughput in client/server and peer-to-peer networks.
- Interpret IPV4 addresses and determine the subnet to which a packet is being forwarded.

**Topics Covered**

**Internet protocols, access networks, packet/circuit switching, packet delay and loss, Traffic Intensity.**

**Application Layer:** Important networking applications including the Web, HTTP, Domain Name Service, peer-to-peer applications and socket programming.

**Transport Layer**: Networking using TCP and UDP, principals of reliable data transfer, congestion control mechanisms, and fairness between competing data flows

**Network Layer:** Routers, the Internet Protocol, routing and forwarding algorithms, and the Border Gateway Protocol.

**Link Layer:** Ethernet and link-level switching (if time allows).

**Tentative Course Schedule**

**Please see below**

**Course Schedule Disclaimer:**

In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

**Sexual Discrimination Reporting:**

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating**

**violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to the campus Office of Sexual Assault & Violence

| Week | Topics | Readings | Assignments | Due Dates |
|---|---|---|---|---|

Prevention or the Office of Equal Opportunity.

**If you want to talk in confidence** to someone about an experience of sexual discrimination, please contact these resources:

For *confidential resources on campus*: **Counseling Center: 207-581-1392** or **Cutler Health Center: at 207-581-4000**.

For *confidential resources off campus*: **Rape Response Services:** 1-800-310-0000 or **Spruce Run**: 1-800-863-9909.

**Other resources:** The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Office of Sexual Assault & Violence Prevention: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911**. Or see the OSAVP website for a complete list of services at http://www.umaine.edu/osavp/

**Tentative Course Schedule**

| | | | | |
|---|---|---|---|---|
| 1. 1/19-1/24 | Basic Concepts: Protocols; Internet edge/core; access networks; Packet/Circuit switching; delay, loss and throughput. | Chapter 1: 1 - 30 | Download Wireshark and complete Wireshark Lab 1 (page 78) | **1/26** |
| 2. 1/25-1/29 | Queuing delay and packet loss; traffic intensity; throughput; end-to-end delay; network layering; network security | Chapter 1: 31 - 65 | Problems P2, P5, P6, P10, P14, P18, P24, P25, P29, P31, P33 from Chapter 1. | 2/2 |
| 3. 2/1-2/5 | Principles of networking applications; the Web and HTTP | Chapter 2: 84-119 | Programming Project Assigned: Simple Web server | 2/9 |
| 4. 2/8-2/12 | HTTP; Domain Name System (DNS) | Chapter 2: 120-140 | Programming Project Assigned: Multithreaded Web Server | 2/23 |
| 4. 2/15-2/19 | DNS; Peer-to-peer applications; P2P file transfer | Chapter 2: 140-160 | Problems P4, P5, P7, P18 – P20, P22-26, P29 | 3/1 |
| 5. 2/22-2/26 | Distributed hash tables. Socket programming (TCP) | Chapter 2: 160-180 | | |
| 6. 2/29-3/4 | TCP and Exam1 | | Exam1: 3/3 | |
| 7. 3/7-3/11 | Spring Break | | | |
| 8. 3/14-3/18 | Spring Break | | | |
| 9. 3/21-3/25 | Transport layer services, Unreliable Data Transfer (UDP) | Chapter 3: 186-206, 230-258. | Programming Project Assignment: High Speed data transfer protocol | 4/12 |
| 10. 3/28-4/1 | Reliable Data Transfer (TCP) | Chapter 3: 260-280. RFP 5681 | Problems P26, P28, P32, P39-40, P45, P52 | 4/14 |
| 11. 4/4-4/8 | Congestion Control and fairness | Paper on High Speed TCP | Wireshark Lab on TCP | 4/14 |
| 12. 4/11-4/15 | Network service models, datagram networks | Chapter 4: 305-330 | | |
| 13. 4/18-4/22 | Routers, queuing, Internet Protocol | Chapter 4: 330-360 | P10, P26, P27-28, P31, P37 | 4/26 |
| 14. 4/25-4/29 | IP Addressing, Routing algorithms | Chapter 4: 360-400 | Wireshark Lab IP Protocol | 5/3 |
| 15. 5/2-5/6 | Ethernet Protocol | Chapter 5: 469-486 | | 5/6: Final submission date for all assigned work. |
| 16. 5/9-5/13 | Exam Week. | | Final Exam | |

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

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: **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

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

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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] | | |
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| **College Dean(s)** | | |
| **Emily Haddad, Dean, CLAS** | 10-6-15 | |
| **Graduate School** | | |
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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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# 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 |
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| **Leader, Initiating Department/Unit(s)** | | |
| **Max Egenhofer, Director, SCIS** | 9/29/15 | |
| **College(s) Curriculum Committee Chair(s)** [if applicable] | | |
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| 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 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

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 **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 Arlesani | 10/16/15 | 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

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 **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 Reallty: 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.
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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 **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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# 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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# 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** | 10-6-15 | |
| **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 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

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 **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 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 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

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

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

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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 **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.
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Orono, Maine 04469-5775

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

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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: **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 | |
| Laura Alaesani | 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 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

Please return the completed form with appropriate signatures and documentation to the Graduate School.
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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: **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 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 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.
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 **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 | 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 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 ~~taken more than once~~ 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.
5775 Stodder Hall, Room 42
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 Ardesani | 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

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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: **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 | |
| **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.

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

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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.

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.

**SFA 672**
**Dynamic Technical Presentations**
**Spring 2016**
**1 Credit Hour**

**Instructor:** Tsutomu Ohno
**Office:** 108 Deering Hall
**Phone:** 1-2975 **e-mail:** ohno@maine.edu

**Room: TBD**
**Time: Wednesday 12:10 - 1 PM**

**Office Hours:** Anytime I am free in my office or by appointment.

**Prerequisites:**

Must have completed FSN 571 or by permission.

**Required Text:**

None. All assigned readings are available as pdf files through the course Blackboard site.

**Course Description:**

Presentation of research results and literature information. May be repeated for credit.

**Course Goals:**

This course is based on the presentation of scientific research that is of interest to you. This could include your own research results or could be research from the literature on a topic of interest to you. Presentation of your work to your peers is a very important part of the scientific process, and this class is designed to provide experience developing and presenting an oral presentation to your peers. The manner in which your work is presented, and discussed by your peers, plays a strong role in how it is viewed by the scientific community. We will be using the Pecha Kucha format which consists of 20 slides shown for 20 seconds each. It is a contemporary presentation format that is becoming increasingly common in creative and academic fields. The first half of the semester (prior to spring break), will be devoted to the preparation of the Pecha Kucha. We will work in peer groups to obtain feedback throughout the preparation: script development and graphic selection.

After spring break, we will have "practice" in-class Pecha Kucha to obtain peer feedback from the entire class. We will have a presentation day which will be open to all members of the School of Food and Agriculture, as well as others, to present your final Pecha Kucha. We will have a short question and answer period after each presentation, allowing participation by the audience.

Attendance and Participation:

Each student is expected to attend and participate in all class meetings. If you cannot attend, please contact me prior to class.

Introduction of Speaker and Moderation of Discussion:

Each student is responsible for introducing a speaker. The introduction should give credibility to the speaker and include information about their academic/career background, their research project, when they started, their advisor and the title of their presentation.

Title and Abstract:

The title and abstract of a presentation are what your audience will see first and often the impressions from these sections will flavor their overall view of the presentation. It is important to have a title and a one-paragraph abstract summary that conveys to the audience the content of the presentation and the important points to be made in the presentation.

Pecha Kucha Presentation:

Pecha Kucha presentations is an ideal format for introducing and highlighting the most important aspects of a research topic to a diverse audience.

**Learning Outcomes:**

After successful completion of the course, students will be able to:

1. Demonstrate proficiency at using PowerPoint for oral scientific presentations.
2. Select and organize the most important aspects of a research topic.
3. Present scientific topics to a diverse audience.

**Grading:**

Total number of points that can be earned is 100. The breakdown is as follows:

| | |
|---|---|
| Practice Pecha Kucha: | 25 points |
| Final presentation: | 75 points |

**Grading Determination:**

90+ points = A  80-89 = B  70-79 = C  60-69 = D  0-59 points = F

**Course Schedule:**

**Course Schedule Disclaimer (Disruption Clause):** In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

| | |
|---|---|
| January 20 | Introduction to course |
| January 27 | No class meeting **[Title due by email]** |
| February 3 | No class meeting |
| February 10 | In class peer group work on presentation. |
| February 17 | In class peer group work on presentation. |
| February 24 | In class peer group work on presentation. |
| March 2 | In class peer group work on presentation. |

Spring Break

| | |
|---|---|
| March 23 | In class practice presentation #1 |
| March 30 | In class practice presentation #2 |
| April 6 | In class practice presentation #3 |
| April 13 | In class practice presentation #4 |
| April 20 | In class practice presentation #5 |
| April 27 | SFA Pecha Kucha Presentation Day |
| May 4 | Maine Day |

**Students with Disabilities Statement:**

If you have a disability for which you may be requesting an accommodation, please contact Disability Services in East Annex, 581-2319, as early as possible in the term.

**Sexual Discrimination Reporting**

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to the campus Office of Sexual Assault & Violence Prevention or the Office of Equal Opportunity.

**If you want to talk in confidence** to someone about an experience of sexual discrimination, please contact these resources:

For *confidential resources on campus*: **Counseling Center: 207-581-1392** or **Cutler Health Center: at 207-581-4000**.

For *confidential resources off campus*: **Rape Response Services:** 1-800-310-0000 or **Spruce Run**: 1-800-863-9909.

**Other resources:** The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Office of Sexual Assault & Violence Prevention: 207-581-1406**, **Office of Community Standards: 207-581-1409**, **University of Maine Police: 207-581-4040 or 911**. Or see the OSAVP website for a complete list of services at http://www.umaine.edu/osavp/

**Academic Honesty Statement**

Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or

for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

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.
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