The University of Michigan
College of Engineering
Curriculum Committee

Agenda
October 27, 2009
1:30-3:00 p.m.
GM Room Fourth Floor
Lurie Engineering Center

1. Approval of Minutes from 08-29-09
2. Course Approvals
3. Commission on Undergraduate Engineering Education—Next Steps—James Holloway
4. Changes to Rackham Degree Offerings in AOSS

University of Michigan
College of Engineering
Curriculum Committee Meeting
Tuesday September 29, 2009
1:00-3:00 p.m.
Room 249 Chrysler Center
Minutes

Marina Epelman called the meeting to order at 1:40 p.m.

Members Present: M. Epelman, J. Barker, M. Lapp, E. Larsen, L. Meadows, S. Montgomery, T. Perakis, R. Robertson, F. Terry, F. Ward

Members Absent: L. Bernal, J. Everett, E. Gulari, J. Holloway, A. Hunt, Kannatey-Asibu , J. Pan

The minutes of the last meeting (September 15, 2009) were approved

Course Approval Forms

Marina Epelman called for a motion to approve the following courses. This was moved and seconded.

These Courses Were Approved

The Committee asked for background information, syllabus, etc. for the following two courses at the previous (9-15-09) meeting and were revised and brought back to this meeting.:
MSE 517   New Course
MSE 555   New Course

Adjournment: Motion to adjourn was made and seconded
Motion carried (approved)

Next Meeting **October 27, 2009** GM Room – Fourth Floor LEC

COURSE APPROVAL FORM

For October 27, 2009 CoE CC Meeting

EECS 402   New Course

ENGR 407   Modification – Adding X-Listing with SI 509

Form Number | 2069

Date 10/19/2009

Effective Term Winter 2010

Action Requested
- ◉ New Course
- ○ Modification of Existing Course
- ○ Deletion of Course

Complete the following sections:
New Courses - B & C completely
Modifications - A modified information, B & C completely
Deletions - A & C completely

Course Offer Freq
- ☒ Indefinitely
- ☐ One term only

A. CURRENT LISTING

Home Department	Course Number

Cross Listed Course Information

Course Title

| TITLE ABBRE-VIATION | Time Sched Max = 19 Spaces | |
| | Transcript Max = 20 Spaces | |

Course Description

B. REQUESTED LISTING

Home Department	Course Number
EECS Elec Engin & Computer Sci	402

Cross Listed Course Information

Course Title

Computer Programming For Non-Majors

| TITLE ABBRE-VIATION | Time Sched Max = 19 Spaces | Prog For Non-Majors |
| | Transcript Max = 20 Spaces | Prog For Non-Majors |

Course Description for Official Publication (Max = 50 words)

Learn methods for problem decomposition and program design. This consists of analysis, decomposition, and design by part. Includes hands-on experience with one or more current programming languages to solve real-world problems. Intended primarily for senior undergraduates and graduate students from non-computing disciplines; no credit awarded to EECS majors.

PROGRAM OUTCOMES: ☐ a ☐ c ☐ e ☐ g ☐ i ☐ k ☐ b ☐ d ☐ f ☐ h ☐ j

Degree Requirements ○ Degree Requirement ○ Free Elective ○ Other ○ Core Course ○ Tech Elective

Prereq
○ Enforced
○ Advised

Credit Restrictions

PROGRAM OUTCOMES: ☐ a ☐ c ☐ e ☐ g ☐ i ☐ k ☐ b ☐ d ☐ f ☐ h ☐ j

Degree Requirements ○ Degree Requirement ○ Free Elective ◉ Other ○ Core Course ○ Tech Elective

Prereq   None
○ Enforced
○ Advised

Credit Restrictions   May not be taken for credit with either EECS 280 or EECS 282.

Level of Credit
☐ Undergrad only ☐ Ugrad or Rckhm Grad ☐ R	Credit Hours Min Max	Contact Hrs/Wk
☐ Rackham Grad ☐ Ugrad or Non-Rckhm Grad		Number of Wks
☐ Non-Rckhm Grad ☐ All Credit types		

Level of Credit
☐ Undergrad only ☐ Ugrad or Rckhm Grad ☐ I	Credit Hours Min Max	Contact Hrs/Wk 3
☐ Rackham Grad ☐ Ugrad or Non-Rckhm Grad	3 3	Number of Wks 14
☐ Non-Rckhm Grad ☒ All Credit types		

C.

Repeatability (Indi Research, Dir. Study, Dissertation: Is this course repeatable? ○ Yes ○ No   Max Hours? ___   Max Times? ___   Can it be repeated in the same term? ○ Yes ◉ No

Class Type(s)
- ☒ Lec ☐ Sem ☐ Dis ☐ Other
- ☐ Rec ☐ Lab ☐ Ind

Grading
- ☒ A-E
- ☐ CR/NC
- ☐ P/F
- ☐ S/U

Location
- ☒ Ann Arbor
- ☐ Biological Station
- ☐ Camp Davis
- ☐ Extension

Graded Section
- ☒ Lec ☐ Sem ☐ Dis ☐ Other
- ☐ Rec ☐ Lab ☐ Ind

Course Is Y Graded ☐

Cognizant Faculty Member: Andrew Morgan   **Title** Adj. Lecturer

Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty

Approval Info
- ☐ Curriculum Comm.
- ☐ Faculty
- ☐ Cross listed Unit 1
- ☐ Cross listed Unit 2

Approved by Name

Approved Date

Submitted By: ☐ Home Dept. ☐ Cross-listed Dept.
Name, Department   Signature

Home Dept. EECS

Cross-listed Dept(s).

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SUPPORTING STATEMENT

For several years during Winter term, Andrew Morgan has taught a "one-time" course designated as a section of EECS498. The purpose of this course was to teach computer programming skills to students who are not in disciplines that typically teach programming, but find they need these skills during their graduate school research and/or careers. Initially, the course was developed after discussions with the Biostatistics and Bioinformatics departments. Since then, students from a wider range of departments have attended the course. EECS498 has been very successful and has received strong praise from both students and chairs of departments that have benefitted most. Due to the continued success and demand for the course, we are proposing to make this course a permanent offering in Winter terms.

EECS 402 would be available for credit to students in a variety of disciplines, both undergraduate and graduate. The course would continue to be taught by Andrew Morgan, an Adjunct Lecturer, who has been teaching in this capacity since 2000. Andrew can be reached at morgana@eecs.umich.edu for any necessary additional information.

Are any special resources or facilities required for this course?   ☐ Yes ☐ No

Detail the Special requirements

The University of Michigan, Ann Arbor
EECS498 W09 Course Webpage
C++ Programming For Graduate Students

Instructor:	Andrew Morgan
Email:	morgana@eecs.umich.edu
	Note: Please put EECS498 in the subject line
Course Website:	http://www.eecs.umich.edu/~morgana/eecs498_w09/index.html

EECS498 W09 Syllabus You are expected to read and fully understand all policies described in the syllabus. Please take the time to read it from beginning to end.
EECS498 W09 Course Calendar
Andrew's C++ reference page, with many example programs
A quick "how-to" on using vi I whipped up

Project Links

E-Mail morgana@eecs.umich.edu for help on projects, specification clarifications, etc.

Click here for detailed instructions on how to submit your projects

Project #1 Specifications
Project #2 Specifications
Project #3 Specifications
Project #4 Specifications
Project #5 Specifications

Lecture Notes

Other Lecture Topics

- Compiling and Running 2 Per -- 3 Per -- 6 Per

Print-able Lecture Slides

1. Basics and Flow 2 Per -- 3 Per -- 6 Per
2. Functions and Parameters 2 Per -- 3 Per -- 6 Per
3. Functions and Memory 2 Per -- 3 Per -- 6 Per
4. Design, Testing, and Debugging 2 Per -- 3 Per -- 6 Per
5. Arrays 2 Per -- 3 Per -- 6 Per

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6. Intro to OOP 2 Per -- 3 Per -- 6 Per
7. Sorting Arrays 2 Per -- 3 Per -- 6 Per
8. Streams and Stream States 2 Per -- 3 Per -- 6 Per
9. Multiple Source Files and Make 2 Per -- 3 Per -- 6 Per
10. Constructors and Destructors 2 Per -- 3 Per -- 6 Per
11. Misc. Class Topics 2 Per -- 3 Per -- 6 Per
12. Pointers and Dynamic Allocation 2 Per -- 3 Per -- 6 Per
13. Randomness and Simulations 2 Per -- 3 Per -- 6 Per
14. Operator Overloading 2 Per -- 3 Per -- 6 Per
15. The This Pointer and Friends 2 Per -- 3 Per -- 6 Per
16. Linked Data Structures 2 Per -- 3 Per -- 6 Per
17. Templates 2 Per -- 3 Per -- 6 Per
18. Using the STL 2 Per -- 3 Per -- 6 Per
19. Strings 2 Per -- 3 Per -- 6 Per
20. String Streams 2 Per -- 3 Per -- 6 Per
21. Revisit Copy Ctors and Dtors 2 Per -- 3 Per -- 6 Per
22. Recursion 2 Per -- 3 Per -- 6 Per
23. Exceptions 2 Per -- 3 Per -- 6 Per
24. Misc. Topics 2 Per -- 3 Per -- 6 Per
25. Inheritance 2 Per -- 3 Per -- 6 Per
26. Polymorphism 2 Per -- 3 Per -- 6 Per
27. Intro to Java 1 Per -- 2 Per -- 3 Per -- 6 Per
28. Intro to PERL 2 Per -- 3 Per -- 6 Per

Form Number | 2067

Date 10/12/2009

Action Requested
- ○ New Course
- ● Modification of Existing Course
- ○ Deletion of Course

Complete the following sections:
New Courses - B & C completely
Modifications - A modified information, B & C completely
Deletions - A & C completely

Effective Term

Course Offer Freq
- ☒ Indefinitely
- ☐ One term only

A. CURRENT LISTING

Home Department	Course Number
ENGR	407

Cross Listed Course Information

[x]

Course Title

| TITLE ABBRE-VIATION | Time Sched Max = 19 Spaces |
| | Transcript Max = 20 Spaces |

Course Description

B. REQUESTED LISTING

Home Department	Course Number
ENGR Engineering	407

Cross Listed Course Information

SI   509

Course Title

Distinguished Innovator Speaker Series

| TITLE ABBRE-VIATION | Time Sched Max = 19 Spaces |
| | Transcript Max = 20 Spaces |

Course Description for Official Publication (Max = 50 words)

This seminar is designed to expose students to entrepreneurship in engineering through interaction with business leaders, venture capitalists, attorneys, and individuals involved in emerging business models, new venture creation, and technology commercialization. Guest speakers will share knowledge on the latest, most diverse practices on legal, financial, and other management issues.

PROGRAM OUTCOMES: ☐ a ☐ c ☐ e ☐ g ☐ i ☐ k / ☐ b ☐ d ☐ f ☐ h ☐ j

Degree Requirements: ○ Degree Requirement ○ Free Elective ○ Other / ○ Core Course ○ Tech Elective

PROGRAM OUTCOMES: ☐ a ☐ c ☐ e ☐ g ☒ i ☐ k / ☐ b ☐ d ☒ f ☒ h ☒ j

Degree Requirements: ○ Degree Requirement ● Free Elective ○ Other / ○ Core Course ○ Tech Elective

Prereq
- ○ Enforced
- ○ Advised

Prereq
- ○ Enforced
- ○ Advised

Credit Restrictions

Credit Restrictions

Level of Credit

Level of Credit	Credit Hours Min Max	Contact Hrs/Wk
☐ Undergrad only ☐ Ugrad or Non-Rckhm Grad		Number of Wks
☐ Rackham Grad ☐ All Credit types		
☐ Non-Rckhm Grad ☐ Rckhm Grad w/add'l Work		
☐ Ugrad or Rckhm Grad		

Level of Credit

Level of Credit	Credit Hours Min / Max	Contact Hrs/Wk 1
☐ Undergrad only ☐ Ugrad or Non-Rckhm Grad	1 / 1	Number of Wks 14
☐ Rackham Grad ☒ All Credit types		
☐ Non-Rckhm Grad ☐ Rckhm Grad w/add'l Work		
☐ Ugrad or Rckhm Grad		

C.

Repeatability (Indi Research, Dir. Study, Dissertation: Is this course repeatable? ● Yes ○ No   Max Hours? 1   Max Times? 3   Can it be repeated in the same term? ○ Yes ● No

Class Type(s)
- ☐ Lec ☒ Sem ☐ Dis ☐ Other ___
- ☐ Rec ☐ Lab ☐ Ind

Grading
- ☐ A-E
- ☐ CR/NC
- ☒ P/F
- ☐ S/U
- Course Is Y Graded ☐

Location
- ☒ Ann Arbor
- ☐ Biological Station
- ☐ Camp Davis
- ☐ Extension

Graded Section
- ☐ Lec ☒ Sem ☐ Dis ☐ Other ___
- ☐ Rec ☐ Lab ☐ Ind

Cognizant Faculty Member: Thomas Zurbuchen
Title: Research Professor

Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty

Approval Info

	Approved by Name	Approved Date
☐ Curriculum Comm.		
☐ Faculty		
☐ Cross listed Unit 1		10/14/09
☐ Cross listed Unit 2		

Submitted By: ☒ Home Dept. ☐ Cross-listed Dept.
Name, Department   Signature

Home Dept. Engineering

Cross-listed Dept(s). SI

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SUPPORTING STATEMENT

Asking to Cross-List this course with School of Information 509

Are any special resources or facilities required for this course?   ☐ Yes   ☐ No

Detail the Special requirements

DR. MICHAEL W. LIEMOHN

ASSOCIATE PROFESSOR
ATMOSPERHIC, OCEANIC, AND SPACE SCIENCES

UNIVERSITY OF MICHIGAN
COLLEGE OF ENGINEERING

Date: October 20, 2009

To: College of Engineering Curriculum Committee

From: Michael Liemohn, AOSS Dept Graduate Program Chair

Re: Changes to Rackham degree offerings in AOSS

Dear Committee:

AOSS is requesting approval for a change in the Rackham MS and PhD degree offerings from this department. Currently, we have 4 PhD programs and 3 MS programs through Rackham. The proposed changes are meant to consolidate our degree programs. The AOSS faculty unanimously voted to approve these changes.

Proposed changes:

Existing Rackham PhD degrees and how they should be changed:
-- Atmospheric and Space Sciences
        Change the name to: Atmospheric, Oceanic, and Space Sciences

-- Electrical Engineering and Atmospheric, Oceanic, and Space Sciences
        Remove from the books (students will be in the AOSS PhD program)

-- Atmospheric, Oceanic, and Space Sciences: Oceanography: Physical
        Remove from the books (students will be in the AOSS PhD program)

-- Space and Planetary Physics (joint with Physics)
        Keep as is

Existing Rackham MS degrees and how they should be changed:
-- Atmospheric and Space Sciences
        Change the name to: Atmospheric, Oceanic, and Space Sciences

-- Atmospheric and Space Sciences SGUS
        Change the name to: Atmospheric, Oceanic, and Space Sciences SGUS

-- Atmospheric, Oceanic, and Space Sciences: Oceanography: Physical
        Remove from the books (students will be in the AOSS MS program)

1436 SPACE RESEARCH BUILDING
2455 HAYWARD STREET
ANN ARBOR, MI 48109-2143

Voice: 734 763-6229
Fax: 734 647-3083
e-mail: liemohn@umich.edu

AOSS will keep the Space Engineering M-Eng degree, which is not a Rackham program but belongs solely to CoE.

History and Rationale:

We would like to have a single MS and PhD degree for our department. This is the reason for removing the Physical Oceanography MS/PhD degrees and combining the name with our other MS/PhD degrees in Atmospheric and Space Sciences. The oceanography research that we conduct in AOSS is integrated with our atmospheric climate research, and there is no need for distinction between these degree programs. Additionally, we were not treating the oceanography students differently from the atmospheric sciences PhD students in terms of coursework and qualifying exam requirements. It is felt that the oceanography degree is unnecessary as a stand-alone program.

Regarding the joint EE and AOSS degree program, there are typically only one or two students in this program at any one time. The students within it were, in terms of coursework and qualifying exam requirements, treated identically to our other atmospheric or space science PhD students. Like the oceanography degree, it was a redundant degree program to our existing "regular" PhD program.

There is enough momentum and interest to keep the Space and Planetary Physics program in place. There are members of both the Physics and AOSS departments that are enthusiastic about promoting and continuing this joint degree. It is substantially different from our "regular" degree offering in that the students take at least 40% of their coursework from Physics rather than AOSS.

A separate issue is which department gets credit for the students in these degree programs. Of particular interest is the joint Space and Planetary Physics degree, which was being credited to "Rackham." That is, neither LS&A/Physics nor CoE/AOSS were receiving any credit for the existence of these students (in terms of headcount). Because the S&PP PhD students invariably are conducting research with AOSS faculty, we have petitioned Rackham to change this designation and have the S&PP students credited to AOSS.