

ACADEMIC AFFAIRS COUNCIL

AGENDA ITEM: 3.B (2)

DATE: April 3, 2013

SUBJECT: Course Modifications – SDSM&T

South Dakota School of Mines and Technology has submitted the following course requests. These have been reviewed by the system Vice President for Academic Affairs. Upon approval, the proposals will move forward to the Executive Director for consideration and be reported on the Interim Actions report for the May Board meeting.

New Course Requests

- 1) MATH 443/543 Data Analysis
- 2) MATH 452 Advanced Studies in Mathematics

Revised Course Requests: Common Courses

- 1) MES 637 Organic Photovoltaics

RECOMMENDED ACTION

Approve, move forward to the Executive Director.

SOUTH DAKOTA BOARD OF REGENTS
New Course Request

SDSM&T	Mathematics & Computer Science	Duane Hrcir	02/15/13
Institution	Division/Department	Institutional Approval Signature	Date

Section 1. Course Title and Description

If the course contains a lecture and laboratory component, identify both the lecture and laboratory numbers (xxx and xxxL) and credit hours associated with each. Provide the complete description as it will appear in the system common or unique database, including pre-requisites, co-requisites, and registration restrictions.

Prefix & No.	Course Title	Credits
MATH 443/543	Data Analysis	(3-0) 3

Course Description: Accessing, validating, processing, extracting, visualizing and presenting data. Exposure to managing data in a relational database management system. Looking for underlying structure in data using data reduction techniques (e.g. multidimensional scaling, principal components analysis) and, more generally, unsupervised learning techniques (e.g. clustering). Prediction using supervised learning techniques such as discriminant analysis, logistic regression and decision trees. Software may include R and some version of SQL. Students in Math 543 will be held to a higher standard than students enrolled in Math 443.

Prerequisites: Math 225 or permission of instructor

Section 2. Review of Course

Will this be a common or unique course? (select the appropriate option below)

This course will be a unique course. (Go to Section 3.)

This course will be a common course. (Complete below, then go to Section 3.)

Indicate universities that are proposing this common course:

BHSU DSU NSU SDSMT SDSU USD

Section 3. Other Course Information

1. Are there instructional staffing impacts?

No. Replacement of Math 463 Scientific Computing, 3 cr. which is
(prefix, number, name of course, credits)

being deleted. Effective date of deletion: August 1, 2013

 No, schedule management. Explain:

 Yes. Specify:

2. Existing program in which course will be offered: Applied and Computational Mathematics

3. Proposed instructional method: R - Lecture
 (may be found at <http://www.sdbor.edu/services/academics/AAC/guidelines.htm>)

Provide a brief justification: This is compatible with the other courses in the curriculum and with the national standard practiced in the discipline.

4. Proposed primary delivery: Face to Face (001)
 (may be found at <http://www.sdbor.edu/services/academics/AAC/guidelines.htm>)

5. Term in which change will be effective: Fall 2013

6. Can this course be repeated for additional credit?
 Yes, total credit limit: X No.

7. Will the grade for this course be limited to S/U (pass/fail)? Yes X No

8. Will section enrollments be capped?
X Yes, maximum per section 35 No

9. Will this course be equated (i.e. considered the same course for degree completion) with any other unique or common course in the course database? Yes X No

If yes, indicate the course(s) to which it will be equated.

10. Is this prefix already approved for your university? X Yes No

If no, provide a brief justification:

Section 4. To be completed by Academic Affairs

1. University department code: MMATH

2. Proposed CIP code: 27.0101

Is this a new CIP code for this university? Yes X No

NEW COURSE REQUEST
Supporting Justification for On-Campus Review

Dr. Kyle Caudle		
Request Originator	Signature	Date
Dr. Kyle Riley		
Department Chair	Signature	Date
School/College Dean	Signature	Date

1. Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.

This class is welcome addition to the program since many of our majors enter the workforce in jobs that are focus on data analysis. Moreover, many other majors on campus are becoming more reliant on data analysis.

2. Note whether this course is: X Required Elective

3. In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?

None

4. If this will be a dual listed course, indicate how the distinction between the two levels will be made.

Students in Math 543 will be held to a higher standard than students enrolled in Math 443.

5. Desired section size 25

6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).

Dr. Kyle Caudle, Assistant Professor, PhD in Computational Statistics
Dr. Roger Johnson, Professor, PhD in Mathematics

7. Note whether adequate facilities are available and list any special equipment that will be needed for the course.

Facilities are adequate

8. Note whether adequate library and media support are available for the course.

Library holdings and media support are adequate

9. Will the new course duplicate courses currently being offered on this campus?

 Yes X No

If yes, provide justification.

10. If this course may be offered for variable credit, explain how the amount of credit at each offering is to be determined.

Not applicable

11. Add any additional comments that will aid in the evaluation of this request.

SOUTH DAKOTA BOARD OF REGENTS
New Course Request

SDSM&T	Math & Computer Science	Duane Hrcir	02/12/13
Institution	Division/Department	Institutional Approval Signature	Date

Section 1. Course Title and Description

If the course contains a lecture and laboratory component, identify both the lecture and laboratory numbers (xxx and xxxL) and credit hours associated with each. Provide the complete description as it will appear in the system common or unique database, including pre-requisites, co-requisites, and registration restrictions.

Prefix & No.	Course Title	Credits
Math 452	Advanced Studies in Mathematics	(3-0) 3

Course Description: This course is a capstone experience where students will enhance their mathematics background on selected topics. One of the goals of this course is to foster the ability to learn advanced mathematics and also learn to apply the use of technology in the study of mathematics. Prerequisites: Math 225 or permission of instructor.

Section 2. Review of Course

Will this be a common or unique course? (select the appropriate option below)

This course will be a unique course. (Go to Section 3.)

This course will be a common course. (Complete below, then go to Section 3.)

Indicate universities that are proposing this common course:

BHSU DSU NSU SDSMT SDSU USD

Section 3. Other Course Information

1. Are there instructional staffing impacts?

No. Replacement of Math 431, Dynamical Systems, 3 cr. which is
(prefix, number, name of course, credits)
being deleted. Effective date of deletion: August 1, 2013

No, schedule management. Explain:

_____ Yes. Specify:

2. Existing program in which course will be offered: Applied and Computational Mathematics3. Proposed instructional method: R - Lecture
(may be found at <http://www.sdbor.edu/services/academics/AAC/guidelines.htm>)Provide a brief justification: This is compatible with the other courses in the curriculum ar
with the national standard practiced in the discipline.4. Proposed primary delivery: Face to Face (001)
(may be found at <http://www.sdbor.edu/services/academics/AAC/guidelines.htm>)5. Term in which change will be effective: Fall 20136. Can this course be repeated for additional credit?
_____ Yes, total credit limit: _____ X No.7. Will the grade for this course be limited to S/U (pass/fail)? _____ Yes _____ X No8. Will section enrollments be capped?
X Yes, maximum per section 35 _____ No9. Will this course be equated (i.e. considered the same course for degree completion) with any
other unique or common course in the course database? _____ Yes _____ X NoIf yes, indicate the course(s) to which it will be equated.
_____10. Is this prefix already approved for your university? _____ X Yes _____ No

If no, provide a brief justification:

Section 4. To be completed by Academic Affairs1. University department code: MMATH2. Proposed CIP code: 27.0101Is this a new CIP code for this university? _____ Yes _____ X No

NEW COURSE REQUEST

Supporting Justification for On-Campus Review

Kyle Riley		
Request Originator	Signature	Date
Kyle Riley		
Department Chair	Signature	Date
School/College Dean	Signature	Date

1. Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.

This capstone experience will be a better match for the needs of our program in Applied and Computational Mathematics. We have found there was often too much overlap in content between our Dynamical Systems class and our Mathematical Modeling course. This capstone structure will allow us to focus more on the higher learning skills that we seek to foster in our majors.

2. Note whether this course is: X Required Elective

3. In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?

None

4. If this will be a dual listed course, indicate how the distinction between the two levels will be made.

Not applicable

5. Desired section size 25

6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).

Dr. Karen Braman, Associate Professor, PhD Mathematics
 Dr. Kyle Caudle, Assistant Professor, PhD Computational Statistics
 Dr. Brent Deschamp, Assistant Professor, PhD Mathematics
 Dr. Patrick Fleming, Assistant Professor, PhD Mathematics
 Dr. Martha Garlick, Assistant Professor, PhD Mathematics
 Dr. Roger Johnson, Professor, PhD Mathematics
 Dr. Travis Kowalski, Associate Professor, PhD Mathematics
 Dr. Donald Teets, Professor, D.A. Mathematics

7. Note whether adequate facilities are available and list any special equipment that will be needed for the course.

Facilities are adequate

8. Note whether adequate library and media support are available for the course.

Library and media support is adequate

9. Will the new course duplicate courses currently being offered on this campus?

 Yes X No

If yes, provide justification.

10. If this course may be offered for variable credit, explain how the amount of credit at each offering is to be determined.

Not applicable

11. Add any additional comments that will aid in the evaluation of this request.

SOUTH DAKOTA BOARD OF REGENTS
Revised Course Request: Common Course

SDSU Institution	ENG/SEECs Division/Department	Institutional Approval Signature	Date
David Galipeau Originator	Steve Hietpas Department Chair	Lewis Brown Dean's Approval Signature	8/10/12 Date
SDSMT Institution	MINT Division/Department	Jon J. Kellar Institutional Approval Signature	11/30/12 Date

Indicate (X) the universities that offer the common course. SDSMT SDSU

Section 1. Course Title and Description

Prefix & No.	Title	Credit Hours
EE/MES 637	Organic Photovoltaics	3

Organic photovoltaic provides a variety of interesting and new properties which facilitate solar energy utilization. The objectives of this course are to introduce material properties of polymers, small molecules, dyes, and nanomaterials for photovoltaics; describe device mechanisms and behavior of organic photovoltaics; understand the photophysical processes in organic photovoltaics; and introduce different processing techniques for device fabrication.

Effective Date: Summer 2013

 x This course is a common course.

Section 3. Requested Change(s) in Current Common Course

1. Type of Change Requested:

 x Course number to: 737

2. Justification for changes indicated in Section 2.

Limit enrollment to Graduate students

Delete EE 637 from SDSM&T location. We will be only changing MES 637 to MES 737.

Section 4. To be Completed by Academic Affairs

1. University department code: SEECs & MINT

Appendix A

From: Kellar, Jon J.
Sent: Friday, November 30, 2012 3:54 PM
To: Galipeau, David
Cc: Crawford, Kathryn H.
Subject: RE: EE637 organic electronics, to EE 737

Dave:

I am the MES program coordinator and give my concurrence to change MES 637 to MES 737.

Jon

From: Galipeau, David
Sent: Friday, November 30, 2012 3:25 PM
To: Kellar, Jon J.
Subject: EE637 organic electronics, to EE 737

Jon,

We would like to change the course number of EE637 organic electronics, to EE 737. Since this is dual listed with SDSM&T we need concurrence from a SDSM&T department head. Can you get that for us?

Also, please let also let your academic affairs office of this change.

Thanks,

Dave

Dr. David W. Galipeau
Harold C. Hohbach Professor and Graduate Coordinator of Electrical Engineering
Coordinator: Center for Advanced Photovoltaics and Alternative Energy Systems
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South Dakota State University
Brookings, SD 57007