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2-25-2010

### Science and Math Course Proposal 02/25/10

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Morris

CHEM 3301 - VIEW COURSE PROPOSAL

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<b>Approvals Received:</b>	Department on 02-25-10 by Carol Ford (fordcj@umn.edu)
<b>Approvals Pending:</b>	<b>Curriculum Committee</b> > Campus Assembly > Catalog
<b>Effective Status:</b>	Active
<b>Effective Term:</b>	1109 - Fall 2010
<b>Course:</b>	CHEM 3301
<b>Institution:</b>	UMNMO - Morris
<b>Campus:</b>	UMNMO - Morris
<b>Career:</b>	UGRD
<b>College:</b>	MDSM - Division of Science and Mathematics
<b>Department:</b>	10565 - UMM-Sci & Math, Div of-Adm

**General**

<b>Course Title Short:</b>	Chem of Sustainable Energy
<b>Course Title Long:</b>	The Chemistry of Sustainable Energy
<b>Max-Min Credits for Course:</b>	3.0 to 3.0 credit(s)
<b>Catalog Description:</b>	The fundamental chemical concepts underlying energy sources. Topics include: energy basics, fossil fuels, "sustainable" energy sources, biomass, solar voltaics, hydrogen fuel cells and nuclear energy.
<b>Print in Catalog?:</b>	Yes
<b>Additional Course Information (for catalog production):</b>	<no text provided>
<b>Grading Basis:</b>	Stdnt Opt
<b>Honors Course:</b>	No
<b>Delivery Mode(s):</b>	Classroom
<b>Years most frequently offered:</b>	Even years only
<b>Term(s) most frequently offered:</b>	Fall
<b>Component 1:</b>	LEC (with final exam)
<b>Auto-Enroll Course:</b>	No
<b>Graded Component:</b>	LEC
<b>Academic Progress Units:</b>	Not allowed to bypass limits. 3.0 credit(s)
<b>Financial Aid</b>	Not allowed to bypass limits.

<b>Progress Units:</b>	3.0 credit(s)
<b><u>Repetition of Course:</u></b>	Repetition not allowed.
<b><u>Course Prerequisites for Catalog:</u></b>	2302 or #
<b><u>Course Equivalency:</u></b>	01758 - Chem 3301/ESci 3301
<b><u>Consent Requirement:</u></b>	No required consent
<b><u>Enforced Prerequisites:</u> (course-based or non-course-based)</b>	002523 - prereq chem 2302
<b><u>Editor Comments:</u></b>	02.26.10 - Edited for PSoft. jls
<b><u>Proposal Changes:</u></b>	<no text provided>
<b><u>History Information:</u></b>	<no text provided>
<b><u>Assessment and Goals:</u></b>	<no text provided>
<b><u>Rationale for Changes or Exceptions:</u></b>	THE CURRENT CHEMISTRY OFFERINGS IN THE ENVIRONMENTAL SCIENCE MAJOR ARE LIMITED TO OUR BASIC COURSES (GENERAL CHEMISTRY, ORGANIC CHEMISTRY). THE DISCIPLINE OF CHEMISTRY WILL PLAY A CENTRAL ROLE IN SOLVING ENVIRONMENTAL PROBLEMS, THUS AN ADVANCED CHEMISTRY COURSE WHICH FOCUSES ON ENVIRONMENTALLY RELEVANT PROBLEMS WILL MEET THE NEEDS AND INTERESTS OF MANY OF OUR STUDENTS. BY FOCUSING ON ENERGY, THIS COURSE WILL TIE TOGETHER THE BASIC PRINCIPLES OF CHEMISTRY WITH CURRENT PROBLEMS IN SUSTAINABILITY AND RENEWABLE ENERGY. IT ALSO FITS IN WELL WITH THE NEW ENVIRONMENTAL SCIENCE MAJOR AND UMM'S EMPHASIS ON SUSTAINABILITY.

#### General Education

<b><u>Faculty Sponsor Name:</u></b>	Nancy Carpenter
<b><u>Requirement this course fulfills:</u></b>	SCI - SCI Physical & Biological Sciences without Lab
<b><u>Provisional Approval:</u></b>	Requested on Feb 25, 2010
<b><u>Regular Approval:</u></b>	Requested on Dec 1, 2009

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**Morris**

ESCI 3301 - VIEW COURSE PROPOSAL

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<b>Approvals Received:</b>	Department on 02-25-10 by Carol Ford (fordcj@umn.edu)
<b>Approvals Pending:</b>	<b>Curriculum Committee</b> > Campus Assembly > Catalog
<b>Effective Status:</b>	Active
<b>Effective Term:</b>	1109 - Fall 2010
<b>Course:</b>	ESCI 3301
<b>Institution:</b>	UMNMO - Morris
<b>Campus:</b>	UMNMO - Morris
<b>Career:</b>	UGRD
<b>College:</b>	MDSM - Division of Science and Mathematics
<b>Department:</b>	10565 - UMM-Sci & Math, Div of-Adm

**General**

<b>Course Title Short:</b>	Chem of Sustainable Energy
<b>Course Title Long:</b>	The Chemistry of Sustainable Energy
<b>Max-Min Credits for Course:</b>	3.0 to 3.0 credit(s)
<b>Catalog Description:</b>	The fundamental chemical concepts underlying energy sources. Topics include: energy basics, fossil fuels, "sustainable" energy sources, biomass, solar voltaics, hydrogen fuel cells and nuclear energy.
<b>Print in Catalog?:</b>	Yes
<b>Additional Course Information (for catalog production):</b>	<no text provided>
<b>Grading Basis:</b>	Stdnt Opt
<b>Honors Course:</b>	No
<b>Delivery Mode(s):</b>	Classroom
<b>Years most frequently offered:</b>	Even years only
<b>Term(s) most frequently offered:</b>	Fall
<b>Component 1:</b>	LEC (with final exam)
<b>Auto-Enroll Course:</b>	No
<b>Graded Component:</b>	LEC
<b>Academic Progress Units:</b>	Not allowed to bypass limits. 3.0 credit(s)
<b>Financial Aid</b>	Not allowed to bypass limits.

<b><u>Progress Units:</u></b>	3.0 credit(s)
<b><u>Repetition of Course:</u></b>	Repetition not allowed.
<b><u>Course Prerequisites for Catalog:</u></b>	Chem 2302 or #
<b><u>Course Equivalency:</u></b>	01758 - Chem 3301/ESci 3301
<b><u>Consent Requirement:</u></b>	No required consent
<b><u>Enforced Prerequisites:</u> (course-based or non-course-based)</b>	003185 - Chem 2302
<b><u>Editor Comments:</u></b>	02.26.10 - Edited for PSoft. jls
<b><u>Proposal Changes:</u></b>	<no text provided>
<b><u>History Information:</u></b>	<no text provided>
<b><u>Assessment and Goals:</u></b>	<no text provided>
<b><u>Rationale for Changes or Exceptions:</u></b>	THE CURRENT CHEMISTRY OFFERINGS IN THE ENVIRONMENTAL SCIENCE MAJOR ARE LIMITED TO OUR BASIC COURSES (GENERAL CHEMISTRY, ORGANIC CHEMISTRY). THE DISCIPLINE OF CHEMISTRY WILL PLAY A CENTRAL ROLE IN SOLVING ENVIRONMENTAL PROBLEMS, THUS AN ADVANCED CHEMISTRY COURSE WHICH FOCUSES ON ENVIRONMENTALLY RELEVANT PROBLEMS WILL MEET THE NEEDS AND INTERESTS OF MANY OF OUR STUDENTS. BY FOCUSING ON ENERGY, THIS COURSE WILL TIE TOGETHER THE BASIC PRINCIPLES OF CHEMISTRY WITH CURRENT PROBLEMS IN SUSTAINABILITY AND RENEWABLE ENERGY. IT ALSO FITS IN WELL WITH THE NEW ENVIRONMENTAL SCIENCE MAJOR AND UMM'S EMPHASIS ON SUSTAINABILITY.

#### General Education

<b><u>Faculty Sponsor Name:</u></b>	Nancy Carpenter
<b><u>Requirement this course fulfills:</u></b>	SCI - SCI Physical & Biological Sciences without Lab
<b><u>Provisional Approval:</u></b>	Requested on Feb 25, 2010
<b><u>Regular Approval:</u></b>	Requested on Dec 1, 2009

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**Morris**

CSCI 4409 - VIEW COURSE PROPOSAL

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<b>Approvals Received:</b>	Department on 02-25-10 by Carol Ford (fordcj@umn.edu)
<b>Approvals Pending:</b>	<b>Curriculum Committee</b> > Campus Assembly > Catalog
<b>Effective Status:</b>	Active
<b>Effective Term:</b>	1109 - Fall 2010
<b>Course:</b>	CSCI 4409
<b>Institution:</b>	UMNMO - Morris
<b>Campus:</b>	UMNMO - Morris
<b>Career:</b>	UGRD
<b>College:</b>	MDSM - Division of Science and Mathematics
<b>Department:</b>	10565 - UMM-Sci & Math, Div of-Adm

**General**

<b>Course Title Short:</b>	Programming for Parallel Arch
<b>Course Title Long:</b>	Systems: Programming for Parallel Architecture
<b>Max-Min Credits for Course:</b>	2.0 to 2.0 credit(s)
<b>Catalog Description:</b>	Study of programming models, languages, and approaches for parallel computer architectures. Topics include introduction to parallel computing and parallel architectures, approaches to program parallelization, mechanisms for communication and synchronization between tasks, and study of programming language support for parallel computation.
<b>Print in Catalog?:</b>	Yes
<b>Additional Course Information (for catalog production):</b>	<no text provided>
<b>Grading Basis:</b>	Stdnt Opt
<b>Honors Course:</b>	No
<b>Delivery Mode(s):</b>	Classroom
<b>Years most frequently offered:</b>	Other frequency
<b>Term(s) most frequently offered:</b>	Spring
<b>Component 1:</b>	LEC (with final exam)
<b>Auto-Enroll Course:</b>	No
<b>Graded Component:</b>	LEC
<b>Academic</b>	Not allowed to bypass limits.

<b><u>Progress Units:</u></b>	2.0 credit(s)
<b><u>Financial Aid Progress Units:</u></b>	Not allowed to bypass limits. 2.0 credit(s)
<b><u>Repetition of Course:</u></b>	Repetition not allowed.
<b><u>Course Prerequisites for Catalog:</u></b>	3401
<b><u>Course Equivalency:</u></b>	No course equivalencies
<b><u>Consent Requirement:</u></b>	No required consent
<b><u>Enforced Prerequisites:</u> (course-based or non-course-based)</b>	No prerequisites
<b><u>Editor Comments:</u></b>	02.26.10 - Edited for PSoft. jls
<b><u>Proposal Changes:</u></b>	<no text provided>
<b><u>History Information:</u></b>	<no text provided>
<b><u>Assessment and Goals:</u></b>	<no text provided>
<b><u>Rationale for Changes or Exceptions:</u></b>	IN THE RECENT YEARS PHYSICAL LIMITATIONS OF TRADITIONAL APPROACHES TO SPEEDING UP INDIVIDUAL COMPUTER PROCESSORS GAVE RISE TO INTEREST IN EFFICIENT PARALLEL (I.E. MULTIPROCESSOR) COMPUTING. THE CLASS FOCUSES ON PROGRAMMING LANGUAGES THAT CAN BE EFFECTIVELY USED FOR PARALLEL COMPUTING.

### General Education

<b><u>Faculty Sponsor Name:</u></b>	Elena Machkasova
<b><u>Requirement this course fulfills:</u></b>	M/SR - M/SR Mathematical/Symbolic Reasoning
<b><u>Provisional Approval:</u></b>	Requested on Feb 22, 2010
<b><u>Regular Approval:</u></b>	Requested on Feb 22, 2010

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ESCI 2201 - VIEW COURSE PROPOSAL

[Back to Proposal List](#)**Approvals Received:** None**Approvals Pending:** **Department** > Curriculum Committee > Campus Assembly > Catalog**Effective Status:** Active**Effective Term:** 1105 - Summer 2010**Course:** ESCI 2201**Institution:** UMNMO - Morris**Campus:** UMNMO - Morris**Career:** UGRD**College:** MDSM - Division of Science and Mathematics**Department:** 10565 - UMM-Sci & Math, Div of-Adm**General****Course Title Short:** Env Challenges of Italian Alps**Course Title Long:** Field Experience in Environmental Challenges of the Italian Alps**Max-Min Credits for Course:** 4.0 to 4.0 credit(s)**Catalog Description:** Study of the impact of geologic processes such as tectonism, mass movement and flooding; understanding climate change through the observation of vegetation changes and glacier fluctuations; soil and water resources and the archaeological record of the nature of human settlements in the Alps.**Print in Catalog?:** Yes**Additional Course Information (for catalog production):** <no text provided>**Grading Basis:** Stdnt Opt**Honors Course:** No**Delivery Mode(s):** Classroom**Years most frequently offered:** Even years only**Term(s) most frequently offered:** Summer**Component 1:** FWK (with final exam)**Auto-Enroll Course:** No**Graded Component:** FWK**Academic Progress Units:** Not allowed to bypass limits.  
4.0 credit(s)**Financial Aid Progress Units:** Not allowed to bypass limits.  
4.0 credit(s)



<b><u>Repetition of Course:</u></b>	Repetition not allowed.
<b><u>Course Prerequisites for Catalog:</u></b>	<no text provided>
<b><u>Course Equivalency:</u></b>	No course equivalencies
<b><u>Consent Requirement:</u></b>	College
<b><u>Enforced Prerequisites:</u></b> (course-based or non-course-based)	No prerequisites
<b><u>Editor Comments:</u></b>	<no text provided>
<b><u>Proposal Changes:</u></b>	<no text provided>
<b><u>History Information:</u></b>	<no text provided>
<b><u>Assessment and Goals:</u></b>	<no text provided>
<b><u>Rationale for Changes or Exceptions:</u></b>	THE COURSE IS AN ELECTIVE FOR THE ENVIRONMENTAL MAJOR. IT WILL SPECIFICALLY SERVE ESCI MAJORS INTERESTED IN FIELD EXPERIENCES. THIS COURSE WILL BE OF INTEREST TO ANY STUDENTS INTERESTED IN THE ENVIRONMENT.

#### General Education

<b><u>Faculty Sponsor Name:</u></b>	Jim Cotter
<b><u>Requirement this course fulfills:</u></b>	ENVT - ENVT People and the Environment
<b><u>Provisional Approval:</u></b>	Requested on Sep 30, 2009
<b><u>Regular Approval:</u></b>	Requested on Sep 30, 2009

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PHYS 1064 - VIEW COURSE PROPOSAL

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<b>Approvals Received:</b>	Department on 02-25-10 by Carol Ford (fordcj@umn.edu)
<b>Approvals Pending:</b>	<b>Curriculum Committee</b> > Campus Assembly > Catalog
<b>Effective Status:</b>	Active
<b>Effective Term:</b>	1109 - Fall 2010
<b>Course:</b>	PHYS 1064
<b>Institution:</b>	UMNMO - Morris
<b>Campus:</b>	UMNMO - Morris
<b>Career:</b>	UGRD
<b>College:</b>	MDSM - Division of Science and Mathematics
<b>Department:</b>	10565 - UMM-Sci & Math, Div of-Adm

**General**

<b>Course Title Short:</b>	High Altitude Ballooning
<b>Course Title Long:</b>	High Altitude Ballooning: An Exploration of Near Space
<b>Max-Min Credits for Course:</b>	2.0 to 2.0 credit(s)
<b>Catalog Description:</b>	In this hands-on course we will design and build mini-spacecraft and use (relatively) inexpensive high-altitude helium balloons to launch them into near-space (the upper reaches of the atmosphere), which has many of the same physical properties as outer space. The launch and recovery will be a required class activity tentatively scheduled for a Saturday about two thirds of the way through the semester. The remainder of the semester will involve data analysis from our balloon mission as well as lectures, discussions, and activities associated with full-fledged spaceflight, including the scientific accomplishments and engineering challenges of past, current, and future missions.
<b>Print in Catalog?:</b>	Yes
<b>Additional Course Information (for catalog production):</b>	<no text provided>
<b>Grading Basis:</b>	A-F only
<b>Honors Course:</b>	No
<b>Delivery Mode(s):</b>	Classroom
<b>Years most frequently offered:</b>	Other frequency
<b>Term(s) most frequently offered:</b>	Fall
<b>Component 1:</b>	LAB (no final exam)
<b>Auto-Enroll Course:</b>	No
<b>Graded</b>	LAB

<b><u>Component:</u></b>	
<b><u>Academic Progress Units:</u></b>	Not allowed to bypass limits. 2.0 credit(s)
<b><u>Financial Aid Progress Units:</u></b>	Not allowed to bypass limits. 2.0 credit(s)
<b><u>Repetition of Course:</u></b>	Repetition not allowed.
<b><u>Course Prerequisites for Catalog:</u></b>	<no text provided>
<b><u>Course Equivalency:</u></b>	No course equivalencies
<b><u>Consent Requirement:</u></b>	No required consent
<b><u>Enforced Prerequisites: (course-based or non-course-based)</u></b>	No prerequisites
<b><u>Editor Comments:</u></b>	02.26.10 - Edited for PSoft. jls
<b><u>Proposal Changes:</u></b>	<no text provided>
<b><u>History Information:</u></b>	<no text provided>
<b><u>Assessment and Goals:</u></b>	<no text provided>
<b><u>Rationale for Changes or Exceptions:</u></b>	THE COURSE WILL ENCOURAGE SCIENCE AND NON-SCIENCE MAJORS TO BE ACTIVELY ENGAGED IN THE SCIENTIFIC METHOD OF RESEARCHING A PHENOMENON, DESIGNING AND IMPLEMENTING AN EXPERIMENT TO INVESTIGATE THE PHENOMENON, AND ANALYZING AND PRESENTING THE RESULTS OF THE INVESTIGATION. STUDENTS WILL OBTAIN EXPERIENCE IN ATMOSPHERIC PHYSICS AND CHEMISTRY, TELEMETRY, ELECTRONICS, COMPUTER INTERFACING, DIGITAL IMAGING, IMAGE ANALYSIS, APPARATUS CONSTRUCTION, AND TEAMWORK.

### General Education

<b><u>Faculty Sponsor Name:</u></b>	Gordon McIntosh
<b><u>Requirement this course fulfills:</u></b>	SCI-L - SCI-L Physical & Biological Sciences with Lab
<b><u>Provisional Approval:</u></b>	Requested on Feb 25, 2010
<b><u>Regular Approval:</u></b>	Requested on Feb 4, 2010

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PHYS 2302 - VIEW COURSE PROPOSAL

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<b>Approvals Received:</b>	Department on 02-25-10 by Carol Ford (fordcj@umn.edu)
<b>Approvals Pending:</b>	<b>Curriculum Committee</b> > Campus Assembly > Catalog
<b>Effective Status:</b>	Active
<b>Effective Term:</b>	1109 - Fall 2010
<b>Course:</b>	PHYS 2302
<b>Institution:</b>	UMNMO - Morris
<b>Campus:</b>	UMNMO - Morris
<b>Career:</b>	UGRD
<b>College:</b>	MDSM - Division of Science and Mathematics
<b>Department:</b>	10565 - UMM-Sci & Math, Div of-Adm

**General**

<b>Course Title Short:</b>	Physics of Sustainable Energy
<b>Course Title Long:</b>	The Physics of Sustainable Energy
<b>Max-Min Credits for Course:</b>	4.0 to 4.0 credit(s)
<b>Catalog Description:</b>	The focus of this course is to introduce students to the physics necessary to quantify aspects of energy generation, transport, and consumption. With these tools we will analyze the feasibility of meeting energy demands with renewable energy sources. Course content is designed for students interested in the environmental sciences and will be centered on renewable energy, consumption, and potential environmental costs.
<b>Print in Catalog?:</b>	Yes
<b>Additional Course Information (for catalog production):</b>	<no text provided>
<b>Grading Basis:</b>	A-F only
<b>Honors Course:</b>	No
<b>Delivery Mode(s):</b>	Classroom
<b>Years most frequently offered:</b>	Even years only
<b>Term(s) most frequently offered:</b>	Fall
<b>Component 1:</b>	LEC (with final exam)
<b>Auto-Enroll Course:</b>	No
<b>Graded Component:</b>	LEC

<b><u>Academic Progress Units:</u></b>	Not allowed to bypass limits. 4.0 credit(s)
<b><u>Financial Aid Progress Units:</u></b>	Not allowed to bypass limits. 4.0 credit(s)
<b><u>Repetition of Course:</u></b>	Repetition not allowed.
<b><u>Course Prerequisites for Catalog:</u></b>	1091 or 1101
<b><u>Course Equivalency:</u></b>	No course equivalencies
<b><u>Consent Requirement:</u></b>	No required consent
<b><u>Enforced Prerequisites:</u> (course-based or non-course-based)</b>	003186 - Phys 1091 or 1101
<b><u>Editor Comments:</u></b>	02.26.10 - Edited for PSoft. jls
<b><u>Proposal Changes:</u></b>	<no text provided>
<b><u>History Information:</u></b>	<no text provided>
<b><u>Assessment and Goals:</u></b>	<no text provided>
<b><u>Rationale for Changes or Exceptions:</u></b>	THIS ELECTIVE COURSE PROVIDES A QUANTITATIVE ANALYSIS STUDY OF RENEWABLE ENERGY SOURCES BOTH FOR STUDENTS PURSUING THE NEWLY OFFERED MAJOR IN ENVIRONMENTAL SCIENCE AND OTHER STUDENTS INTERESTED IN THE SCIENCE OF RENEWABLE ENERGY.

### General Education

<b><u>Faculty Sponsor Name:</u></b>	Len Keeler
<b><u>Requirement this course fulfills:</u></b>	ENVT - ENVT People and the Environment
<b><u>Provisional Approval:</u></b>	Requested on Feb 15, 2010
<b><u>Regular Approval:</u></b>	Requested on Dec 15, 2009

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