



08-15

Minnesota State University, Mankato HOLD and CLEAR buttons only compatible with Acrobat V. 4 and 5
Curriculum Proposal

Please type or select the requested information. Print completed forms, add appropriate paper attachments, and route through MSU's curricular process for recommendations and decisions.

(Check all that apply):		Proposal # <u>203</u>
College: <u>Science, Engineering and Technology</u>	<input checked="" type="checkbox"/> Undergraduate	Effective Date of Change:
Department: <u>Computer Science</u>	<input type="checkbox"/> Graduate	Academic Year:
Program: <u>Computer Science</u>	CIP # <u>11.010104</u>	(For Office Use Only)
Type of Change: <u>GEN. ED./CULTURAL DIVERSITY PROPOSALS</u>	Course Designator	Number of Credits
Proposed: <u>New General Education Course</u>		
Title Current:		
Title Proposed: <u>Artificial Intelligence & Science Fiction</u>	<u>CS 201W</u>	<u>4</u>
24-Char. Abbrev: <u>AI & SciFi</u>	(if applicable)	

Include a course or program description for the Bulletin (30-40 words maximum for courses, 100 for programs):

Course will explore the interplay between science fiction (1950s – present) and the development of artificial intelligence. Turing tests, agents, senses, problem solving, game playing, information retrieval, machine translation and robotics. ~~Pre-req: ENG-104~~ Variable GE-1C GE-6 ~~GE-9~~

Rationale or Justification for change:

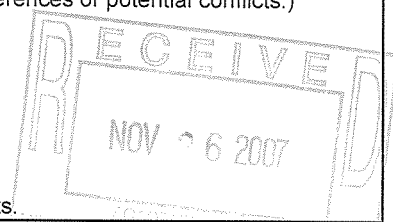
Course will help address the ethics component of CS degree and provide a link between literature and current research & development. It should provide university students with a broad understanding of the current state of the art in Artificial Intelligence.

*****For General Education or Cultural Diversity Courses Only*****

General Education Course:		Cultural Diversity Course:
GE Category #	GE Category Name (Maximum of 3 Categories)	(Please check one.)
<u>6</u>	<u>Humanities and the Arts</u>	<input type="checkbox"/> Core (At least 75% devoted to topics of race, gender, sexual orientation, age, class, and disabilities as they occur in United States Society.) <input type="checkbox"/> Related (At least 25% devoted to the above topics or to a global perspective on topics related to African American, Asian, Hispanic, and Native American inhabitants of the United States.)
9	Ethical and Civic Responsibility <i>NOT Recommended by GE-9</i>	
<u>1c</u>	<u>Writing Intensive</u>	
<p>? For Writing Intensive Courses, attach a description of the kind and quantity of writing.</p> <p>? For Upper Division Courses, include a description of the respects in which it is broad and general rather than narrow and specific, and so suitable as GE.</p>		
<p>Attach paper copies of the following:</p> <p>a. Syllabus or course outline.</p> <p>b. Course's student learning outcomes associated with each GE competency or CD designation.</p> <p>c. List of strategies to be used to assess students' achievement of each GE competency or CD designation.</p>		

*****For New Courses*****

(Check all that apply:)		Instructional Type: <u>Lecture/Lab</u>	Course will be offered:
<input checked="" type="checkbox"/> Course is an elective.	Grading Format: <input checked="" type="checkbox"/> Grade <input type="checkbox"/> P/N		<input checked="" type="checkbox"/> Fall Semester
<input type="checkbox"/> Course is required for program			<input checked="" type="checkbox"/> Spring Semester
<input checked="" type="checkbox"/> Pre- or Co-requisites:	<u>English-104</u>		<input type="checkbox"/> Summer Session
<input type="checkbox"/> Other courses are being changed or eliminated. (Explain.)			
<input type="checkbox"/> Course content or title is similar to courses in other departments. (Attach copy of letter of agreement with other program(s) contacted. Indicate the nature of the discussions and/or resolution of differences or potential conflicts.)			
<p>Attach paper copies of the following:</p> <p>a. Syllabus or course outline.</p> <p>b. Course's student learning outcomes.</p> <p>c. A list of resources required to offer and support this course.</p> <p>d. A description of how teaching this course will affect department staffing.</p> <p>e. If 400/500 level course, an explanation of added expectations of graduate students.</p>			





Minnesota State University, Mankato
Curriculum Proposal

Signature Page

Department

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature]

10-8-07

Department Chair

Date

Comments:

College Curriculum Committee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature]

11-13-07

Committee Chair

Date

Comments:

College Dean

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature]

11/20/07

Dean

Date

Comments:

General Education Subcommittee

Recommended (Category/ies basic only)
 Not Recommended (Category/ies _____)

[Signature]

3-24-08

General Education Subcommittee Chair

Date

Comments:

No Prerequisite of Eng 101. GEN ED COURSES generally do not have prerequisites

Undergraduate Curriculum and Academic Policy Committee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature]

3-24-08

UCAP Faculty Chair

Date

Comments:

Faculty Association Graduate Committee

Recommended
 Not Recommended

Faculty Association Graduate Chair

Date

Comments:

Graduate Dean

Recommended
 Not Recommended

Graduate Dean

Date

Comments:

Academic Affairs Council

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

Assistant Vice President

Date

Comments:

Senior Vice President and Vice President for Academic Affairs

Approved (Category/ies _____)
 Not Approved (Category/ies _____)

Sr. Vice President / Vice Pres. Academic Affairs

Date

Comments:

CS 201: Artificial Intelligence & Science Fiction (4 credits)

Course Description:

This course will explore the interplay between science fiction from the 1950s to the present and the development of the field of artificial intelligence (AI). By juxtaposing science fiction, in the form of short stories, novels, and movies, with technical information about artificial intelligence, students will gain a broad understanding of the complex theoretical, societal and ethical issues inherent in the rapidly developing field of AI. Technical topics will include Turing tests, intelligent agents, artificial senses, problem solving approaches, game playing, information retrieval, machine translation and robotics.

The discussion and writing intensive aspects of this class will allow for analysis of different viewpoints and perspectives while developing students' ability to express ideas.

3 lecture hours, 1 hour of weekly discussion, replaced by movie viewing 4-5 times a semester

Pre-requisites: ~~English 101: Composition~~

Proposed Texts:

Technical texts will be articles drawn from journals, technical magazines, and the Internet.

Supplemental texts for technical and ethical background:

Artificial Intelligence: A Modern Approach, Second Edition, Stuart Russell & Peter Norvig, 2003.

A Gift of Fire, Second Edition, Sara Baase, 2002.

Texts for this class will vary each course offering but will be drawn from short stories, novels, movies and articles. Potential texts include:

Novels & Short Stories

Douglas Adams, *The Hitchhiker's Guide to the Galaxy*, 1979.

Isaac Asimov, *I, Robot*, (selected stories from the collection), 1950

Isaac Asimov, *The Complete Robot* (anthology), 1982.

Terry Bisson, "They're Made Out of Meat", *OMNI*, April 1991.

Orson Scott Card, *Ender's Game*, 1977.

Mary Doria Russell, *The Sparrow*, 1996.

Robert Silverberg, *Tower of Glass*, 1970.

Neal Stephenson, *Snowcrash*, 1992.

Neal Stephenson, *The Diamond Age*, 1995.

Movies:

2001: A Space Odyssey (1968)

AI: Artificial Intelligence (2001)

Blade Runner (1982)

Computer Wore Tennis Shoes, The (1969)

I, Robot (2004)

Johnny Mnemonic (1995)

Star Trek: The Motion Picture (1979)

Star Trek: Generations (1994)

Star Wars (1977)

THX 1138 (1970)

TRON (1982)

WarGames (1983)

Schedule of Topics:

- 1) Week 1: Types of intelligence and sensing (Bisson reading)

- 2) Week 2: Turing tests (Card novel or novella, *The Computer Wore Tennis Shoes*)
- 3) Weeks 3-4: Machines and Ethics (Asimov)
- 4) Week 5: Intelligent agents (Russell)
- 5) Weeks 6-7: Problem Solving Approaches & Search Algorithms (*WarGames*)
- 6) Weeks 8-9: Machine Learning (2001, Stephenson *Diamond Age*)
- 7) Week 10: Information Retrieval (*Star Trek: Generations*)
- 8) Week 11: Game Playing (TRON, Stephenson *Snowcrash*)
- 9) Week 12: Machine Translation (Adams novel)
- 10) Week 13-14: Robotics (*I, Robot*)
- 11) Week 15: Recent developments in AI

Planned Assignments

Weekly reflection or exploration papers on reading/viewing material (1-2 pages each). Questions will address ethical issues.

2 term papers examining connections between literature and technology (5-7 pages) with revisions.
Essay-based final exam.

Grades will be assigned based on reflection papers (35%), term papers (40%), exam (15%) and a small participation/attendance component (10%).

Student Outcomes:

- 1) Demonstrate an awareness of the technical aspects of artificial intelligence and the range of topics associated with the field;
- 2) Demonstrate awareness of the scope and variety of science fiction and the relationship between literature and the field of AI;
- 3) Understand those works as expressions of individual and human values within an historical and social context;
- 4) Respond critically to works of science fiction;
- 5) Articulate an informed personal reaction to works of science fiction;
- 6) Identify key social and ethical issues related to artificial intelligence in society such as liability for errors, responsibility and societal obligations, privacy and discrimination.
- 7) Examine, articulate, and apply their own ethical views in the context of AI and science fiction;
- 8) Analyze and reflect on the ethical dimensions of social and scientific issues given input from works of fiction that examines the human context with respect to artificial intelligence;
- 9) Recognize the diversity of political motivations and interests of others through works of fiction and discussion;
- 10) Expand their repertoire of writing through multiple forms (informal, exploratory, reflective, and formal);
- 11) Expand their knowledge of the writing process;
- 12) Use writing to explore and gain a basic familiarity with the ethical and technical questions associated with artificial intelligence;
- 13) Locate, analyze, evaluate, and use source material or data in their writing appropriate for formal essays to show an understanding of the technical, literary and ethical issues connected to AI.

NEW COURSE SUPPLEMENTAL INFORMATION

Required Resources & Departmental Staffing:

Resources currently in place within the department, the college, and the university library will support this new course. Many of the movies are already available.

There is no impact on staffing requirements.

GENERAL EDUCATION COURSE SUPPLEMENTAL INFORMATION

General Education Credit Justification

This class is be four credits rather than three credits because this course will include required movie viewing and exploratory lab work and discussions (electronic and in person). Because students will typically be either new to the technical area or less comfortable working with literature, it will be important to have an additional hour to allow for exploration of the wide variety of topics within the course.

Assessment of General Education Outcomes

Writing Intensive (Gen Ed 1c)

Specified Outcomes

- 1) Expand their repertoire of writing through multiple forms (informal, exploratory, reflective, and formal).
 - Assessed through various kinds of writing assignments.
- 2) Expand their knowledge of the writing process.
 - Assessed through revisions of essays.
- 3) Use writing to explore and gain a basic familiarity with the ethical and technical questions associated with artificial intelligence.
 - Assessed through multiple assignments, using directive questions.
- 4) Locate, analyze, evaluate, and use source material or data in their writing appropriate for formal essays to articulate an understanding of the technical, literary and ethical issues connected to AI.
 - Assessed through essays, which will require citations.

General Education Outcomes & Assessment

- 1) Use writing to explore and gain a basic familiarity with the questions, values and analytical or critical thinking methods used in the discipline;
 - Assessed through multiple assignments and directive questions.
- 2) Locate, analyze, evaluate, and use source material or data in their writing in a manner appropriate to intended audiences (popular or within the discipline).
 - Assessed through essays, which will require citations.

Writing in this class will require at least 10 pages of revised formal writing, at least 13 pages of reflective, informal and/or exploratory writing and a final exam that will be based on essays.

Arts & Humanities (Gen Ed 6)

Specified Outcomes

- 1) Demonstrate awareness of the scope and variety of science fiction and the relationship between literature and the field of AI;
- 2) Understand those works as expressions of individual and human values within an historical and social context;
- 3) Respond critically to works of science fiction;
- 4) Articulate an informed personal reaction to works of science fiction;

General Education Outcomes & Assessment

- 1) Demonstrate awareness of the scope and variety in the arts and humanities;
 - Assessed through reading, class discussion, essay writing and in-class essay exam on texts selected to show variety within the large range of science fiction works.
- 2) Understand those works as expressions of individual and human values within an historical and social context;
 - Assessed through reading, class discussion, essay writing and in-class essay exam on texts selected to represent a range of historical and social contexts.
- 3) Respond critically to works in the arts and humanities;
 - Assessed through reading, class discussion, essay writing and in-class essay exam on selected texts.
- 4) Engage in the creative process or interpretive performance;
 - This is not a specified outcome, however, students will have the opportunity to write fiction for a response paper and they will engage in the form of the creative process through interaction with works of fiction.
- 5) Articulate an informed personal reaction to works in the arts and humanities.
 - Assessed through reading, class discussion, essay writing and in-class essay exam.

Ethical & Civic Responsibility (Gen Ed 9) ← (NOT Recommended by Gen. Ed.)

Specified Outcomes

- 1) Examine, articulate, and apply their own ethical views in the context of AI and science fiction;
- 2) Identify key social and ethical issues related to artificial intelligence in society such as liability for errors, responsibility and societal obligations, privacy and discrimination.
- 3) Analyze and reflect on the ethical dimensions of social and scientific issues given input from works of fiction that examines the human context with respect to artificial intelligence;
- 4) Recognize the diversity of political motivations and interests of others through works of fiction and discussion;
- 5) Locate, analyze, evaluate, and use source material or data in their writing appropriate for formal essays to show an understanding of the technical, literary and ethical issues connected to AI.

General Education Outcomes & Assessment

- 1) Examine, articulate, and apply their own ethical views;
 - Assessed through reading, class discussion, essay writing and in-class essay exam.
- 2) Understand and apply core concepts (e.g. politics, rights and obligations, justice, liberty) to specific issues;
 - Assessed through exams and essays that will allow students to address issues of politics, rights, obligations and freedom in the context of science fiction and artificial intelligence.
- 3) Analyze and reflect on the ethical dimensions of legal, social, and scientific issues;
 - Assessed through reading, class discussion, essay writing and in-class essay exam examining the field of artificial intelligence and works of science fiction.
- 4) Recognize the diversity of political motivations and interests of others;
 - Assessed through reading, class discussion, essay writing and in-class essay exam using texts selected to have a range of perspectives and viewpoints.
- 5) Identify ways to exercise the rights and responsibilities of citizenship.
 - This is not a specified outcome, however, it is likely that discussions and reflection papers will address issues of personal choices and behavior.

Cronn-Mills, Daniel

From: Nickerson, Ronald G
Sent: Wednesday, March 05, 2008 7:07 AM
To: Cronn-Mills, Daniel
Subject: RE: UCAP stuff

Kim
Prop 203

Dan,

We have Proposal 203 (CS 201W) tabled waiting for additional information from the department on how the course content aligns with the GE outcomes for the categories they are requested. Jim Rife is going to make one last plea and convey the message that it's now or never for this year.

With regard to the Health 215 proposal, I sent you revised language from the department a couple of weeks ago, but essentially what the department wants to do is replace the existing language inside the parentheses in the program description with "(or certified expired within the last year)". Upon reread, they too realized they were potentially offering the course to dead people.

Have a good one,

Ron

Ron Nickerson, PhD
Associate Professor
Recreation, Parks and Leisure Services
MN State University, Mankato
213 Highland N.
Mankato, MN 56001
507-389-3201
ronald.nickerson@mnsu.edu

From: Cronn-Mills, Daniel
Sent: Tuesday, March 04, 2008 5:30 PM
To: Nickerson, Ronald G
Subject: UCAP stuff

Hi Ron,

GE:

1. Has GE approved proposal 203: CS 201W- Artificial Intelligence & Science Fiction

UCAP Stuff:

- a. Did we ever clear up the Health 215 Health 215 issue? Sounds to UCAP like the course is for persons who have died (expired) in the last month and last year. I can't find any paperwork or e-mail notes on it.

Pederson, Kim M

From: Nickerson, Ronald G
Sent: Monday, March 24, 2008 4:30 PM
To: Bates, Rebecca A; Cronn-Mills, Daniel
Cc: Case, Steven V; Pederson, Kim M; Ballard, Peggy; Corley, Christopher R; Gilbert, Steven; Kerr-Berry, Julie; Nickerson, Ronald G; Rife, James
Subject: RE: Gen Ed Course Proposal

Rebecca,

Thank you for your note. On behalf of the General Education and Diversity Committee, I apologize for the miscommunication that left you unaware our committee had tabled your proposal for CS 201W before the end of fall semester. This usually does not happen, but occasionally we make a mistake.

The committee originally tabled the proposal because we wanted to see an explanation of how the course content aligned with the General Education Outcomes for Categories 6 & 9. The major question we ask when we review Gen Ed proposals is the degree to which the courses meet the Gen Ed outcomes for the respective categories. Although the supplemental material you provided more than adequately addressed the Writing Intensive requirement and discussed assessment instruments, knowing that you will assess students' ability to achieve the Gen Ed outcomes with assignments, exams and presentations does not assist us much in determining whether the course meets the outcomes in the first place.

Upon further review, we also noticed that there are two other aspects of this proposal which required additional consideration. We have a Gen Ed Guideline which states that courses in excess of 3 credit hours need additional justification. Here, we look for a course's ability to attain more than the majority of the Gen Ed outcomes and provide additional instructor contact than would be the cases of the typical 3 credit courses. The second Gen Ed guideline that applies to this proposal is that courses in Gen Ed generally do not have pre-requisites.

Given the fact that our committee could have done a much better job of communicating our request for additional information to the department, we reconsidered the proposal this morning despite the fact that the deadline for our review of proposals to be effective in Fall, 2008 was March 7th.

The committee has recommended that the course be approved as a 4 credit course for categories 6 & 1C, but not 9. Our recommendation also includes removal of the English 101 pre-requisite because giving students the flexibility to take Gen Ed courses in the order they see fit is an important principle of the Gen Ed curriculum. After a spirited discussion we became comfortable that the course meets the Category 6 outcomes by reviewing the reading list and the course outline. We could not tell whether the course meets the Category 9 outcomes from the paperwork we had before us. We recommend that the department submit a proposal next year for Category 9 if you remain interested in having the course in that category. I signed the course proposal with our recommendation for Categories 6 & 1C without the English 101 pre-requisite a few minutes ago.

I have talked with Academic Affairs and Dan Cronn-Mills and both are willing to consider the proposal for Fall, 2008 now that Gen Ed has acted. UCAP meets tomorrow at 3 PM. In the meantime, the department should indicate to Dan and I whether you would like the proposal to go forward without English 101 as a pre-requisite.

Thank you for your cooperation and once again, I apologize for the miscommunication.

If there is anything else I can do to help, you know where to find me,

Ron

Ron Nickerson, PhD
Associate Professor
Recreation, Parks and Leisure Services
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Mankato, MN 56001
507-389-3201
ronald.nickerson@mnsu.edu

-----Original Message-----

From: Bates, Rebecca A
Sent: Saturday, March 22, 2008 6:22 PM
To: Cronn-Mills, Daniel; Nickerson, Ronald G
Cc: Case, Steven V
Subject: FW: Gen Ed Course Proposal

Hi,

We just noticed that course proposal 203 for CS 201W was not approved. We had received feedback from our CSET curriculum committee member in October that there were some questions about the proposal. I sent email to Jim Rife in November (attached below) and received no response. Without any response, we submitted a revised version of the course proposal that addresses the feedback. It looks like that is the proposal that was ultimately reviewed.

I had modeled my proposal after successful English department general education proposals and thought that I had shown the relationship between the content (literature and ethics) and the categories (6 and 9). It can clearly be a writing intensive course.

Since then, we have received no other feedback or "one last plea" from Jim Rife. What is the typical pathway for feedback getting to the departments? The department chair hasn't heard anything. Is there a way to find out what issues caused this proposal to be tabled? Is there a way to address this this semester?

Thanks,
Becky

Rebecca Bates, PhD
Associate Professor
Minnesota State University, Mankato
Computer Science Dept.
507-389-5587

From: Bates, Rebecca A
Sent: Thursday, November 01, 2007 9:37 AM
To: Rife, James
Subject: Gen Ed Course Proposal

Hi,

I received the feedback for the GenEd course proposal that I would need to add a justification for the 4 credit status and that I would need to alter the outcomes to better match another one of the GE-9 outcomes. Before I resubmit the proposal, I am wondering what I can do to make it easier to support the proposal in general education committee discussions and if there is anything else I should add to the proposal.

On page 3, I had this paragraph:

GENERAL EDUCATION COURSE SUPPLEMENTAL INFORMATION

General Education Credit Justification

This class is be four credits rather than three credits because this course will include required movie viewing and exploratory lab work and discussions (electronic and in person). Because students will typically be either new to the technical area or less comfortable working with literature, it will be important to have an additional hour to allow for exploration of the wide variety of topics within the course.

Should I modify this? There are three lecture hours planned and one discussion hour.

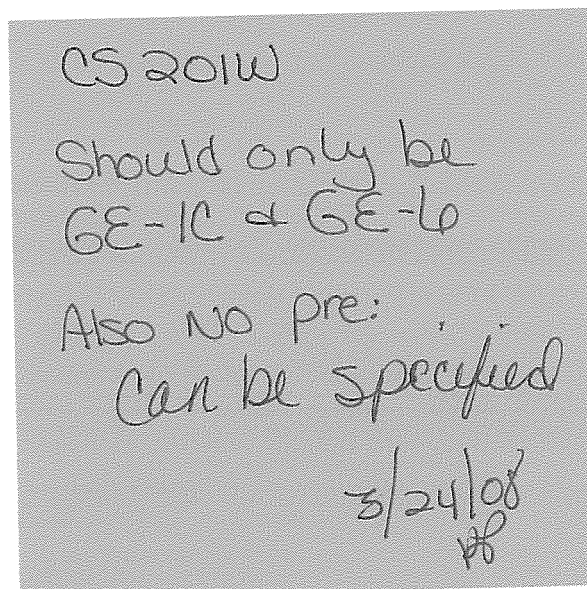
I have added an outcome: Identify key social and ethical issues related to artificial intelligence in society such as liability for errors, responsibility and societal obligations, privacy and discrimination. This will let me match 4 of the 5 ethics outcomes and I am showing assessment as follows.
Understand and apply core concepts (e.g, politics, rights and obligations, justice, liberty) to specific issues;

- Assessed through exams and essays that will allow students to address issues of politics, rights, obligations and freedom in the context of science fiction and artificial intelligence.

I could find no similar course in the English department and, while I think this would be a very fun course to co-teach, I do think it would be difficult for the English department to bring in the technology aspects that this course will also provide. Since the gen-ed requirement for category 13 is 0 credits, and this course addresses categories 6 and 9, I don't think it's worthwhile asking for a GE-13 label in lieu of 6 or 9.

Thank you very much for your feedback!
Becky

Rebecca Bates, PhD
Associate Professor
Minnesota State University, Mankato
Computer Science Dept.
507-389-5587



CS 201W
Should only be
GE-1C & GE-6
Also no pre:
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