



California State University, Chico



HNRS 330W: Mind in the Machine Spring 2021

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| Course Description | <i>An Honors seminar that explores the psychological, philosophical, social, biological, and technical aspects of machine “minds.” Explores core issues within a subset of the disciplines that comprise the cognitive sciences, including artificial intelligence, philosophy, and psychology. Readings and discussions focus on theories of artificial intelligence and classic themes in human cognition and philosophy, such as determinism, consciousness, free-will, and the mind-body problem. The course focuses on increasing one’s capability to express beliefs and evaluate arguments concerning various issues. This is an approved W GE course for Honors.</i> |
| Instructors | Professors Michael Ennis (Psychology) and Eric Gampel (Philosophy) |
| E-mail | Use the Blackboard email to contact your professors or other students, and check your Wildcat email regularly. We will also try Pronto. |
| Office hours | Ennis: MWF 11-12, TuTh 2-3 (mennis@csuchico.edu) Gampel: M-Th 2-3 (call 530-487-4451; egampel@csuchico.edu) |
| Texts and other required resources | <ol style="list-style-type: none"> 1. <u>Textbooks</u> (available at Wildcat Store): <ul style="list-style-type: none"> • Steven Pinker, <i>How the Mind Works</i>, Norton, ISBN: 9780393334777 • Clifford Williams, <i>Free Will and Determinism: A Dialogue</i>, Hackett, ISBN: 978-0915144778 • Torin Alter and Robert J Howell, <i>A Dialogue on Consciousness</i>, Oxford, ISBN: 978-0195375299 2. <u>Other readings and videos</u> via syllabus links & Blackboard |
| Requirements | <ol style="list-style-type: none"> 1. Daily on-line quizzes (20%) 2. One oral presentation (5%) 3. Three 3-5 page papers (15%/20%/20%) 4. Midterm and final exams (10%/10%) |
| Class format | Online synchronous. Class sessions will be through Zoom on MWF 10-10:50 AM. Sessions will start with a 5-minute reading quiz taken via Blackboard, and then include a brief lecture, discussions, additional quizzes, and small group break-out sessions. |
| Writing Intensive | This is a Writing Intensive course, which means there will be regular writing assignments involving revision, and writing instruction. |

Schedule

1. Note that the readings and audio/video episodes listed for a day should be completed before signing on to the day's Zoom class session.
2. There is a 5-minute reading quiz that will open at 10 AM each class day, and close at 10:05 AM. The Zoom class session will begin at 10:05, and will include additional quizzes. The quizzes are low-stakes and should be fairly easy and low-stress if you complete the readings; they are designed mainly to encourage regular reading and engagement.
3. Readings not from the textbooks are available through the "Additional Readings" link on Blackboard ("Bb"), and/or a link in the schedule below. Videos are via links.

1. Survey of topics

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| Week 1 | M | 1/25 | Syllabus Susan Blackmore, "Minds and Machines" (pp. 252-254, via Blackboard) |
| | W | 1/27 | Susan Blackmore, "Minds and Machines" (pp. 254-269, via Blackboard) |
| | F | 1/29 | Watch: CGP Grey, " Humans need not apply " (YouTube, 15 minutes) Watch: Sam Harris, " Can we build AI without losing control? " (TED, 14m) |
| Week 2 | M | 2/1 | Barbara Montero, "Understanding Dualism of Mind and Body" (Bb) Greg Egan, "Learning to be me" (Bb short story) |
| | W | 2/3 | Pinker, <i>How the Mind Works</i> ("HMW"), "Preface" and "Standard Equipment," pp. XV-21 (Bb) |
| | F | 2/5 | Steven Pinker, <i>HMW</i> , "Standard Equipment," pp. 21-44 |

2. Technology: artificial intelligence, what is it?

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| Wk 3 | M | 2/8 | Turing, " Computing Machinery and Intelligence ," (to "Contrary Views") |
| | W | 2/10 | Turing, "Computing Machinery..." (to "Learning Machines") |
| | F | 2/12 | Watch: CGP Grey, " How Machines Learn " (YouTube, 9 minutes) Watch: CGP Grey, " How Machines Really Learn. " (YouTube, 2 minutes) |
| Week 4 | M | 2/15 | Turing, "Computing Machinery..." (to end) |
| | W | 2/17 | Watch: AI's interpersonal abilities: https://www.youtube.com/watch?v=D5VN56jQMWM Watch: AI's medical abilities: https://www.youtube.com/watch?v=hbqDknMc_Bo Watch: AI's creative abilities: https://www.youtube.com/watch?v=Rh9vBczqMk0 (only first 45 secs) https://www.youtube.com/watch?v=GdTBqBnqhaQ |
| | F | 2/19 | Pinker, <i>HMW</i> , "Thinking Machines," pp. 59-77 |
| Wk 5 | M | 2/22 | Pinker, <i>HMW</i> , "Thinking Machines," pp. 77-93 |
| | W | 2/24 | Pinker, <i>HMW</i> , "Thinking Machines," pp. 93-111 |
| | F | 2/26 | Pinker, <i>HMW</i> , "Thinking Machines," pp. 112-148 |
| Wk | M | 3/1 | Student Presentations; 1st PAPER DUE by 11 PM via Turnitin |
| | W | 3/3 | Midterm |

3. Philosophy: could an AI machine have a mind like ours?

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| | F | 3/5 | Rene Descartes, " Meditation I ", pp. 6-8 (Bb, skip first pages) |
| Wk 7 | M | 3/8 | Rene Descartes, " Meditation II ", pp. 8-12 Gottlieb, " The Ghost and the Princess " (Bb) |
| | W | 3/10 | Clifford Williams, Free Will & Determinism ("FW&D"), pp. 1-17 |
| | F | 3/12 | Williams, FW&D, pp. 17-30 |

**** SPRING BREAK March 15-19 ****

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| Wk 8 | M | 3/22 | Williams, FW&D, pp. 30-41 |
| | W | 3/24 | Williams, FW&D, pp. 41-58 |
| | F | 3/26 | Alter and Howell, <i>A Dialogue on Consciousness ("DC")</i> , "Monday night" |
| Wk 9 | M | 3/29 | Alter and Howell, DC, "Tuesday night" |
| | W | 3/31 | No Class, Cesar Chavez Day |
| | F | 4/2 | Alter and Howell, DC, "Wednesday night" |
| Wk 10 | M | 4/5 | Alter and Howell, DC, "Thursday night" |
| | W | 4/7 | Alter and Howell, DC, "Friday night" |
| | F | 4/9 | Philosophy review, and paper discussion |
| | M | 4/12 | Alter and Howell, DC, "Saturday night" |

4. Psychology: how do our minds work?

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| Wk 11 | W | 4/14 | Pinker, <i>HMW</i> , "Revenge of the Nerds," pp. 149-162 |
| | F | 4/16 | Pinker, <i>HMW</i> , "Revenge of the Nerds," pp. 162-186 |
| Wk 12 | M | 4/19 | Second paper draft due for in-class peer review |
| | W | 4/21 | Pinker, <i>HMW</i> , "Revenge of the Nerds," pp. 186-210 |
| | F | 4/23 | Pinker, <i>HMW</i> , "Good Ideas," pp. 299-333 |
| Wk 13 | M | 4/26 | Pinker, <i>HMW</i> , "Good Ideas," pp. 333-362 SECOND PAPER DUE by 11 PM via Turnitin |
| | W | 4/28 | Pinker, <i>HMW</i> , "Hotheads," pp. 363-374 |
| | F | 4/30 | Pinker, <i>HMW</i> , "Hotheads," pp. 374-424 |
| Wk 14 | M | 5/3 | Pinker, <i>HMW</i> , "Family Values," pp. 425-460 |
| | W | 5/5 | Psychology review and paper discussion |
| | F | 5/7 | Pinker, <i>HMW</i> , "Family Values," pp. 460-520 |
| | M | 5/10 | Third paper draft due for in-class peer review |

5. Closing reflections

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| W | 5/12 | Pinker, <i>HMW</i> , "The Meaning of Life," pp. 521-554 |
| F | 5/14 | Pinker, <i>HMW</i> , "The Meaning of Life," pp. 554-565 |

FINAL EXAM: Monday 5/17 8 AM - Friday 5/21 5 PM (on-line, 1 hour 50 minutes)
THIRD PAPER DUE: Friday 5/21 5 PM via Turnitin

Assignments and Grading Policy

1. **Daily quizzes (20%).** There is a 5-minute reading quiz that will open at 10 AM each class day, and close at 10:05 AM. The Zoom class session will begin at 10:05, and will include additional quizzes.

The quizzes are low-stakes and should be fairly easy and low-stress if you complete the readings; they are designed mainly to encourage regular reading and engagement. Even so, in order to do well you will need to read and take notes on assigned readings and audio/video materials before class meets, and also take notes during class. Some readings may require substantial time for outlining, re-reading, and looking up words and ideas. Also, note that you may use your books, notes, or the internet for quizzes, but you may not get help from another person once you begin a quiz. If you are found receiving or giving help to another student during a quiz it counts as a violation of the Academic Integrity policy and will result in an "F" for the course and referral to Student Judicial Affairs (see Academic Integrity policy below).

You may drop your four lowest quiz scores. The four drop policy is to cover situations where you miss the Zoom class session for reasons such as a wifi disruption, having the flu, sleeping in, having a minor headache, or going to a job interview. There are no make-up opportunities except for the following:

- "serious and unforeseeable" reasons for missing the Zoom session that you can document, such as a serious illness or death in the family (see FAQs below for more information about what counts as serious and unforeseeable), or multiple cases of tech problems (a single day will just count as one of the drops), or
- University-sponsored activities such as debate or athletic events.

If you can provide documentation to us of such serious or University-related reasons then the make-up assignment is to 1) complete any assigned readings or videos for the day you missed, and 2) spend about 50 minutes typing a 1-page, single-spaced summary and reflection piece about them. The make-up paper will be graded, and entered as your quiz scores for the day. You may email us the paper.

2. **One oral presentation (5%).** This will be a brief, 2-3 minute Zoom presentation of your first paper on the potential effects of AI on your future career.
3. **Three papers (15%/20%/20%).** Each paper should be 3-5 pages. The first is on the potential effects of AI on your future career; the second is about a philosophical question concerning whether an AI device could have a mind comparable to ours; and the third is about the perspective of evolutionary psychology on the issues raised by

your second paper. Due dates are on the Schedule; specific guidelines will be posted on Blackboard.

4. **Midterm and final exam (10%/10%).** These will be on-line exams that will include multiple choice questions similar to the quiz questions, and short essay questions about the information, concepts, arguments, and theories in the course. You will have a study guide in advance. No make-up exams, unless you can document that you were unable to take the exam due to “serious and unforeseeable events” (see FAQs) or university-sponsored activities. The midterm will be given during a regular class period (see syllabus for date); you may take the final exam at any time during finals week, from 8 AM Monday morning thru 5 PM Friday (but once you start the final, you’ll need to complete it within 1 hour and 50 minutes).

The course is set up so that everyone who keeps up with the assignments and quizzes should be able to pass. If you have a complicated work and/or personal life that will require skipping more than three class Zoom sessions, we recommend taking a different course to meet the Honors UD requirement, or waiting until a semester when you would be able to regularly attend class sessions.

Course Objectives

Course Content Learning Outcomes

Upon successful completion of this course, students will be able to:

1. understand and explain ways that research in artificial intelligence, neurophysiology, and cognitive psychology have illuminated and challenged commonsense and philosophical views of the human mind;
2. identify and critically evaluate their own assumptions and philosophical commitments about the nature of the mind;
3. understand the reasons for and against the claim that machines can or could have intelligence, mind, or consciousness;
4. understand and explain some of the ethical questions raised by machine intelligence;
5. form and defend reasoned positions on these issues about machine intelligence and human minds.

Students will demonstrate having achieved these outcomes through daily discussions, quizzes, papers, and exams.

General Education Status

Successful completion of this course with a D or better will count towards fulfilling your Upper Division GE requirements for Honors. The course is interdisciplinary, including significant readings and discussion about the humanities, social sciences, and natural sciences. In addition, the course will count as a GE Writing Intensive class. This course has substantial writing and rewriting, with class time devoted to learning and practice writing techniques.

General Education Area C Goals

In this course you will cultivate your intellect by forming, developing, and defending your own views about the nature of the mind, in light of the concepts, arguments, and perspectives offered by different philosophical traditions, as well as by the social and natural sciences. Understanding arguments and theories other than your own requires developing your imagination, and your ability to understand the perspectives of others very different from you.

General Education Student Learning Objectives

In this course you will develop your ability to think critically, learning and practicing techniques for interpreting and evaluating controversial and important claims, evidence, and arguments about the nature of the mind. This process will require active engagement with the course content, regularly writing up ideas about the issues, trying them out in class and in writing, and revising them based on what you learn from others and from the class materials. Reflecting and writing about these issues will require creative thinking, identifying your own ways to understand and evaluate claims and arguments about the mind.

Required Technology

Computer Needs

This course will require regular access to a computer linked to the internet, since many articles must be accessed online. If you have any technical questions, please go to the University web page which has on-line information and contact numbers for technical support (<http://www.csuchico.edu/stcp>). If you are on campus, there are computer labs for students around campus. Some of the larger ones are Merriam Library 1st floor and BMU Rooms 116 and 450. You can also check the list at <http://www.csuchico.edu/stcp> or ask staff in your home department or college.

Course Use of Blackboard Learn

The course syllabus, schedule, assignments, and other essential course materials are posted on Blackboard Learn (“BbLearn”), which is accessed through the Chico State Portal at <http://portal.csuchico.edu>. You are responsible for regularly checking the online resources. If you need technical assistance with the portal or Bb Learn, please contact IT Support Services at 530-898-HELP (4357).

Dropping and Adding

You are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. found at <http://www.csuchico.edu/catalog/>. You should be aware of the new deadlines and penalties for adding and dropping classes.

If you add the course late, and miss one or more days of class, you are responsible for obtaining class notes from another student in the course, and you will not be able to make up the quizzes that you miss due to signing up late. (The lowest four quiz scores are

dropped, so missing a day or two of class will not destroy your grade, though it gives you less flexibility to miss classes later in the semester.)

General Education Goals

In this course you will learn knowledge and skills from three different disciplinary areas: social science (psychology), natural science (evolutionary theory and neurophysiology), and philosophy (theories of mind). The main textbook emphasizes the social and natural sciences, while the dialogs emphasize philosophical analysis and argument.

General Education Student Learning Objectives

In this course you will develop your ability to think critically, learning methods for evaluating information, theories, concepts, and philosophical arguments. This process will require active engagement with the course content, regularly writing up ideas about the course topics, trying them out in class and in writing, and revising them based on what you learn from others and from the class materials. **Since this is a Writing Intensive section, you will be responsible for regular writing, including the three papers and short essays on the exams.**

University Policies and Campus Resources

Academic integrity

Any student caught cheating or plagiarizing on an exam or paper will receive an "F" in the course, and the case will be turned over to the Office of Student Judicial Affairs for disciplinary action. Plagiarism is any uncredited use of another person's words, ideas, or intellectual work. It is your responsibility to ensure that you understand how to avoid plagiarism. If you have any questions, please see me.

Students are expected to be familiar with the University's Academic Integrity Policy. Your own commitment to learning, as evidenced by your enrollment at California State University, Chico, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Judicial Affairs. The policy on academic integrity and other resources related to student conduct can be found at: <http://www.csuchico.edu/sjd/integrity.shtml>.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability or chronic illness, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Students with disabilities requesting accommodations must register with the Accessibility Resource Center (ARC) to establish a record of their disability. Special accommodations for exams require ample notice to the testing office and must be submitted to the instructor well in advance of the exam date. ARC will help you understand your rights and responsibilities under the Americans with Disabilities Act and provide you further assistance with requesting and arranging accommodations. The Accessibility Resource Center website is <http://www.csuchico.edu/arc>.

IT Support Services

Computer labs for student use are located on the first and fourth floor of the Meriam Library, Room 116 and 450, Tehama Hall Room 131, and the Bell Memorial Union (BMU) basement. You can get help using your computer from IT Support Services; contact them by calling 530-898-HELP (4347), or through their website, <http://www.csuchico.edu/itss>. Additional labs may be available to students in your department or college.

Student Services

Student services are designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. Students can find support for services such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. Student services information can be found at: <http://www.csuchico.edu/current-students>.

Student Learning Center

The mission of the Student Learning Center (SLC) is to provide services that will assist CSU, Chico students to become independent learners. The SLC prepares and supports students in their college course work by offering a variety of programs and resources to meet student needs. The SLC facilitates the academic transition and retention of students from high schools and community colleges by providing study strategy information, content subject tutoring, and supplemental instruction. The SLC is online at <http://www.csuchico.edu/slc>. The University Writing Center has been combined with the Student Learning Center.

FAQs

How do I pass this class?

By regularly completing readings, attending class, and doing well on the quiz questions. If your early grades are low, it is important to meet with me during office hours to find ways to improve your work. Philosophy is very different than most of your other subjects, and some students need more personal assistance to get on board.

This course includes very challenging readings and topics. Some of the readings will require re-reading. Be sure to take notes on what you read, so you can use those notes to understand and review before exams, or while writing your paper. Always challenge what you read: ask "Does this make sense?", "How does this apply to real life?", "What is another point of view on this?". If you engage with the readings in this way you are much more likely to understand and enjoy them.

The assignments in this course are designed so that you have to learn the specific skills and information from class sessions and readings. You're likely to fail the course if you don't regularly attend class and complete the assignments.

How do I get an A in this class?

Same way, but spend a lot more time and energy! Be sure to focus on the reading in a quiet place, rather than doing your work in front of a TV. Form study groups to discuss readings, and work with others to prepare for the exams or share paper drafts. Try out your ideas in the classroom, during office hours, on-line with other students through email, and even with

friends and family. To work toward a good grade you should plan on 1- 2 hours for each class session to complete the readings and review notes (i.e. about 6 hours per week).

The requirements in this course are designed to reward hard work with what most students would find an acceptable grade. You will need to work hard to get an A, no matter how brilliant you may be, but even if you work hard, there is no guarantee that you will receive an A. Some of you will find that you do not excel at reading or writing about these issues. But if you work hard, you should surely pass the course, and in most cases earn a respectable B or C. If you work hard and you are good at thinking carefully and critically about these issues, then you are likely to receive an A.

If I add the class after the first day, can I make up missed assignments?

No. You should get the notes from other students, and we will drop your lowest assignment scores (see above), so with hard work you can still do well in the course. But by adding late you will be at a disadvantage because you have missed some classes, and have used up some of your “freebies”. The only exception is if your reasons are “serious and unforeseeable” as defined below. Notice that we will make an exception if your academic advisor didn’t realize you needed the course, or you were dropped from other courses due to a mix-up in the financial aid office. Those situations count as “serious and unforeseeable”, but **we will need documentation** from the advisor or the financial aid office that the late add was due to their mistakes.

What happens if I miss class?

Find out from another student what you have missed, and copy their notes. Unless you can document your reason as serious and unforeseeable (as defined below), or as due to a University-sponsored activity, you cannot make up the quizzes. Remember, you get four ‘freebies’ for quizzes, so if this does not happen often you should be fine. With 30+ students in each class section, allowing make-ups for other things like job interviews or minor colds would lead to having to evaluate dozens of reasons and give dozens of make-ups, which would take a lot of time better spent making the course run well.

What is a “serious and unforeseeable” reason?

These mainly include serious illness, or the death of close relative, but you must be able to document it, e.g. with a note from a doctor who you visited for that illness, or another reliable source such as a parent. Some events other than illness or death would count as serious and unforeseeable, e.g. a flat tire on the way to school from Red Bluff. But be forewarned it is my judgment call whether something will count (e.g. a flat tire on 5th avenue will probably not count, since you could walk to class, even if that means a parking ticket or some other inconvenience). Also, we will always require documentation.

As some other examples, the following kinds of reasons do not count as “serious and unforeseeable”, as we will be interpreting the phrase:

- you need to work overtime in order to keep your job, or you have a job interview
- you have to write a paper or study for an exam for another course
- you want to save money on flights by leaving early for a semester break
- you have to help out friends and family who are sick, in the hospital, or dying

- *you want to go to a family reunion*

It is your choice whether to miss a class for such reasons, and your right, based on your own priorities. But you will not obtain a make-up opportunity.

What if I have the flu, but don't see a doctor? I shouldn't go to class and infect other students, should I? But I can't afford a doctor, and there's nothing a doctor can do for a flu anyway.

This is a common situation, and is one of the primary purposes of the 4-drop policy. If you have the flu, of course do not come to class, but get the notes from someone, and count it as one of your drops. Usually a case of the flu will only mean missing 1-2 class sessions, so the 4-drop policy should cover most situations.

However, if you really do come down with the flu or other illnesses that mean missing more than 4 class sessions, without visiting a doctor who can certify your illness, we are willing to consider your situation and possibly assign make-up work. In such cases we will require a note or email from roommates, friends, or parents certifying that they know you had those illnesses, and we reserve the right to contact those persons and judge whether to grant the make-ups. This is of course a way to discourage using this 'out' by simply getting a quick email from a friend; missing class more than 4 sessions a semester should have consequences, unless the reasons really are 'serious and unforeseeable'.

What if I have a serious and unforeseeable reason, or miss class due to a University-sponsored activity?

Bring your documentation to my office hours, and we will give you an alternative assignment.

This class seems like a lot of work. Why is it required?

Many students find studying these topics fascinating. If you don't, that's OK. But do your best to look for something interesting or curious about the topics, since that is likely to lead to a more engaged semester and, quite frankly, a better grade. Just buckle in, you may find that you enjoy it more than you expect.

What if my life is too busy to regularly attend class and complete the readings on time?

If you have a complicated work and/or personal life that will require skipping more than two or three classes, we recommend taking a different course, taught by a different instructor, or waiting until a semester when you would be able to regularly complete class assignments.

Can my friend or fellow classmate help me prepare my paper?

Yes. You are allowed and encouraged to work with others, especially your classmates. However, if someone helps your writing in a significant way, giving you an idea or argument that you end up using, be sure to cite them and indicate how they helped you. Do not present their words or ideas as your own. If you want to quote them, provide quotation marks and cite the conversation (using standard format, either APA or MLA). It is your responsibility to understand this rule, and to ask me if you have any questions (see Academic Integrity above).

How do I see how I'm doing in the class?

Grades will be posted every week or two on Bb Learn in the "My Grades" area for the quizzes, exams, and papers.

How do I estimate what my grade will be?

Estimate your score out of 100 for each assignment category (e.g. quizzes), multiply each category's score by its percentage weight, and add them together (see below for details). For grades you have not yet received, plug in estimates for the grades you expect, and calculate the average for that category of assignment.

| Grade Scale | | | | |
|-------------|----------|----------|----------|-------|
| A+ 97-100 | B+ 87-89 | C+ 77-79 | D+ 67-69 | F <60 |
| A 93-96 | B 83-86 | C 73-76 | D 63-66 | |
| A- 90-92 | B- 80-82 | C- 70-72 | D- 60-62 | |

How to Estimate Your Grade

Use the grade scale above to figure your course grade. Here is the formula:

$(\text{Quizzes} \times 20\%) + (\text{Presentation} \times 5\%) + (\text{First paper} \times 15\%) + (\text{Second paper} \times 20\%) + (\text{Third paper} \times 20\%) + (\text{Midterm} \times 10\%) + (\text{Final exam} \times 10\%) = \text{Course Grade}$

Can I do extra credit if I miss some classes or do poorly on an exam?

No. Don't take the class if you have a very complicated and busy life that will interfere with regularly completing homework and going to classes.

How do I get help?

Use the instructor's office hours, form a study group, and/or make appointments to work with a tutor at the Student Learning Center (see above).