



Course Syllabus for CS 100 Critical Thinking with Computers Fall 2012

Basic Course Information:

<i>Instructor:</i>	Sharon Tuttle		
<i>Lecture times and location:</i>	Tuesday, Thursday	12:30 – 1:50 pm	SCIB 133
<i>Instructor's office:</i>	BSS 322		
<i>Instructor's e-mail:</i>	st10@humboldt.edu or sharon.tuttle@humboldt.edu or smtuttle@humboldt.edu		
<i>Instructor's office phone:</i>	(707) 826-3381		
<i>Instructor's office hours:</i>	Monday	3:15 - 4:45 pm	
	Wednesday	10:45 am - 12:15 pm	
	Tuesday, Thursday	10:45 - 11:45 am	
	or by appointment		
<i>Course public web page:</i>	follow link from: http://users.humboldt.edu/smtuttle/ or follow link from course Moodle site		

Course Description:

[from the HSU catalog]: Apply critical thinking skills studying human and computer parallels, computer technology and methodology, and program development.

CS 100 is a General Education (GE) - Area A - Critical Thinking course. Critical thinking is the main focus of this course (not computer programming). CS 111 - Computer Science Foundations 1 is the Department of Computer Science's introductory programming course.

The primary goal of this course is to help you develop and apply critical thinking skills; a secondary goal is how computing can apply in that context. Course work will include some hands-on computing assignments designed to exercise and nurture your critical thinking skills.

General Education - Area A - Critical Thinking - Learning Outcomes

from: <http://www.humboldt.edu/academicprograms/a-critical-thinking>

Upon completing this requirement students will:

1. identify the premises and conclusion of an argument and determine its validity and soundness.
2. analyze, criticize and advocate ideas.
3. distinguish deductive from inductive argument forms, identify their fallacies, and reason inductively and deductively.
4. distinguish matters of fact from issues of judgment or opinion and reach well-supported factual or judgmental conclusions from a wide diversity of real world examples.

Course Prerequisites:

CS 100 has no prerequisites.

Required Course Text, Materials, etc.:

- "Critical Thinking - A Student's Introduction", 4th Edition, Bassham, Irwin, Nardone, Wallace, McGraw-Hill, 2007, ISBN-13# 978-0-07-340743-2
- Turning Point RF Response Clicker, available at the campus bookstore
- Additional required readings may be made available either on-line, or via resources available through the HSU Library such as the ACM Digital Library and Safari TechBooks Online.

Course Software:

We may be making some use of free software in this course, most likely **DrRacket** (available from <http://www.racket-lang.org/>) and/or **Python** (available from <http://www.python.org>). We might even make use of a little **SWI-Prolog** (available from <http://www.swi-prolog.org/>). All of these can run on Mac OS X, Windows, and Linux.

Clickers:

We will be using Turning Technologies student response clickers in class. There is significant literature indicating that using clickers may increase student engagement and success in learning.

Students purchase this clicker (they are available from the campus bookstore); purchased clickers can be returned at the end of the semester for a partial refund of the purchase price or they can be kept for use in future HSU courses. You register your clicker at the beginning of each semester by logging into Moodle and going to the course Moodle site; you should then be asked to enter your clicker code (consisting of 6 characters/digits) from the back of your clicker when requested. You then bring your clicker to every class meeting.

These clickers will be used for in-class questions, which will be interspersed within class sessions. The response system will record the overall class response percentages as well as keep track of individual answers. Typically, you will receive **1.5 points** for a correct answer, **0.75 point** for an incorrect answer, and **0 points** for no answer, but with a maximum semester clicker-questions grade of **120**. (There may be some no-point questions from time-to-time as well -- such questions will be noted if/when they come up.) Thus you will be rewarded for regular attendance and participation. If you miss a class session, you miss that day's clicker questions and cannot make them up. However, there will be a sufficient number of questions asked to allow for the possibility of extra credit (up to a **maximum** clicker grade of **120**) (or to make up for a day that you are out due to illness, although note that you are still responsible for finding out what you missed on such days).

If you forget your clicker for a class meeting, then **up to 5 times** you may still receive some clicker credit,

minus a 2-point penalty, by e-mailing me your clicker answers for that day, **by midnight on that day**, using a Subject: line of: Subject: CS 100 Clicker Answers for <date>. Later e-mails, or e-mails without the proper Subject: line, will not be accepted for credit.

The idea is that the clicker questions will help you to see if you are starting to understand concepts being discussed; sometimes they will also provide review of concepts discussed previously. Clicker questions are typically quite different from exam questions (since clicker questions are typically multiple-choice questions, while not all exam questions will be multiple-choice). They still enable you to get some immediate feedback regarding whether you are grasping course concepts, whether you need to pay more attention to course discussions and/or readings, etc. They may even help me to know what concepts might need more explanation in-class.

I hope to run tests of the system during the first two class meetings, and hope to begin asking questions that "count" during the second week's Tuesday lecture. Therefore, you must purchase your clicker and register it as soon as possible. If there is an issue with this (for example, if the bookstore runs out of clickers), contact me immediately.

Finally, please note that use of another CS 100 student's clicker, or having someone else use your clicker in a CS 100 class session -- that is, pretending that someone is in class who actually is not -- is considered to be cheating, with the same policies applying as would be the case if you turned in someone else's work as your own or permitted someone else to copy your work. Please ASK ME if you are not sure what I mean by this.

Grading Breakdown:

Your semester grade will be determined by the percentage of points that you earn, based on the following:

Homework assignments:	35%
Clicker questions:	15%
Exams:	Exam #1: 15%
	Exam #2: 15%
	Final Exam: 20%
	Thursday, December 13, 12:40 - 2:30 pm, SCIB 133

Your letter grade will then be determined based on the following:

Overall Percentage (based on the given weights)	Letter Grade
≥ 93	A
≥ 90 and < 93	A-
≥ 87 and < 90	B+
≥ 83 and < 87	B
≥ 80 and < 83	B-
≥ 77 and < 80	C+
≥ 73 and < 77	C
≥ 70 and < 73	C-
≥ 67 and < 70	D+
≥ 60 and < 67	D
< 60	F

Final Exam:

Again, the Final Exam for this course is scheduled for **Thursday, December 13, 12:40 – 2:30 pm**, in **SCIB 133** (unless I announce otherwise). Note this time and date **BEFORE** making your end-of-semester travel plans.

Students with Disabilities:

Persons who wish to request disability-related accommodations should contact the **Student Disability Resource Center** in the Learning Commons of the Lower Library, **826-4678 (voice)** or **826-5392 (TDD)**. You can reach the Student Disability Resource Center's web site at:

<http://www.humboldt.edu/disability/>

Please note that some accommodations may take up to several weeks to arrange. If you are eligible for such accommodations, please contact me as soon as possible to discuss them.

Add/Drop Policy:

Students are responsible for knowing the University policy, procedures, and schedule for dropping or adding classes. You can find these on the web at:

<http://www.humboldt.edu/registrar/students/regulations/schedadjust.html>

You can find the University policies for repeating classes at:

<http://www.humboldt.edu/registrar/students/regulations/repeat.html>

Note that the CSU (and thus HSU) policies on withdrawing from and repeating courses changed as of Fall 2009:

- Students may withdraw from no more than 18 semester-units after the first four weeks of instruction; that is, students may withdraw from no more than 18 semester-units between census and the final 20% of instruction, and only then with a serious and compelling reason. (Note that: "Withdrawal from courses for reasons that are catastrophic, such as accident or serious illness do not count toward the 18-unit limit." [from the Registrar's web site])
- Students may repeat courses only if they earned grades lower than a C.
- Students may repeat up to 16 semester-units with grade forgiveness.
- Students may only repeat a course for grade forgiveness two times and each of these attempts counts toward the 16-unit maximum for repeats.
- Students may repeat up to an additional 12 semester-units with grades averaged.

Please note - as of Fall 2009, HSU is being much more strict about what constitutes a "serious and compelling reason".

The census date for Fall 2012 (before which you can drop without a W, and without it counting toward your 18 semester-units drop limit) is: **Monday, September 17th**.

The last date for Fall 2012 to drop with a W on your transcript, with a serious and compelling reason, and subject to the 18 semester-unit drop limit, is: **Monday, October 29th**.

If you do drop the course, note that it is **your responsibility** to complete and submit the appropriate forms.

Incompletes:

Incompletes are rarely given and only in the case of a true emergency. They certainly are not appropriate for students who find they have fallen behind on assignments, missed a test, or taken on too much academic, work, or family responsibilities. For these situations, dropping the course would be appropriate (**if** that is still possible according to the University policies for dropping courses).

Time Expectations:

There is a general rule of thumb for college-level courses:

*To be successful in a course, you should plan to spend at least 2 hours outside of class for each 1 hour of college course credit. That implies an estimate of **at least 6 hours a week spent outside of class for this 3-credit course.***

You should also note that:

- Homework deadlines will **not** be extended because you waited too late to start or because you did not allocate enough time before the deadline to work on it; likewise, they will **not** be extended because of hardware or network failures. You need to keep backups of your files at all times, and need to plan your schedule to be able to work on on-campus computers as necessary.
- If you have not completed an assignment by the deadline, your best choice is to submit whatever you have managed to do by then, as partial credit is your friend, to carefully study the posted example solution as soon as it is available, to ask me about anything there that is still unclear, and to get a good early start on the next homework.

Academic Honesty:

Students are responsible for knowing policy regarding academic honesty. For more information, visit:

http://www.humboldt.edu/studentrights/academic_honesty.php

Observe that among the actions that are unacceptable are submitting another's homework problem, program, code, or file as your own and failing to quote material taken from another person's written work.

All course work is to be the work of each student, **individually, unless** it is **explicitly** stated otherwise at the beginning of that course work's description. **If** group work is explicitly permitted for some assignment, the names of all students involved must be included on the work submitted. (For example, if **pair programming** is explicitly specified as being allowed for an assignment, then each pair-programmed file turned in will include both of the names of the students who worked on it as a pair.)

(Important aside: pair programming specifically means that two people sit at one computer, with one typing while the other says what to type. Both people are actively involved in the programming process. Pair-programming is **not** two people working at two computers, each doing different parts of the work individually. If pair-programming is ever explicitly permitted, then you are expected to actually pair-program any files you do not complete on your own.)

(If an assignment does explicitly specify that it is acceptable to pair program or work in groups, make sure that you don't get into the situation where you are merely watching someone else learn.)

For homework assignments (that are not explicitly specified as permitting pair-programming), students may discuss general approaches **as long as no one involved in the discussion is writing anything down or typing anything during such discussions**. Students may also help one another in determining causes of program bugs, or in determining the meaning of error messages. However, in general, students may not work together to complete homework assignments, one student should not instruct another in how to write the answer for a homework problem, and **any type of copying or modifying of another person's homework problem answers or computer files, OR of providing homework problem answers or computer files to another, related to homework assignments, is definitely over the line, and never justified.**

Note that it is **your** responsibility to ensure that course assignment files are read-protected. If you are careless about this, and someone else copies your work, you will share the penalty. (In particular, be very careful about leaving work on shared network drives in campus labs, or in UNIX/Linux directories that are not read-protected.)

Learning takes hard work; when students turn in others' work as their own, it is a slap in the face to those

seriously interested in learning. Not turning in an assignment results in no credit for that assignment, of course, but that is an honest grade. Work that violates the course honesty policy deserves a lower grade than that, and therefore the course policy is that work violating this policy will receive **negative** credit. A person providing work for copying receives the same **negative** credit as the copier. Repeat offenses will be handled according to University policies.

Asking Questions/Getting Help:

- Include CS 100 along with the subject of your e-mail in the `Subject:` line of any class-related e-mail that you send me. This will help your e-mail be more recognizable as a class-related message, and will make it less likely that I will accidentally overlook it.
 - That said, if I have not replied to your e-mail within 24 hours, please re-send it, just in case I did overlook it somehow.
 - Also, DON'T INCLUDE the word "password" in your e-mails to me -- `pwd` is a handy abbreviation to use instead -- because, due to phishing scams, HSU's spam filtering does not seem to like e-mails with that word in it! (Odd, but this was definitely the case in Spring 2010...)
- I try to check my e-mail (`st10@humboldt.edu` or `sharon.tuttle@humboldt.edu` or `smtuttle@humboldt.edu`) about once a day on weekdays, and about once over each weekend. This is another reason to start assignments early, so that you have time to receive a reply to any questions that might arise.
- You are encouraged to ask me questions in class, in office hours, and by e-mail. The most successful students are those who are not afraid to ask questions early and often (I will gently let you know if you are overdoing it), who do the assigned reading, who attend lecture regularly, who start homeworks promptly after they are made available from the course web page, and who practice course concepts as much as possible.
 - It is better to ask a question sooner than later -- for example, it is better to send an e-mail with a specific question as soon as you think of it than it is to wait a day or two until the next class meeting or office hour. If you wait to ask such questions, you may not have time to complete the assignment.
 - It is perfectly reasonable if you send me a question and then end up finding out the answer yourself before you receive my answer; likewise, it is not a problem if you end up sending me several questions in separate e-mails (as you work on different parts of a homework while awaiting earlier answers).
- That said, I am expecting that you will ask **specific** questions – overly vague or broad questions are problematic.
 - (For example, an example of a specific question is, "When I try to evaluate the logical expression (paste in the expression), it evaluates to true, but I expected it to evaluate to false. Can you explain to me why it is true?" An example of an overly vague or broad question is: "Here is my answer to problem 4. Is it right?")

Initial Ground Rules for Course Discussions

(adapted from <http://www.edchange.org/multicultural/activities/groundrules.html>)

1. Listen actively -- respect others when they are talking.
2. Speak from your own perspective instead of generalizing ("I" instead of "they," "we," and "you").
3. Do not be afraid to respectfully challenge one another by asking questions, but refrain from personal attacks -- focus on ideas.
4. Participate to the fullest of your ability.
5. The goal is not to agree or to "win" -- it is to improve your critical thinking skills.
6. Be conscious of body language and nonverbal responses -- they can be as disrespectful as words.

Additional Coursework-Related Policies:

- As for any college-level course, you should expect to put in a significant amount of time outside of scheduled class meetings doing the assigned reading, working on homework assignments, and practicing concepts discussed.
- Each assignment must be submitted as is specified on its handout to be accepted for credit. This may vary for different assignments.
- Each assignment will be clearly marked with one or more due dates (a single assignment could have multiple parts with multiple due dates).
 - **No assignments will be accepted late. If you wish to receive any credit for an assignment, then you must turn in whatever you have done, even if it is incomplete, by the deadline. Partial credit is usually preferable to no credit.** Note that "the computer/network/etc. going down" is no excuse --- if you leave an assignment for the last minute and there are technical problems, you still must turn in whatever you have by the deadline. For any work done on computer -- as with any work done on computer! -- make frequent back-ups of your files.
 - You may submit multiple versions of assignment files before the deadline; I will grade the latest pre-deadline submission unless you inform me otherwise. This is to encourage you to turn assignment parts in early (since you will know that you can always turn in an improved version if further inspiration strikes). You also don't have to worry about forgetting to submit something that has already been submitted.
 - If for any reason you cannot submit course work as specified by the homework handout, e-mail me your homework files as attachments by the deadline, and then submit the files as specified as soon as you are able. The e-mailed files will establish that these files were completed by the deadline.
- It is nearly impossible to write unambiguous specifications. If you have questions about "what she means", get them resolved early by **asking**.
- In logic, philosophy, and computing, specifications can end up mattering a great deal -- for example, what you precisely start with can have a massive impact on what you can conclude, and whether different pieces of computer code written by different people on a team work when combined may come down to whether specifications were precisely followed.
 - So, work that you turn in is expected to meet handout specifications precisely, and part of your grade may be determined by how well your work meets those requirements.
- Some course work will be graded simply based on whether it has been attempted (the instructor's decision is final as to whether this is the case) -- other course work may be graded for correctness and whether it meets specifications. You will not know in advance which will be the case.

Additional Grading-Related Policies:

- If you would like me to e-mail certain course grades to you during the semester, then you must give me permission in writing on the course information form.
- Clicker questions will be given during most lectures.
 - With the ample quantity of clicker questions, then, you can be absent several times from non-exam lectures without direct penalty, for whatever reason (although you are, of course, still responsible for the material covered on those days, and it is **your responsibility** to determine what that material is).

Additional Course Policies:

- You are expected to read this syllabus and be prepared to sign a statement that says you have received it, have read it, and understand its contents.

- Exam dates are given in the course schedule below. Make-up exams are only possible by special prior arrangement or because of a valid medical excuse.
- You should monitor your e-mail for course-related messages. The University provides a means for you to specify your preferred e-mail address, so if you wish to receive e-mail into an account other than the one HSU provides, change your preferred e-mail address in both Account Center and Moodle accordingly. Course-related messages from me will include CS 100 in the Subject: line.
- You are expected to check the public course web page and the course Moodle site regularly --- course handouts, homework assignments, examples from lecture, and possibly more will be posted to the public course web page, and grades will be posted to the course Moodle site. You are expected to monitor your posted grades and let me know about any discrepancies.
- When reading assignments are given, you are expected to prepare (read and study) assigned readings before class and to participate in class discussions. Projected examples will be utilized frequently during discussion. You should understand that there may be material in the reading that will not be discussed in lecture/lab, and material in the lectures/labs that may not be found in the reading. You are responsible for both.
- **Attendance and disruptive behavior:** Students are responsible for knowing policy regarding attendance and disruptive behavior:
http://www.humboldt.edu/studentrights/attendance_behavior.php
- Regular attendance at lectures is expected. If you should happen to miss a lecture, then you are responsible for finding out what you missed. "I wasn't there that time" is never an acceptable excuse. Lecture notes are not posted, although many of the projected examples will be made available on the public course web site. Clicker questions missed **cannot** be made up later.
- **Late arrival to class:** Please attempt to come to class on time, with your headphones put away and your cell phones turned off. If you must arrive late or leave early, please do so with the least possible distraction to other students. If your late/early habits become disruptive, you may be asked to leave the class permanently.
- **Class disruption:** University policy requires that instructors eliminate disruptions to the educational process. Distractions such as excess talking, ringing cell phones, working on assignments for other classes, inappropriate or distracting laptop/tablet/smartphone/gadget use, demonstrations of affection, packing of books early, loud music leaking from headphones, chronic late arrivals or early departures, excessive comings and goings or other behaviors that disrupt the class are not acceptable. Students indulging in such behaviors will first be warned before being required to leave the class permanently.
- **Emergency Evacuation:** Please review the evacuation plan for the classroom (posted on the orange signs), and review the campus Emergency Preparedness web site at:
http://www.humboldt.edu/emergencymgmtprogram/campus_emergency_preparedness.php
...for information on campus Emergency Procedures. During an emergency, information regarding campus conditions can be found at **826-INFO** or:
<http://www.humboldt.edu/emergency>

Tentative Course Schedule: (subject to change!)

Week 1: August 21, 23

- Read by Thursday, August 23: Chapter 1 of the course text
- Topics: Intro to course, Intro to critical thinking
- Homework 1 out

Week 2: August 28, 30

- Read by Tuesday, August 28: Chapter 2 of the course text
- Topics: Recognizing arguments; a few computer language basics
- Homework 1 due, Homework 2 out

Week 3: September 4, 6

- Tuesday, September 4: NO CLASS - Instructor out of town
- Topics: Continuing with recognizing arguments; a few computer language basics
- Homework 2 due, Homework 3 out

Week 4: September 11, 13

- Read by Tuesday, September 11: Chapter 3 of the course text
- Topics: Intro to deductive and inductive reasoning
- Homework 3 due, Homework 4 out

Week 5: September 18, 20

- Topics: Continuing with inductive and deductive reasoning
- Homework 4 due, Homework 5 out

Week 6: September 25, 27

- Read by Tuesday, September 25: Chapter 5 of the course text
- Topic: Logical fallacies, part 1
- Homework 5 due, Homework 6 out

Week 7: October 2

- Read by Tuesday, October 2: Chapter 6 of the course text
- Topic: Logical fallacies, part 2
- Thursday, October 4: NO CLASS - Instructor at conference
- Homework 6 due, Homework 7 out

Week 8: October 9, 11

- Topics: Continuing with logical fallacies, part 2; review for Exam 1
- Homework 7 due

Week 9: October 16, 18

- Tuesday, October 16 - Exam 1
- Read by Thursday, October 18: Chapter 7 of the course text
- Topic: Analyzing arguments
- Homework 8 out

Week 10: October 23, 25

- Topics: Analyzing arguments, continued
- Homework 8 due, Homework 9 out

Week 11: October 30, November 1

- Read by Tuesday, October 30: Chapter 8 of the course text
- Topic: Evaluating arguments and truth claims
- Homework 9 due, Homework 10 out

Week 12: November 6, 8

- Read by Tuesday, November 6: Chapters 9, 10 of the course text
- Topics: A little categorical logic; a little propositional logic
- Homework 10 due

Week 13: November 13, 15

- Topics: Review for Exam 2
- **Thursday, November 15: Exam 2**
- Homework 11 out

Thanksgiving Break - November 19-23

Week 14: November 27, 29

- Read by Tuesday, November 27: Chapter 11 of the course text
- Topic: Inductive reasoning
- Homework 11 due, Homework 12 out

Week 15: December 4, 6

- Topics: to be announced; review for Final Exam
- Homework 12 due

Final Exam:

THURSDAY, December 13, 12:40 - 2:30 pm, in SCIB 133 (unless I announce otherwise)