

TCORE 112E Introduction to Science (SLN 20713)

Computer Science Principles

Instructor: **Alan Fowler**

Class Times	Tuesday/Thursday 1:30 - 3:35 PM DOU 101	
Office Hours CP 125 (also by appointment)	M 1:30 - 3:45 PM W 1:00 – 2:00 and 3 – 3:45	T/Th 11:30 - 1:00 PM Friday 1:30 – 4:00 PM
Contact	acfowler@uw.edu	(253) 692-4603

Course Description:

This course introduces the central ideas of computing and computer science by engaging students in creative problem solving activities. This course also examines social and ethical issues inherent in computing. The fundamental concepts explored in this course will enable students to understand and contribute to future developments as computing continues to evolve.

Some of the questions we will try to answer:

- I am not a Computer Science major, how will this course help me?
- What is Computer Science?
- What do computer scientists do?
- How are different sorts of data represented in a computer?
- What are binary numbers?
- What is Boolean logic?
- What are digital circuits?
- What are the main components of a computer system?
- What is an algorithm?
- What is computer programming like? Is it hard? Is it fun?
- How can I create a web site?
- What degrees are available in computing at UWT?
- What careers are available in computing?
- What are some social and ethical considerations in computing?
- Who were the major contributors / innovators in the history of computing?
- Others...

If there are other things you hope to learn in this course, please let me know. I will accommodate as many student suggested topics as possible.

TCORE:

The Core program consists of a coordinated series of courses that represent the various disciplines in the university. This course, along with the others in your cohort, fulfills one of the university's general education requirements in each of the areas of knowledge plus composition. The courses are designed to both support and challenge you to develop the critical thinking, writing, research, and analytical skills you'll need at UWT while introducing you to relevant topics in the social sciences, humanities, and sciences.

TCORE Learning Objectives:

Students will be able to:

- define the sciences as an academic discipline
- collect, evaluate, and analyze information and resources to solve problems or answer questions.
- approach complex issues by taking a large question and breaking it down into manageable pieces.
- make meaningful connections among assignments and readings in order to develop a sense of the "big picture."
- identify, analyze, and summarize/represent the key elements of a text.
- enter/place themselves into an existing dialogue (intellectual, political, etc.).
- express ideas clearly in writing and speaking in order to synthesize and evaluate information before presenting it.

These TCORE Learning Objectives are part of a set that is shared among all TCORE courses. So you'll work on similar objectives in your other TCORE classes.

Required Texts and Materials:

There is no required text book for this course. Readings (or links to readings) will be posted on the course web site.

Grading:

Your final grade will be determined by the following:

15% Participation and in-class activities

15% Blog writing

15% Quizzes (probably 3 quizzes – equally weighted – 5% each)

10% Midterm exam

15% Individual writing assignment and presentation

10% Group writing assignment and presentation

20% Final Exam

Each component of the course grade is briefly described below. Complete information for each component of the course will be provided in separate documents on the course web site as we progress through the quarter.

Participation:

Participation in various in-class activities is a key component of this course. The details of how this will be graded will be presented in class and on the course web site. Briefly, here are some ways for you to negatively affect your participation grade: arrive late or leave early, use electronic devices at inappropriate times (which is most of the time during class meetings), sleep, or distract yourself and others by holding side conversations. Try not to do these things!

Blog Writing:

During the course you will contribute to a blog in which you will post entries which reflect on various aspects of the course. You will also comment on the blog entries of other students. Detailed instructions and requirements for this will be explained in class and will be posted on the course web site.

Quizzes:

During the quarter, there will be three quizzes posted on the course web site. These quizzes will be open note (so take good notes). The quizzes will be completed as homework assignments.

Writing assignments:

There will be an individual writing assignment and a group writing assignment this quarter. Each of these will be explained in detail in class.

Presentations:

Our last two class meetings will be dedicated to presentations, which will be based on the final versions of the individual and group writing assignments.

Preference for UW email:

Be aware that the UW email policy (<http://www.tacoma.uw.edu/information-technology/uw-tacoma-email-policy>) states that "Faculty and staff are not obligated to respond to students using non-UW email accounts." I may choose to respond to email from other sources, but it is also possible that email from other source will be filtered as spam. To assure that I receive and respond to your emails, please use your UW email address (send email from an account ending in @u.washington.edu or @uw.edu). Also, any official announcements about this course will be sent to your UW email address, so check your UW email regularly.

Electronic Devices

Electronic devices (including, but not limited to, cell phones, pagers, laptops and personal digital assistants) may only be used in the classroom with the permission of the instructor. Activities that are not relevant to the course, such as checking/ sending email, playing games, and surfing the web, are considered disruptive activities when class is in session.

Academic Honesty:

A major part of your experience in this course will involve reading, synthesizing, and using the knowledge and ideas of others. However, when you use the ideas or work of others you must give proper credit to the source. During the course we will discuss exactly how to give credit to the source(s) from which you derive facts and ideas.

Plagiarism occurs when a person fails to give proper credit for the ideas or work of another. The penalties for plagiarism can be quite steep, including failing the class, being put on disciplinary probation, and having a record of the plagiarism in your student file (all things you probably want to avoid). Receiving a late grade or even a zero is better than plagiarizing.

The reason that plagiarism is considered such a serious offense in college is that your ideas are your currency in academia. Thinking is your job. As a member of the university, your success is determined by your unique thoughts and approaches to complex issues and how you work to refine and present them. Plagiarism is, essentially, a form of stealing academic currency.

Services available on campus:

The [Teaching and Learning Center](http://uwttlc.mywconline.com) (TLC) offers free academic support for students at all levels. For writing, reading, learning strategies and public speaking needs, please make an appointment online at: <http://uwttlc.mywconline.com>. More information about our online writing center is available at: <http://www.tacoma.uw.edu/node/6579>. For math, stats and quantitative needs, assistance is available on a drop-in basis in Snoqualmie 260.

Library

The UW Tacoma Library provides resources and services to support students at all levels of expertise. We guide students through the research process, helping them learn how to develop effective research strategies and find and evaluate appropriate resources. For assistance or to schedule an appointment, visit us at the Reference Desk in the Library, email tacref@u.washington.edu or phone 253-692-4442. For more information about the Library and its services, see <http://www.tacoma.uw.edu/library/>

Disability Support Services

The University of Washington Tacoma is committed to making physical facilities and instructional programs accessible to students with disabilities. Disability Support Services (DSS) functions as the focal point for coordination of services for students with disabilities. In compliance with Title II of the Americans with Disabilities Act, any enrolled student at UW Tacoma who has an appropriately documented physical, emotional, or mental disability that "substantially limits one or more major life activities [including walking, seeing, hearing, speaking, breathing, learning and working]," is eligible for services from DSS. If you are wondering if you may be eligible for accommodations on our campus, please contact the DSS reception desk at 692-4522, or visit <http://www.tacoma.uw.edu/dss>.

Student Counseling Center

The Student Counseling Center offers short-term, problem-focused counseling to UW Tacoma students who may feel overwhelmed by the responsibilities of college, work, family, and relationships. Counselors are available to help students cope with stresses and personal issues that may interfere with their ability to perform in school. The service is provided confidentially and without additional charge to currently enrolled undergraduate and graduate students. To schedule an appointment, please call 692-4522 or stop by the Student Counseling Center (SCC), located in MAT 354.

http://www.tacoma.washington.edu/studentaffairs/SHW/scc_about.cfm/

Campus Safety Information

<http://www.tacoma.uw.edu/administrative-services/campus-safety>

Safety Escort Program

For your safety, UW Tacoma encourages students, faculty, staff and visitors to use the Safety Escort Program. Campus Safety Officers are available to walk you to your car or other campus destinations during the following hours: Monday - Thursday — 6 a.m. to 11 p.m.; Friday — 6 a.m. to 10 p.m. The service is free of charge. During busy periods, the Campus Safety Officer may ask you to meet in a common location as to facilitate escorting multiple people. Dial 253-692-4416 to request a Safety Escort.

In case of a fire alarm

Take your valuables and leave the building. Plan to return to class once the alarm has stopped. Do not return until you have received an all clear from somebody "official," the web or email.

In case of an earthquake

DROP, COVER, and HOLD. Once the shaking stops, take your valuables and leave the building. Do not plan to return for the rest of the day. Do not return to the building until you have received an all clear from somebody "official," the web, or email.

Inclement Weather

As the winter storm season approaches, make sure you're signed up for [UW Alert](#) to learn about campus closures and other emergency information via text message. The UW Alert system will be used to notify the campus community if UW Tacoma operations are delayed or suspended due to inclement weather. In addition, a message will be left on the Inclement Weather Hotline at 253-383-INFO and sent to local radio and television stations. Campus closure information will also be sent via e-mail and an update will be posted on the UW Tacoma Web page.

[Student Health Services](#) (SHS) is committed to providing compassionate, convenient, and affordable health care for University of Washington Tacoma students, from care for illness and minor injury to women's health and preventative medicine, including vaccination services. Insurance is not required. Funded by UW Tacoma student fees, office visits are provided free of charge. Treatment plans may incur costs, such as medications, labs, or vaccines, most of which are offered at discounted rates. For more information, please visit www.tacoma.uw.edu/shs or email at uwts@uw.edu. If you have questions or would like to schedule an appointment, please call (253) 692-5811 or stop by SHS at the Laborer's Hall on Market Street.

Course Schedule (**TENTATIVE** – See the course web site for the most up to date schedule):

Wk	Date	Topic
1	1/7	Syllabus & Introduction
	1/9	Abstraction and Data Representation
2	1/14	Introduction to algorithms
	1/16	Boolean Logic
3	1/21	Boolean Logic and electronic circuits
	1/23	Electronic circuits and computer components
4	1/28	Introduction to programming (Light Bot)
	1/30	Light Bot (Text commands)
5	2/4	Disassembly and reassembly of a computer
	2/6	Programming using Python
6	2/11	Programming Turtle Graphics using Python
	2/13	Programming Turtle Graphics using Python
7	2/18	Midterm Exam
	2/20	Introduction to HTML; Build a web site
8	2/25	Introduction to HTML and CSS
	2/27	Post your web site on the UW server
9	2/4	Degrees and Careers in Computing
	2/6	Ethical issues in Computing
10	2/11	Individual Presentations
	2/13	Group Presentations / Course Evaluations
11		Final exam week