CSCE 1010 Course Syllabus

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Class Meeting   See Canvas Page

Textbook:

Blown to Bits -- Your Life, Liberty, and Happiness After the Digital Explosion. Hal Abelson, Ken Ledeen and Harry Lewis. New York: Addison-Wesley, 2008.

Available on-line at no cost. (www.bitsbook.com)

Course Description:

CSCE 1010, is an introduction to computing based upon University of California Berkeley's Beauty and Joy of Computing course (bjc.berkeley.edu), which is itself a realization of the CS Principles curriculum framework (csprinciples.org). As such, CSCE 1010 is available to all UNT students no matter their major or year in school. CSCE 1010 has no course prerequisite other than paying tuition.

Course Catalog Description:

A breadth-first introduction to computer science based upon 7 "Big Ideas," namely: 1) computing is a creative activity, 2) abstraction reduces information and detail to facilitate focus on relevant concepts, 3) data and information facilitate the creation of knowledge, 4) algorithms are used to develop and express solutions to computational problems, 5) programming enables problem solving, human expression and creation of knowledge, 6) the Internet pervades modern computing and 7) computing has global impacts.

CS Principles Big Ideas:

The CS Principles curriculum framework is built on seven big ideas, namely

1. **Creativity**: Computing is a creative activity.
2. **Abstraction**: Abstraction reduces information and detail to facilitate focus on relevant concepts.
3. **Data**: Data and information facilitate the creation of knowledge.
4. **Algorithms**: Algorithms are used to develop and express solutions to computational problems.
5. **Programming**: Programming enables problem solving, human expression and creation of knowledge.
6. **Internet**: The Internet pervades modern computing.
7. **Impact**: Computing has global impacts.

Course Objectives

By the end of the term, each student should meet the following objectives:

1. Students will practice and enhance their creative abilities within the development of software.
2. Students will use abstraction to reduce information and detail in order to facilitate focus on relevant topics. In software this typically occurs both in designing algorithms and creating modules within their programs.
3. Students will access and summarize available data to create information and evaluate information to create knowledge.
4. Students will develop, evaluate and use algorithms in defining solutions to computational problems.
5. Students will create software that enables problem solving, human expression and creation of knowledge.
6. Students will both describe how the internet pervades modern computing and make effective and ethical use of the internet in solving problems.
7. Students will recognize, discuss and describe the global impacts of computing.

We'll talk about objectives and the use of them in class. This particular set of objectives for CS Principles comes from the National Science Foundation (NSF) and the College Board, the folks who bring us Advanced Placement (AP) exams.

All Students (any major):

All students will achieve competency in three general education categories with specific outcomes as indicated:

1. Communications – students will develop and express ideas through effective written, oral and visual communication for various professional and academic contexts.

    a. The student will identify a central idea

    b. The student will use relevant content to convey understanding in a cohesive fashion.

    c. The student will use disciplinary conventions for organizing and presenting content

    d. The student will use communication tools appropriately and skillfully for academic and professional contexts

2. Critical Thinking – Students will use inquiry and analysis, evaluation and synthesis of information, and innovation and critical thinking.

a. Students will pose vital questions and identify problems, formulating them clearly and precisely

b. Students will show evidence of source selection and evaluation, clearly separating facts from opinions

c. Students will consider alternative viewpoints, recognize and assess assumptions, and identify possible consequences

d. Students will develop well-reasoned conclusions and solutions

e. Students will apply creative ideas or approaches to achieve solutions or complete projects

3. Empirical and Quantitative Skills – Students will apply scientific and mathematical concepts to analyze and solve problems to investigate hypotheses.

a. Students will identify problems or hypotheses and related quantitative approaches in a clear fashion.

b. The students will gather and identify relevant information, and select appropriate quantitative approaches to analyze problems and investigate hypotheses

c. The students will correctly apply quantitative approaches to analyze and solve problems and investigate hypotheses

d. Students will summarize their analysis and conclusions, and reflect on their learning experiences

GRADING POLICY

Your grade will be determined by a combination of written exams, Minor Assignments, Major Assignments, class participation and quizzes. The breakdown of the grading weights is:

Participation, quizzes, and in-class essays	20%
Minor Assignments and Labs	30%
Explore and Create Performance Tasks (Major Assignments)	20%
Midterm Exam	10%
Final Exam	10%

SPOT

The Student Perception of Teaching (SPOT) survey is a requirement for all organized undergraduate classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider SPOT to be an important part of your participation in this class.

ADA

UNT complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disability Act of 1990 (ADA). If you have a disability and need a reasonable accommodation for equal access to education or services please contact the Office of Disability Accommodation.

Collaboration and Cheating

As stated in class, I insist upon collaboration among students (and even faculty?) in class and labs, as it is my belief that it provides a better learning environment. Bear in mind that you'll be asked to work in pairs in the lab, but NOT on the Explore Performance task.   We'll discuss this "pair programming" paradigm more in both class and lab.

For **some** Minor assignments however, your will required to do your own work. I know that leaves a lot to interpretation, but we'll be discussing acceptable cooperation in class.   In the final analysis though, if you're not sure what level of cooperation is expected/allowed, ask me or one of the TAs.

And, of course, you need to do your own work on exams as well. Here there should be no ambiguity. In case the above description, and in-class discussion of my views on appropriate and inappropriate collaboration do not answer all of your questions, please look at the university [Student Rights and Responsibilities](#) page.

Semester Schedule

The semester schedule will be provided in the Canvas platform and reviewed regularly in class.

Other Course Policies:

- There will be no make-up exams, quizzes, or programs given in this class. However, for documented *excused absences** or *emergencies** additional time for homework or an alternate lab date may be granted. Exam makeups or substitutions may be granted as well depending on the situation. Note these exceptions are only in the case of documented excused absences or emergencies. In most cases you should contact the instructor before the absence to make proper arrangements.

- You are responsible for the information covered in class, whether you attend class or not. Individualized lectures will not be given. Please check with other class members for any notes that might have been missed during an absence. Except for the start of the term, attendance will not be taken in lecture. However, your attendance is strongly recommended to improve your opportunity to meet course objectives.

- Students should expect an "in-class" assignment each week in designated class periods. The assignment will be submitted before that class session is complete. You must make arrangements in advance if you are going to miss your assigned class section. All exercises must be completed within the calendar week they are assigned. All work will be completed in class unless otherwise instructed by your instructor TA.

- There is no curve grading in this class.

- All non-lab programming assignments are due at 11:59pm on the due date. Starting early on projects and other assignments is strongly encouraged. Students typically have great difficulty completing their projects in one night the day before they are due. Copying all or part of another person's program is strictly prohibited and will result in a grade of zero. Supplying printed or electronic copies of your homework to other classmates will also result in a grade of zero. All assignments will be submitted through the class website on Blackboard.

- All pertinent information about the class (assignments, exam reviews, sample code, written topic discussions, and day-to-day event schedule) is available via the class webpage. If there is ever a question as to when something is due, or an additional copy of a course document is needed, ALWAYS check the class webpage. If you feel there is incorrect or there is missing information on the class website, email the instructor about the problem immediately. Electronic mail (email) will be a major means of communication with the instructor outside of actual classroom discussions.

- Please keep this information sheet handy during the semester and always periodically check the class homepage for any course information, including scheduling of programming assignments, exams, and exam reviews.

* Excused Absences: Students are expected to schedule routine appointments and activities so as not to conflict with attending class. However, some absences cannot be prevented. In the event of a medical emergency or family death, students must request an excused absence as quickly as feasible following the emergency. Use common sense. Students must provide documentation that verifies an emergency arose.

* Emergencies: By definition, emergencies cannot be planned for. Your instructor attempts to make accommodations in these instances that allow for making up missed work and completion of the course in a timely manner. Among these emergencies are:

- A death in your immediate family.
- An accident or illness requiring immediate medical treatment and where a doctor has indicated attending class is impossible or inadvisable.
- Employees who are on call 24/7 fall in this category but must document that they were called during a scheduled class.

Course Contents

WEEK	TOPICS
1	Course Overview
2	Intro to Programming Part 1
3	Intro to Programming Part 2
4	Abstraction Part 1
5	Abstraction Part 2
6	Data Processing and Lists Part 1
7	Data Processing and Lists Part 2
8	The Internet Part 1
9	The Internet Part 2
10	Algorithms and Simulation Part 1
11	Algorithms and Simulation Part 2
12	How Computer Work Part 1
13	How Computers Work Part 2
14	Fractals
15	Recursion
16	Final Exam

COVID-19 Addendum

COVID-19 Impact on Attendance

While attendance is expected as outlined above, it is important for all of us to be mindful of the health and safety of everyone in our community, especially given concerns about COVID-19. Please contact me if you are unable to attend class because you are ill, or unable to attend class due to a related issue regarding COVID-19. It is important that you communicate with me prior to being absent so I may make a decision about accommodating your request to be excused from class.

If you are experiencing any symptoms of COVID-19 (https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html) please seek medical attention from the Student Health

and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Hotline at 844-366-5892 or COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure. While attendance is an important part of succeeding in this class, your own health, and those of others in the community, is more important.

Class Materials for Remote Instruction

The UNT fall schedule requires this course to have fully remote instruction beginning November 28th. Additional remote instruction may be necessary if community health conditions change or you need to self-isolate or quarantine due to COVID-19. Students will need access to a webcam and microphone – and internet access to participate in fully remote portions of the class. Information on how to be successful in a remote learning environment can be found at https://online.unt.edu/learn

Statement on Face Covering

Face coverings are required in all UNT facilities. Students are expected to wear face coverings during this class. If you are unable to wear a face covering due to a disability, please contact the Office of Disability Access to request an accommodation. UNT face covering requirements are subject to change due to community health guidelines. Any changes will be communicated via the instructor.