CIS 115 - Introduction to Computing Science

Fall 2014

Syllabus

Sections A, B, C, & D	Section E
Instructor: Russell Feldhausen **Office:** 212 Nichols Hall **Email:** russfeld@ksu.edu **Phone:** (785) 292-3121 **Website:** http://people.cis.ksu.edu/~russfeld **Office Hours:** MWF 2:30 - 3:30	**Instructor:** Dr. William Hsu **Office:** 324C Nichols Hall **Email:** bhsu@ksu.edu **Phone:** (785) 236-8247 **Website:** http://people.cis.ksu.edu/~bhsu **Office Hrs:** MTF 10:30 - 11:30, W 12:30 - 1:30

Classroom: Nichols 122

Class Times	Teaching Assistant 1 - 5	Teaching Assistant 6 - 10
A: TU 9:30 - 10:45 a.m.	Geordy Williams (geordyp)	Connor Elliott (connorelliott11)
B: TU 1:00 - 2:15 p.m.	Johnathan Bostrom (johnbos)	Devin Kelly-Collins (devinkc)
C: TU 2:30 - 3:45 p.m.	Hunter Goddard (hbgoddard)	Naveena Bellam (naveena)
D: TU 4:00 - 5:15 p.m.	Chris Piggott (cpiggott)	James Tyson (jbtyson)
E: TU 8:00 - 9:15 a.m.	Jake Ehrlich (jehrlich)	Naveena Bellam (naveena)

How to Get Help in this Course:
CIS 115 can be an interesting course due to the large amount of material covered and the fact that much of the material is brand new to students. Therefore, you are encouraged to seek help whenever you feel you are being overwhelmed or don't understand a topic. **You are not alone!** Most students in CIS 115 have never studied anything relating to Computing Science before, so it is new to everyone.

Here are the recommended ways to get help on CIS 115:

- Review the course materials posted on K-State Canvas and the course website
- Ask your teammates for help or advice on assignments or projects
- Send assignment questions to your teaching assistant (TA) or instructor via email
- Visit your instructor's office hours, or the office hours for your TA if available
- Schedule a one-on-one meeting with your instructor

Course Description
This course serves as an introduction to the field of Computing Science and its related disciplines. Many students today have been living with and using the products of Computing Science his or her entire life, but few have taken the time to wonder exactly where all of these technologies come from or how they work. The goal of this course is to fill that void. This course will examine the history of Computing Science and the technology created by key players in the field, as well as provide an introduction to many key concepts that lay the foundation for further learning. Additionally, this course will cover several disciplines within Computing Science and related disciplines in other areas and show how they intertwine to create new and innovative technologies. To accomplish this, students will engage in hands-on learning activities, participate in meaningful discussions, and research various topics, all of which focus on using information learned in the course to solve real-world problems.

Course Objectives
At the end of this course, students should be able to:

- Understand, articulate, and discuss the foundations of Computing Science
- Understand, articulate, and discuss the relationship between Computing Science and other disciplines
- Apply the tools and techniques of Computing Science to solve problems in any discipline
- Develop a personal understanding of how Computing Science integrates into his or her own life

Major Course Topics

- The history of Computing Science and early computing machines
- Basics of binary representation, boolean algebra, data encoding and encryption
- Programming, computational thinking, and algorithm design concepts
- Overview of the internet's structure and how it affects our world
- Major areas of focus within Computing Science
- Cybersecurity in a connected world
- How Computing Science relates to other disciplines

Course Structure
This course will be drastically different from the "traditional" lecture-based college courses you are likely familiar with. Instead, it will focus on several hands-on learning activities designed to engage and interest students in a variety of topics while helping them think more deeply about each topic and why it is important in Computing Science. While there will be some bits of lecture material to introduce topics, it will be kept to a minimum and designed to be interactive in order to encourage discussion and analysis.

In short, this class will require a considerable, but reasonable, amount of effort, not only from the students but the instructor and TAs as well. In addition to the in-class exercises and activities, there will be several assignments and a few group projects to be completed outside of class.

Therefore, in this course there will be:

- *No Midterm Examinations*
- *No Final Examinations*
- *No Multiple Choice Quizzes*
- *No Lists of Facts to Memorize*

Individual Assignments

Throughout this course, each student will be responsible for a number of assignments to be completed independently, without collaborating with others in the class unless otherwise noted.

Attendance and Participation in Class Activities

Each class period will include many hands-on activities to be completed in class that will help illustrate the topic of the day. Collaborating and communicating with others in the class is a large part of these activities and is encouraged. Participating in each of these activities is key to learning, so failing to attend class or participate in the in-class activities will result in a grade of zero for that day's work. Simply attending class does not guarantee that you will receive points, especially if you are not actively engaged in learning.

Programming Assignments

There may be some programming assignments given from time to time that must be completed outside of class. It is acceptable to communicate with other students about the concepts in the assignment if you do not understand it, but you should not discuss the details of how the assignment should be implemented. The completed program should be your own work, or the work of your small group if allowed by the instructor.

Online Blog

Each student is responsible for publishing a weekly blog article based on a topic given in class. These blog articles will give the student a chance to articulate his or her own opinions about a topic or learn more about a particular area that wasn't covered very deeply in class. Each blog article should be original work, and should clearly show independent thought and opinions wherever appropriate.

Team Assignments

Students will be assigned to a team at the beginning of the semester. Each team will be responsible for completing several projects during the course of the semester.

Video Project

Each team will be given a topic based on a particular faculty member's research area. The team will then learn a bit about that topic and create a 3 - 5 minute video showcasing that topic and how it has impacted the field of Computing Science and society in general. The team will have access to materials including previous interviews with the faculty member and relevant books and articles, and may also choose to ask additional questions of the faculty member.

Topic Research
Each team will be given a topic to research. The team will locate and organize materials to use when presenting the topic to the class. The materials should include both online and offline resources. The team will then create a presentation to share the information about their topic with the class. That research will then be used to write the textbook section.

Textbook Section
Each team will use the material collected for the topic, as well as information from the resulting class discussions, to create a section to be added to the final course textbook. The section is expected to be a thorough examination of the topic and should be written in such a way that others taking this course can read it and understand the material. The class as a whole will be responsible for finalizing the entire draft of the textbook and making sure it has a consistent design and feel to it.

Grading
In theory, each student begins the course with an A. As you submit work, you can either maintain your A (for good work) or chip away at it (for less adequate or incomplete work). In practice, each student starts with 0 points in the gradebook and works upward toward a final point total out of the possible number of points. In this course, it is perfectly possible to get an A simply by completing all the individual assignments and team projects in a satisfactory manner, as well as attending and participating in class each day. Each assignment constitutes a portion of the final grade, as detailed below:

10% - Textbook Section*
10% - Class Topic Research*
10% - Vided Project*
14% - Programming Assignments (2% each, 7 total)
(The single lowest assignment score will be dropped)
4% - Final Programming Assignment (cannot be dropped)
28% - Class Attendance and Participation (1% each)
(The two lowest one-day scores will be dropped)
24% - Online Blog (2% each)
(The two lowest blog article scores will be dropped)

* All group work will include a **REQUIRED** peer evaluation component which can adjust that portion of the individual's grade up to 50%. If a student should fail to contribute to a group assignment at all, their grade for that assignment will be reduced to a zero. Failure to complete the peer evaluation will result in a 10% grade deduction for that assignment.

Letter grades will be assigned following the standard scale:

90% - 100% - A; 80% - 89.99% - B; 70% - 79.99% - C; 60% - 69.99% - D; 00% - 59.99% - F

Late Work
Every student should strive to turn in work on time. Late work will receive penalty of 10% of the possible points for each day it is late. Missed class work cannot be made up, though as mentioned above some areas will drop the lowest two scores. If you find that you are getting behind in the class, you are encouraged to speak to the instructor for options to make up missed work.

Required Texts
“The Pattern on the Stone: The Simple Ideas that Make Computers Work” by W. Daniel Hillis.
ISBN 046502596X - http://www.amazon.com/dp/046502596X/

“Tubes: A Journey to the Center of the Internet” by Andrew Blum.
ISBN 0061994952 - http://www.amazon.com/dp/0061994952 Kindle edition available

“Blown to Bits: Your Life, Liberty, and Happiness After the Digital Explosion” by Hal Abelson, Ken Ledeen, and Harry Lewis.
ISBN 0137135599 - http://www.amazon.com/dp/0137135599/
Creative Commons digital edition available **FREE** at http://www.bitsbook.com/

Software
We will be using the Scratch programming language developed by MIT for many in-class activities and individual programming assignments. It can be found online at http://scratch.mit.edu.

Subject to Change
The details in this syllabus are not set in stone. Due to the flexible nature of this class, adjustments may need to be made as the semester progresses, though they will be kept to a minimum. If any changes occur, the changes will be posted on the K-State Cavas page for this course and emailed to all students.

Academic Honesty
Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: http://www.ksu.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

For this course, a violation of the Honor Pledge will result in an automatic 0 for the assignment and the violation will be reported to the Honor System. A second violation will result in an XF in the course.

Students with Disabilities
Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

Expectations for Classroom Conduct
All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the *Student Government Association By Laws, Article V, Section 3, number 2*. Students that engage in behavior that disrupts the learning environment may be asked to leave the class.

Campus Safety
Kansas State University is committed to providing a safe teaching and learning environment for faculty members and students. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page (http://www.ksu.edu) and click on the Emergency Information button.

Academic Freedom Statement
Kansas State University is a community of students, faculty, and staff who work together to discover new knowledge, create new ideas, and share the results of their scholarly inquiry with the wider public. Although new ideas or research results may be controversial or challenge established views, the health and growth of any society requires frank intellectual exchange. Academic freedom protects this type of free exchange and is thus essential to any university's mission.

Moreover, academic freedom supports collaborative work in the pursuit of truth and the dissemination of knowledge in an environment of inquiry, respectful debate, and professionalism. Academic freedom is not limited to the classroom or to scientific and scholarly research, but extends to the life of the university as well as to larger social and political questions. It is the right and responsibility of the university community to engage with such issues.