CIS 115 - Introduction to Computing Science

Spring 2016

Abridged Syllabus

Instructor: Russell Feldhausen
Office: 2214 Engineering Hall (DUE)
Email: russfeld@ksu.edu
Phone: Office - (785) 532-7929; Mobile - (785) 292-3121 (Call/Text)
Website: http://people.cis.ksu.edu/~russfeld
Office Hours: MWF 9:30 - 10:30 AM in 2214 Engineering Hall or by appointment

Teaching Assistants

A 1-6: Logan Brecheisen (lbrech7)   **A 7-12:** Joy Hauser (jhauser)
B 1-6: Casey Poole (caseypoole)   **B 7-12:** Robert "Casey" Lafferty (rclafferty)

Grading

Team Assignments
15% - Wiki Article*
15% - Topic Research*

* Team projects include +/- 50% peer review.
* 10% of grade depends on turning in review.

Individual Assignments
28% - Class Attendance and Participation
     (1% each) (2 unexcused absences free)
21% - Programming & Written Assignments
     (3% each, 8 total) (drop 1 lowest)
21% - Online Blog Assignments
     (3% each, 8 total) (drop 1 lowest)

Late Work

Late work will receive penalty of 10% of the possible points for each day it is late. Missed work cannot be made up except under extenuating circumstances.

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/ Kindle edition available
- "Nine Algorithms That Changed the Future: The Ingenious Ideas That Drive Today's Computers" by John MacCormick.
  ISBN 0691158193 - http://www.amazon.com/dp/0691158193 Kindle edition available
- "Tubes: A Journey to the Center of the Internet" by Andrew Blum.
  ISBN 0061994952 - http://www.amazon.com/dp/0061994952 Kindle edition available

Software - Scratch 2.0: http://scratch.mit.edu; Google Blockly - http://blockly.russfeld.me/
Academic Honesty - The honor system website can be reached at: http://www.ksu.edu/honor.

Getting Help

- 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

CIS 115 - Introduction to Computing Science (Spring 2016)
Schedule (as of 1/5/2016)

Date	Lecture	Topic / Blog Article	Reading (Before Class)	Activity
1/19/16	1	What is Computing Science?	<none>	Get a CIS Account!
1/21/16	2	Teams, Projects, and Success	Syllabus & Assignments	Team Resume
1/26/16	3	Early Computing Machines	POTS 1 - Nuts and Bolts	Visual Programming Intro
1/28/16	4	Bits and Boolean Algebra	POTS 2 - Universal Building Blocks	Loops & Conditionals
2/1/16	**Blog 1**	**Personal Introduction**		
2/2/16	5	Programming	POTS 3 - Programming	**1 - Loops & Conditionals**
2/4/16	6	Universal Computers	POTS 4 - How Universal are Turing Machines?	Variables & Lists - Turing Machine
2/9/16	7	Algorithms	POTS 5 - Algorithms and Heuristics	**2 - Sorting**
2/11/16	8	Encoding Data	POTS 6 - Memory: Information and Secret Codes	Encoding Worksheet
2/15/16	**Blog 2**	**Algorithms**		
2/16/16	9	Architecture & Finite State Machines	POTS 7 - Speed: Parallel Computers	**3 - Finite State Machine**
2/18/16	10	Human Computer Interaction	POTS 8 - Computers that Learn and Adapt	<none>
2/23/16	11	History of the Internet	POTS 9 - Beyond Engineering	**4 - Parallel Programming**
2/25/16	12	High Performance Computing (Dr. Andresen)	TUBES 1 - The Map	*Internet Discussion*
2/29/16	**Blog 3**	**Making Meaning - POTS**		
3/1/16	13	How the Internet Works	TUBES 2 - A Network of Networks	Packet Switched Network
3/3/16	14	*Web Programming 1*	TUBES 3 - Only Connect	*Web Programming*
3/8/16	15	*Web Programming 2*	TUBES 4 - The Whole Internet	***5 - Web Programming***
3/10/16	16	Software Engineering	TUBES 5 - Cities of Light	<project work time>
3/11/16		**TOPIC RESEACH PROJECT DUE!**		
3/14-3/18		***Spring Break - No Class!***		
3/21/16	**Blog 4**	**The Internet's Influence**		
3/22/16	17	Topic Presentations 1	TUBES 6 - The Longest Tubes	<none>
3/24/16	18	Topic Presentations 2	TUBES 7 - Where Data Sleeps	<none>
3/29/16	19	Topic Presentations 3	*9ALG 1 - Introduction*	<none>
3/31/16	20	Computer Graphics	*9ALG 2 - Search Engine Indexing*	Drawing & Moving in Scratch
4/4/16	**Blog 5**	**Making Meaning - TUBES**		
4/5/16	21	*Searching & Information Retrieval*	*9ALG 3 - PageRank*	*Page Rank*
4/7/16	22	Cryptography	*9ALG 4 - Public Key Cryptography*	**6 - Cryptography**
4/12/16	23	Video Games (Nathan Bean)	*9ALG 5 - Error Correcting Codes*	Video Game Sample
4/14/16	24	Artificial Intelligence	*9ALG 6 - Pattern Recognition*	**7 - Mars Rover**
4/15/16		**WIKI ARTICLE DRAFT DUE!**		
4/18/16	**Blog 6**	**Computing Science & Mathematics**		
4/19/16	25	*Compression & Error Correcting*	*9ALG 7 - Data Compression*	*Compression Worksheet*
4/21/16	26	Informatics & Big Data (Dr. Hsu)	*9ALG 8 - Databases*	**8 - Video Game**
4/26/16	27	Cybersecurity	*9ALG 9 - Digital Signatures*	Cybersecurity Demo
4/28/16	28	*Computability (Dr. Schmidt)*	*9ALG 10 - What is Computable*	<none>
4/29/16		**WIKI ARTICLE DUE!**		
5/2/16	**Blog 7**	**Making Meaning - 9ALG**		
5/3/16	29	Robotics & Leftovers	*9ALG 11 - Conclusion*	Lego Robots
5/5/16	30	The Future	<none>	<none>
	Blog 8	**Where do I go from Here?**		