CT 100 Course Syllabus
Riley – spring, 2016

Professor Information
Name: David Riley
Office: 212 Wing Communication Center
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Office Hours:
  9 - 11 a.m. Monday
  1:30 - 2:30 Tuesday & Thursday

Website
URL: cs.uwlax.edu/~riley
Website contents:
  Partial lecture notes.
  CT100 Learning Objectives
  Video podcasts with additional examples

Textbook
Computational Thinking for the Modern Problem Solver, Riley & Hunt.

Assessment of Learning
Two regular exams ................................................................. 27% each
Final Exam (cumulative) ....................................................... 34%
Labs, projects & quizzes ..................................................... 12% total

Attendance
Experience has taught us of the importance on CT100 attendance. Your instructor will provide access to some video podcasts, partial class notes and other written materials. Still, there is no equivalent way to fully makeup for a missed lecture or a missed quiz.

About CT 100
Without computers most of the important discoveries of the last two decades would not have been possible. Without computers our everyday lives would be very different. The purpose of CT100 is to glimpse into the mind of computer scientists - to explore their tools, techniques and thought processes and see how these are widely relevant for our world today. Computational thinking is the application of algorithms and manipulation of information in ways that can assist you to go farther, regardless of your chosen profession.

Campus Disability Policy
Any student with a documented disability (e.g., physical, learning, psychiatric, vision, or hearing) who needs to arrange reasonable accommodations must contact the instructor and the Access Center (165 Murphy Library) at the beginning of the semester.
CT 100 Outline

What is CT? (Chapter 1)
• history of computation
• computational thinking

Data (Chapter 2)
• information and data
• data encoding (binary & decimal)
• file organization and web browsing
• intro to Alice programming

Logic (Chapter 3)
• English semantics and logic
• logical expressions
• decisions in algorithms

Modeling (Chapter 6)
• directed graphs
• activity diagrams
• state diagrams

Problem Solving (Chapters 4 & 5)
• divide and conquer strategies
• problem solving
• Alice programming

Data Organization (Chapter 7)
• indexing
• linking

Spreadsheets - a tool for 2D programming (Chapter 8)

String Programming
• strings
• regular expression pattern matching

Performance (Chapter 10)
• benchmarks
• counting analysis
• algorithms that are impractical or non-computable

Concurrency (Chapter 11)
• sorting networks
• conflicts and deadlock

Security (Chapter 12)
CT 100 Course Info

Course Methodology

CT100 meets three days per week. The class meetings will utilize a variety of professor lectures, interactive laboratory exercises, discussion, quizzes, and examinations. Meeting in Wing Room 6 allows for various types of integrated hands-on investigation of the course concepts.

The Significance of CT100

This course represents a new way to learn about computer science. CT100 is not intended to be a programming course, but students will be expected to perform a small amount of programming. CT100 is not a course in the use of productivity software, but students will use various software packages. Instead, CT100 is focused on the approaches, tools and techniques used by computer scientists in order to investigate and solve real world problems.

Responsibilities

...of the professor

• to be prepared for each class meeting

• to present material in ways that are clear, informative and relevant

• to provide appropriate answers to student questions

• to be available during office hours and other times by appointment

• to provide appropriate supplemental materials for this class

• to write and administer examinations to evaluate mastery of the material

• to assign projects and lab exercises that challenge and educate

• to be knowledgeable regarding computational thinking

...of the student

• to be prepared for each class meeting

• to attend class meetings, be attentive and participate appropriately

• to raise questions whenever the material is unclear

• to seek out assistance as needed from the professor

• to read the provided materials

• to prepare for and work responsibly on examinations

• to work diligently and complete assigned projects and labs

• to become knowledgeable regarding computational thinking