CS 2104
Introduction to Problem Solving

Faryaneh Poursardar
Virginia Tech
About me

Research Interests
• Computer Human Information Interaction,
• Digital Libraries,
• Web Archive, Information Retrieval, Machine Learning and Data Mining, Digital Data Preservation
Course Info

• Schedule:
  CRN 12687_201801, MWF 09:05 AM – 09:55 AM, MCB 113


• My Office hours:
  McBryde Hall 122, MWF 10 – 11 am, and by appointment

• Prerequisites:
  MATH 1205 or MATH 1526; ENGE 1024

• During the semester:
  Read the reading assignments before each class
  Be present and Participate in class
  Do homework afterward
Course Overview

• Heuristics for problem solving: externalize, deduction, and simplify
• Communicating problem solutions: argument & proof, presentation (written and oral)
• Problem-solving in the large: generating potential solutions, evaluating solutions, working in teams
• Human aspects: self-assessment, succeeding as a student, inter-personal problem solving
• Skills for problem types: verbal reasoning, analogy, comprehension, trends, deduction
• Problem-solving for computer scientists: programming and problem solving, computation in problem solving.
Course Objectives

Having successfully completed this course, the student will be able to:

• Identify skills and personality traits of successful problem solvers.
• Apply standard problem-solving heuristics to aid in problem solving related to computer science.
• Apply problem-solving techniques to programming activities.
• Apply problem-solving techniques to school and personal interactions.
• Apply pair and team problem-solving techniques.
• Generate potential solutions to problems with standard heuristics.
• Formulate and successfully communicate problem solutions.
Textbooks and Supplementary Materials

The primary textbooks are:


We may also read some selections from:

- How to Solve Almost Any Problem, Alan Barker, Pearson 2013

Recommended references: You may find some of these optional textbooks helpful, though none are required:

- Algorithmic Problem Solving, Roland Backhouse, John Wiley & Sons 2011
CANVAS

• Homework submission
• Communication/discussion
• Grades

Give yourself plenty of time to figure out how to work in Canvas.

• If you feel like you have an issue that needs clarification, feel free to contact either me or the GTAs.
Graduate Teaching Assistant

• Shuangfei Fan
  sophia23@vt.edu

office: Kelly Hall 219

Tuesday: 8:00am-11:00am
Thursday: 8:00am-11:00am
Friday: 8:00am-9:00am
Friday: 10:00am-12:00am
Friday: 4:00pm-5:00pm
• No cell phone use in class
# Grading Policy

<table>
<thead>
<tr>
<th>Grading</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance, in-class practice, quiz</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm exam</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>50%</td>
</tr>
<tr>
<td>Final exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

Extras : 1%
Homework

• Submission formats: **PDF (preferred)**, ASCII text, .doc, .docx or any readable format in Microsoft Word.

• Readability, clarity, and grammar are important

• You may not switch partners in the middle of an assignment

• Make one submission for the group

• State the contribution of EACH student to each problem

• VT Honor code
problem solving
• Force/add surveys

http://www.cs.vt.edu/F17Force-Adds

Password: 2104f_p@