CS 2104: Introduction to Problem Solving, Fall 2016
CRN 82440, MW 14:30–15:45, AA 7
CRN 82441, MW 16:00–17:15, AA 7
`http://courses.cs.vt.edu/cs2104/F16ltw/`

L.T. Watson
2000 Torgersen Hall
231-7540
laynew@acm.org

Prerequisites:

MATH 1205 or MATH 1526; ENGE 1024 or programming experience.

Topics Covered:

Errors in reasoning; verbal reasoning; analogy problems; heuristics; mathematical word problems; analysis of trends; lateral thinking; deductive and hypothetical reasoning; computational problem solving; problem solving in-the-large; generating, implementing, and evaluating solutions; discrete mathematics, statistics; interpersonal problem solving.

Texts:

H. S. Fogler and S. E. LeBlanc, *Strategies for Creative Problem Solving*, 2nd edition, Pearson, Upper Saddle River, NJ, 2008.

A. Whimbey and J. Lochhead, *Problem Solving & Comprehension*, 6th edition, Lawrence Erlbaum, Mahwah, NJ, 1999.

M. Levine, *Effective Problem Solving*, 2nd edition, Prentice Hall, Upper Saddle River, NJ, 1994.

Office Hours:

L. T. Watson: 122 McBryde Hall, MW 13:15–14:00, and by appointment.
GTA and UGTA office hours are posted at the course Web site.

Honor System:

The Honor System applies to this course and will be strictly enforced. See http://www.honorsystem.vt.edu/.

Assignments and Grading Policy:

The course will be graded on the basis of 1000 total assigned points. There will be in-class assignments and exercises, including quizzes and/or midterms. Roughly half the course grade will be based on in-class assignments, quizzes or tests, and the final. The remaining half will be based on weekly homework assignments.

Solutions to homework assignments will be submitted via Canvas (see the course website for a link to Canvas). We accept homework submissions in ASCII text, Postscript, or PDF (**we do not accept .doc or .docx formats**). Note that presentation (i.e., readability, clarity, and grammar) will count in grading.

One of the major topics covered in this course is pair problem solving. Some assignments are required pairs, some are required individual, and some are optional pairs. When students turn in a joint assignment, both students will normally receive the same grade. You are free to use different partners for different assignments. **Groups of more than two people working together on an assignment are strictly forbidden and will be treated as an honor code violation.** You may not switch partners in the middle of an assignment. In other words, you may not discuss solutions for any one assignment with more than one person in the class.

When students work in pairs, it is important that both students involved completely understand the answers that they submit. The instructor reserves the right to require any student

to present the answers to their homework assignment verbally to insure that each student does in fact meet the minimum requirement of understanding the solutions they submitted, and may reduce credit given for the assignment (to both students!) if the verbal answer is not compatible with understanding of the written answer. All joint submissions **must** contain a statement that clearly indicates, for **each** problem, the contribution of **each** student to the problem. Some possible contributions for a problem might include one or more of the following: Cracked the problem, wrote up the solution, found flaws/improved earlier versions of the solution. All homework submissions that involve working problems **must** contain the following *Pledge Statement*:

> "*I have not received unauthorized aid on this assignment. I understand the answers that I have submitted. The answers submitted have not been directly copied from another source, but instead are written in my own words.*"

Failure to follow any of the stated requirements may result in a **zero** on that assignment, without warning. Assignments are normally due to Canvas at 8:00AM on a given day (normally Friday). Assignments received late will *not be graded* unless the instructor has given a prearranged individual extension.

If any student needs special accommodations because of a disability, please contact the instructor during the first week of class.

The (common) final exam is tentatively scheduled for Wednesday, December 14, 2016 from 16:25–18:25 in AA 7. The nominal grading scale, which will almost surely be relaxed, is A: $\geq 95\%$, A−: $\geq 93\%$, B+: $\geq 91\%$, B: $\geq 87\%$, B−: $\geq 85\%$, C+: $\geq 83\%$, C: $\geq 77\%$, C−: $\geq 75\%$, D+: $\geq 73\%$, D: $\geq 69\%$, D−: $\geq 67\%$.

Attendance Policy:

Educational studies consistently show a strong correlation between class attendance and class grade. Much of the grading for this class will be based on in-class assignments and activities, some of which are difficult or impossible to make up at another time. Attendance to every class is mandatory, and will be monitored at every class meeting. Students will lose 10 points (1% of the semester grade) for every class missed. There are no excused absences for any reason. However, any student who needs to miss class for a legitimate reason can recover those points by scheduling a meeting with the instructor (normally this must be done before the next class) at which the student presents the gist of the material covered during the missed class. The instructor may choose instead of a meeting to have the student write a 1–2 page summary of the material from the missed lecture. Notice that the student is presenting the material, not the instructor! So the student will need to prepare for the meeting or the summary writeup by carefully reading the lecture notes and any associated reading assignments. Lecture notes will be available from the course website shortly before or after each lecture.

Electronic Information:

Information such as copies of the syllabus and assignments, assignment solutions, and class grades, will be made available through the class web site. Notice of homework deadlines, test dates, etc., will be posted at the course website. The course instructor accepts no responsibility or obligation for making such announcements in class. The course website is the official source for all course notifications. The course homepage URL is
`http://courses.cs.vt.edu/cs2104/F16ltw/`.