NOTE to prospective students: This syllabus is intended to provide students who are considering taking this course an idea of what they will be learning. A more detailed syllabus will be available on the course Canvas site for enrolled students and may be more current than this sample syllabus.

Course Name: Introduction to Computer Science II
Course Number: CS 162
Credits: 4

Course Description
Basic data structures. Computer programming techniques and application of software engineering principles. Introduction to analysis of programs.

Prerequisites: CS 161 [C] or EECS 161 [C]

Course Credits
This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits.

Measurable Student Learning Outcomes
At the completion of the course, students will be able to:
1. **Design** and **implement** programs that require:
   a. **multiple classes**, structures
   b. hierarchies of classes, structures
   c. understanding of abstraction, modularity, separation of concerns, exception handling
2. **Construct** and **use** basic **linear structures** (arrays, stacks, queues, and various linked lists) in programs, and be able to describe instances appropriate for their use.
3. **Classify** moderately complicated **algorithms** in these complexity classes: $O(1)$, $O(\log n)$, $O(n)$, $O(n \log n)$, and $O(n^2)$.
4. **Develop** test-data sets and testing plans for programming projects
5. **Produce recursive** algorithms, and choose appropriately between iterative and recursive algorithms.

Learning Resources

Note to prospective students: Please check with the OSU Bookstore for up-to-date information for the term you enroll (OSU Bookstore Website or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

This course is offered through Oregon State University Extended Campus: http://ecampus.oregonstate.edu.
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Canvas
This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course Canvas site you will access the learning materials, such as the syllabus, class discussions, assignments, projects, and quizzes. To preview how an online course works, visit the Ecampus Course Demo. For technical assistance, please visit Ecampus Technical Help.

Technical Assistance
If you experience any errors or problems while in your online course, contact 24-7 Canvas Support through the Help link within Canvas. If you experience computer difficulties, need help downloading a browser or plug-in, or need assistance logging into a course, contact the IS Help Desk for assistance. You can call (541) 737-8787 or visit the OSU IS Helpdesk online.

Evaluation of Student Performance
The list below indicates how the course learning outcomes will be measured:

- Projects – 30%
- Labs – 30%
- Group activities – 10%
- Quizzes/Test – 15%
- Final project – 15%
- Total – 100%

REMINDER: A passing grade for classes in CS is a C or above. A C- in a CS course is not considered a passing grade toward a CS degree or as a prerequisite for future CS classes.

Course Content

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<th>Week</th>
<th>Topic</th>
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<td>1</td>
<td>Pointers Review, Separate Compilation and Makefile</td>
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<td>2</td>
<td>Software Design, Testing and Debugging</td>
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<td>3</td>
<td>Classes and Inheritance</td>
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<td>Polymorphism and Virtual Functions</td>
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<td>5</td>
<td>Recursion</td>
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<tr>
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<td>File I/O and Linked Lists</td>
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<td>ADT: Stacks of Queues</td>
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<td>Complexity Analysis: Searching and Sorting</td>
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<td>STL, Templates and Exceptions</td>
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<td>Review of Recursion and Complexity</td>
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<td></td>
<td>Finals</td>
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Statement Regarding Students with Disabilities
Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Expectations for Student Conduct
Student conduct is governed by the university’s policies, as explained in the Student Conduct Code.

Academic Integrity
Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards, or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student’s own efforts or the efforts of another.

b) It includes:
   i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and
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texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.

ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).

iv) TAMPERING - altering or interfering with evaluation instruments or documents.

v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Tutoring

NetTutor is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.