Instructor: Mr. John E. Boon, Jr.

NOT AVAILABLE PERIODS FALL 2008

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tr>
<td>12:00-3:30pm</td>
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<td>6:00-9:00pm</td>
<td>1:00-3:00pm</td>
<td>11:30am-1:00pm</td>
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<td>4:30-7:10pm</td>
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<td>6:00-9:00pm</td>
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Mr. John E. Boon, Jr. is the course instructor for these class meetings. Mr. Boon was previously an Associate Professor of Computer Science and Chairperson, Department of Mathematics and Computer Science, Hood College. He recently re-joined the Hood College faculty. Mr. Boon is an Operations Researcher for RAND. Mr. Boon has an operations research and computer science consulting practice.

You are encouraged at any time to phone my cell number. I encourage you to contact me if you have any questions at all. I may be able to clarify requirements as well as suggest additional resources and strategies for a given problem. Be sure to (1) state your name, (2) state what I may do for you, (3) state your phone number twice, (4) state the hours during which I may return your call if you leave a voice message.

My complete list of contact information follows:
- My e-mail addresses: boonj@hood.edu
- WWW Home Pages: [http://cs.hood.edu/~boon](http://cs.hood.edu/~boon) course WWW pages
  [http://cs.hood.edu/~faculty/boon](http://cs.hood.edu/~faculty/boon) faculty information page
- Phone: (301) 606-4115 (cell)

Course Description:

This course will examine and discuss the life cycle of computer software. The major issues addressed are: analysis of the project, requirements specification, design, coding, testing and reliability and maintenance.

Prerequisites:

Prerequisite: A minimum of B- in CS 504, or permission of the instructor.

Course Goals:

Graduate-level academic instruction during this course will consist of:

- software life cycle models and software project planning;
- software systems requirements definition, verification, and validation;
- software engineering methodologies necessary to translate software requirements into software modules;
- software quality assurance methodologies;
- special topics in software engineering and current areas of software engineering research.

As a result of this instruction, each student should be:
aware of the research base in software systems analysis and software engineering;
able to identify areas of this research base applicable to their real application;
knowledgeable of strategies and heuristics for merging research based information with actual software production tasks

**Computer Requirement:**

Students must have an email address and must make that address known to the course instructor as soon as practical after the start of the course. Students may use their own computing resources (hardware/software tools) or those provided by Hood College computer labs. Students must have access to the Internet, have a web browser and the Acrobat Reader application.

**Instructional Objectives:**

Specific instructional objectives in software engineering are:

1. to emphasize the total life cycle nature of testing and to present strategies for imbedding testing throughout the software systems life cycle,
2. to integrate usability, reliability, maintainability, and reusability into the software life cycle,
3. to train students in the production of effective documentation for each software life cycle phase
4. to utilize the software engineering project as a laboratory for experimenting with software engineering methodologies.

**Required Texts:**


**Reference Text (available at the library):**


**Other Notable Texts and References:**


Gamma, E. *et al., Design patterns: Elements of Reusable Object-Oriented Software*, Addison-Wesley, 1995.


**A comment on text citations in this syllabus:**

Please remember that these texts have been chosen because they represent good reference materials for real use later in your career and because they help form a foundation of material for the lectures. The lectures will not be based solely on required text materials. Each of the texts has an excellent set of chapter references and bibliography. The instructor will use these materials during the course of lectures.

You will be expected to keep up with the readings by reading material before the class at which it will be discussed. You do not serve yourself or the objectives of your company by being exposed to these ideas for the first time in lecture. Keep notes in the margins or in a notebook to remind you to ask them during lectures later.

**Internet Resources, Library Reserve Texts, Information, Articles, and Videos:**

It is your responsibility to check the class WWW pages no later than 4pm each class day for updates and class information (http://cs.hood.edu/~boon). I tend to post extensive information on my class pages (e.g., important news items about the upcoming class, items important to the next class lecture, notes, links, problems, solutions, projects, programming resources). I promise to have the page updated by 4pm the day of class for any information you may need to bring with you to class that day.

**Reading Assignments:**

You will be expected to read assigned material before the class at which it will be discussed. You do not serve yourself by being exposed to these ideas for the first time in lecture. Keep notes in the margins or in a notebook to remind you to ask them during lectures later. You will be expected to search out and read additional material on topics during this course.

**Exams:**

A final examination is planned.

**Graded Assignments:**

Distribution of weights in grading:

- **Project Deliverables** (75%)
- **Team Participation** (15%)
- **Final Exam** (10%)

Assignments turned after the due date will not be accepted.
Grading Policy:

I will award partial credit for work done even if the result is incorrect, but this implies that you show all your intermediate work and clearly label your answer. I will deduct points for answers that do not make any sense at all; you should always check your work, even work done using the computer. The explanation of your work is as important as the work itself -- do not concentrate on the programs or mathematics and ignore the importance of clear descriptions of what you did and what it means.

The undergraduate grading criteria\(^1\) and graduate grading system\(^2\) will be followed in this course. I do not grade on a curve.

Attendance:

Class attendance is essential. Significant material is covered at each of our class meetings this semester. I may excuse absences if I am notified.

Academic Standards:

Students are reminded of sections in the current catalog: Undergraduate Academic Policies – Academic Honor Code\(^3\) and Graduate Academic Policies – Academic Standards\(^4\).

All assignments this semester are individual effort assignments. It is a violation of the rules of academic conduct in this class for individuals to collaborate with other individuals, whether or not they are members of this class, on assignments, unless specifically directed that such collaboration is allowed for a specific assignment by the professor.

During class, you are expected to concentrate on and contribute to class presentations, lecture, and group discussion. Small group discussions that distract from the ability of others in class to adequately concentrate upon class presentations, lecture, and group discussion will not be tolerated. Use of laptop or laboratory computers during class will be restricted to note taking and computer-based activities as assigned by the instructor. Internet surfing, writing of other papers, or use of programs not specifically related to the lecture will not be tolerated.

\(^1\) Hood College Catalog 2008-2010, pages 61-62.
\(^2\) Ibid, pages 280-281.
\(^3\) Ibid, page 51-52.
\(^4\) Ibid, pages 271-272.
TENTATIVE COURSE SCHEDULE
CS 424/524 Principles of Software Engineering
Hood College Fall 2009

Class meetings Thursday 6:20pm-8:50pm, HT 235
Class WWW page http://cs.hood.edu/~boon

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<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>Objectives</th>
<th>Text</th>
<th>Project Deliverable</th>
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<tbody>
<tr>
<td>1</td>
<td>8/27</td>
<td>Introduction to Software Engineering</td>
<td>S 1-4</td>
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<td>2</td>
<td>9/3</td>
<td>Engineering in Usability</td>
<td>Notes S 16</td>
<td>Resume</td>
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<td>3</td>
<td>9/10</td>
<td>Converting Customer Needs/Wants to Requirements</td>
<td>S 6-8</td>
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<td>4</td>
<td>9/17</td>
<td>Software Cost Estimation</td>
<td>S 26</td>
<td>Operations Concept</td>
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<td>5</td>
<td>9/24</td>
<td>Software Project Planning &amp; Management</td>
<td>S 5 &amp; 25</td>
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<td>6</td>
<td>10/1</td>
<td>Software Project Planning &amp; Management</td>
<td>S 27-29</td>
<td>Cost Estimation</td>
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<td>7</td>
<td>10/8</td>
<td>Software Verification and Validation</td>
<td>S 22-24</td>
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<td>[Midterm recess 10/10-10/13]</td>
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<td>8</td>
<td>10/15</td>
<td>Basic Software System Design</td>
<td>S 11-13</td>
<td>Requirements</td>
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<td>Specification</td>
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<td>[Midterm grades due 10/19]</td>
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<td>9</td>
<td>10/22</td>
<td>Specialized Software System Design Techniques</td>
<td>S 14-15</td>
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<td>10</td>
<td>10/29</td>
<td>[No class – Boon attending board mtg]</td>
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<td>11</td>
<td>11/5</td>
<td>Software Development Techniques</td>
<td>S 17, 20</td>
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<td>12</td>
<td>11/12</td>
<td>Managing Software After Delivery</td>
<td>S 21</td>
<td>Design Specification</td>
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<td>13</td>
<td>11/19</td>
<td>[No class – Boon attending board mtg]</td>
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<td>[Thanksgiving recess 11/25-11/29]</td>
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<td>14</td>
<td>12/3</td>
<td>Emerging Technologies</td>
<td>S 30-32</td>
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<td>15</td>
<td>12/10</td>
<td>Team solution demonstrations</td>
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<td>Delivered System &amp; Tests and Test results</td>
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<td>16</td>
<td>12/17</td>
<td>Exam Submissions and Class Recap</td>
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Final exam will be take-home to permit research and computer tool use
Final exam will be distributed December 10 and due start of class December 17