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| **neit-sig4-pos-blue-yel** | **Software Engineering** |

1. **COURSE INFORMATION**

**Introduction to Senior Project (SE 414), Spring 2019:**

3 Credit Hours and 3 Contact Hours  
 Every Monday, 5:45 - 8:24, Room N 215

**Scott Gooch, Adjunct Instructor:**

Telephone: (401) 340-6950

E-mail address: sgooch@neit.edu

Office location: N/A

Office hours: N/A

**Course description:** The objective of the senior project is to integrate skills learned during the students' time at New England Tech. Within a team of at least 2 and no more than 3 students, a real world application is developed over a period of 20 weeks. The Introduction to the Senior Project spans the first 10 weeks of this period and in this class, a proposal, a functional specification and a database design is created and implemented. In addition, Microsoft Project is used to develop and create a Gantt Chart that specifies in detail how the project will be implemented during the last 10 weeks of the senior project. The final project will be presented to the faculty and is evaluated by three faculty members.

**Course prerequisite(s):** SE 387, SE 396, SE 407, SE 421

**Required textbook:**

There is no required text for the course. There may be supplemental readings and videos assigned as homework.

**Course Learning Outcomes/Assessment measures:**

By the end of the quarter, the student will be able to:

* Produced the specifications and plans for implementing a software project during Quarter 12.
* Master the soft skills including learning independently, work in teams, communicate in writing, communicate orally, solve problems, work independently, give presentations, write reports, innovate, create proposals, lead a team, create specifications, mentor others, and identify customer needs.
* Apply and integrate the skills and techniques gained during the student's time at the New England Institute of Technology, including Algorithms and Data Structure, Design Patterns, UML diagramming, Data Normalization, Systems Analysis, and Project Management.

These are assessed through the satisfactory completion of a group project, and completing a prototype program and system specification.

**Evaluation and Grading Criteria:**

The final grade will be based on the instructor’s evaluation of how well the student has mastered the course objectives. The evaluation will be based primarily on a composite of the student’s performance on homework, labs, and class participation. Weighting of the major criteria is as follows:

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| Deliverable | Points |
| Project Propsal | 50 |
| Gantt Chart | 50 |
| Use Cases | 50 |
| Class Diagram | 50 |
| Database Design | 50 |
| Activity Diagrams | 50 |
| Sequence Diagrams | 50 |
| Prototype | 100 |
| Midterm Presentation | 100 |
| Final Presentation | 100 |
| Weekly Status Reports | 80 |
| Attendance | 100 |
| Wiki | 100 |
| Totals | 930 |

**Deductions Table:** The table below shows possible maximum deductions for late work.

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| Late 1 week | Late 2 weeks | Late 3 weeks | Late 4 weeks or more |
| 40% off | 80% off | 90% off | not accepted |

**Letter Grade:**

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| Letter Grade |  | Percentage |
| A |  | 93+ |
| A- |  | 90-92 |
| B+ |  | 87-89 |
| B |  | 83-86 |
| B- |  | 80-82 |
| C+ |  | 77-79 |
| C |  | 73-76 |
| C- |  | 70-72 |
| D+ |  | 66-69 |
| D |  | 60-65 |
| F |  | Below 60 |

**Attendance Policy (Tardiness):**

Regular and prompt attendance at all classes is expected of all students. All work missed by reason of absence or tardiness, regardless of the cause, must be made up to the satisfaction of the instructor.

**Make-up Policy:**

Please refer to Student handbook.

1. **COLLEGE POLICIES**

**Academic Honesty Policy:**

Any project, paper, or examination is expected to be the student’s own work, in the student’s own words. Willful academic dishonesty (including but not limited to copying another student’s work or allowing one’s own work to be copied; using notes or books during an examination without the instructor’s advance permission; presenting information or images copied from a book, journal, or online source as one’s own) will not be tolerated.

**Attendance and Class Participation:**

***Regular attendance is important to successful completion of the course***. Factual material and practical insights will be presented in class in addition to those covered in the required reading assignments. A significant portion of this class is lab work which must be done in class. Absence from class prevents the student from contributing to the class and in benefiting from the contributions of other students. Students missing classes, and the work associated with those classes, may jeopardize their ability to pass the course.

***Class participation means more than simply being present in class.*** Class participation means coming to class prepared by having read and studied the assigned readings and having completed assigned homework. Participation also means contributing to class discussions and answering questions that arise during the discussion of required material.

***Arriving at class on time is also important***. Late arrivals not only risk missing important information, but can cause distraction to the class. Being punctual is even more important in the working world, and should be practiced conscientiously in school.

**Other Policies:**

Each student is responsible for accessing the <http://wcb.neit.edu/shandbook/syllabuspolicies.pdf> web site and becoming familiar with all academic policies.

“**The design of this course as outlined in the syllabus requires you to do work outside of class to be successful.”**

1. **ADDITIONAL POLICIES**

Each week, you will be expected to:

* Work hard and use time effectively
* Come prepared and submit work on time
* Participate in class discussion and collaboration
* Download materials from Canvas and review and analyze them
* Respect and listen to peers or instructor when they are talking
* Pay attention during lecture
* Not to swear, and use the Internet to access work related sites only
* Not to use any electronic device during lecture (consistent violation of this policy will get you a one-letter deduction from your final grade)

Each week, you can expect me to:

* Answer your emails within 24 hours
* Grade your work within 1 week
* Discuss the content thoroughly
* Be compassionate and fair in grading
* Exert energy and time to care about your success
* Spend time making the class better
* Listen to you and respect you
* Be on time and to use them effectively

1. **ACADEMIC SUPPORT**

Academic support services are available through the Academic Skills Center, Student Support Services, and the **Library** as well as in the department. See the **tutoring** schedule.

**IT Department Contact Person for Student Concerns:**

If you have concerns or questions about IT Department issues please contact

Marty Truchon/Assistant Department Chair

etruchon@neit.edu

739-5000 ext 3651, office: N240

1. **COURSE SCHEDULE**

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| **Week** | **Topic** | **In-class Activity/Assignment\*** | **Out-of-class Activity/Assignment** | **Due** |
| **One** | Project Proposal,  Collaborate,  Code repository | - Introduction and Project Idea Development. One-page, single-spaced detailed narrative. Present idea at end of class. | Enhance Project Proposal based on faculty feedback. Think about how the team will divide the work (i.e., plan project and create a draft of Gantt Chart.)  -Weekly Status Report | Week One |
| **Two** | Prototypes | - Begin Prototype (UI only, no coding). Use Balsamiq.com or Visio. Wireframes only, showing main screens. Include screen navigation diagram.  *- Submit weekly Status Report. Scrum meeting. Grade your peers.* | - Modify screen navigation flow, designs, and layouts based on instructor’s input.  - Start your Wiki. | Week 4 |
| Use Cases | - Begin Use Cases. Research proper drawing of all diagrams. All symbols and illustrations should adhere to standard UML notation.  *- Submit weekly Status Report. Scrum meeting. Grade your peers.* | - Refine and complete all Use Cases before next class.  - Consider Google Site, Fandom.wikia.com, and Wikispaces; a member should be working on your wiki. | Week 3 |

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| **Three** |  | | - Revisit Prototype & Use Cases and add details per conversation with peers. Modify other components of the application if they are not aligned to new ideas.  *- Submit weekly Status Report. Scrum meeting. Grade your peers.* | | All members must come to an agreement on the design and complete the deliverable. Make sure there is alignment on all components of the project. | |  |
| **Four** | Database Design | | - Begin Database Design. ERD should have table names, fields, and their attributes. Establish the correct relationships between tables. Normalization is required\*.  *- Submit weekly Status Report. Scrum meeting. Grade your peers.* | | Review the table relationships and normalization. Incorporate professor’s comments, add details, and update your Entity Relationship Diagram. Prepare for midterm. | | Week 5 |
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| **Five** | - Midterm (presentation)  - Activity Diagrams | | - Current state of Wiki and Binder will be reviewed as part of midterm exam.  - Begin Activity Diagrams  *- Submit weekly Status Report. Scrum meeting. Grade your peers.* | | - Iterate (go back) to all your project’s components and integrate ideas gained during the presentation.  - Complete the Activity Diagrams. | | Week 5  Week 6 |
| **Six** | | Class Diagrams | | - Class Diagrams should include API (class names, member variables, and member method signatures). No coding required. How these class collaborate? (e.g., inherited, composed, delegated, morphed, etc.)  *- Submit weekly Status Report. Scrum meeting. Grade your peers.* | | There should be consensus among all members regarding the classes and their relationships to each other. Complete Class Diagrams and their interconnections before start of next class. | Week 8 |

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| **Seven** | Sequence Diagrams | - Begin Sequence Diagrams. The use of standard UML is mandatory. All members should contribute to the details of the logic and processes required on your project.  *- Submit weekly Status Report. Scrum meeting. Grade your peers.* | Common agreement among all team members must be sought. Knowledge created must come from combining peers’ ideas. Complete the Sequence Diagrams. | Week 9 |
| **Eight** | Gantt Charts | - Finalize the project plan and Gantt Chart you started in week #1. The use of Microsoft Project is highly encouraged. The plan should focus more on what is left to do for this quarter, and most of all for what to execute during Senior Project II.  *- Submit weekly Status Report. Scrum meeting. Grade your peers.* | Rethink your Gantt Chart: What are the main tasks to construct? Who will do these tasks? How long will it take to build each components? When to start testing? Who will update the documentation, the binder, the help system, and the wiki? | Week 9 |
| **Nine** | Wiki  Binder  Practice | - Prepare for Final Presentation *(dry run presentation)*  *- Submit weekly Status Report. Scrum meeting. Grade your peers.* | Complete all documentation and submit binder and the link to your wiki. | Week 9 |
| **Ten** | Finals (presentation) | - Functional specifications and technical documentation will be graded. The presentation should include a working electronic prototype.  *- Grade your peers.* | - Continue coding during the break.  - Make sure all show-stopper components are prototyped and functional (e.g., email, DB and Internet connection, web service, etc.) | TBD |

***No work will be accepted for grading after the last scheduled class meeting of Week 10 of the term.***

**Caveat**NEIT reserves the right to change the above schedules and requirements without advance notice.