

Engineering Technology –ECET Option

Course Number and name: ET 262 Software Technology I

Credits & Contact Hours: 3cr. each week has three lectures of 50 min. each. Total semester contact hours are approximately 37.5.

Instructor's name: Carmen C. Boje

Textbook title, author, and year: Richard A. Johnson, An Introduction to Java Programming and Object-Oriented Application Development. Thomson Course Technology, 2007, ISBN 0-619-21746-4.

supplemental materials – JAVA, Notepad, VI, DOS, Internet Explorer, Windows 7.

Specific Course Information:

- a. **Course Catalog Description** - An introduction to computer programming concepts as applied to engineering technology. Includes basic logic design, algorithm development, debugging and documentation. History and use of computers and their impact on society. Satisfies general education computer science requirement.
- b. **Prerequisite** – ET 120, Math 121 G
- c. This course is required for both the ECET and IET degrees

Course Goals & Objectives:

- a. This course provides an introduction to Java programming and object-oriented application development. It is intended for beginning programming students in computer science or computer information systems. All fundamental programming concepts including control structures, VI and DOS prompt are covered.
- b. **Related ABET Student Outcomes:** The following are the student outcomes that directly relate to Criterion 3.

an appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines; including:

- 2) **The use of application software**, the design and use of operating systems, the analysis, design, testing, and documentation of computer programs in support of electronic, instrumentation, communications, control, and/or computer systems. Also ABET 2.b, 2.c, 2.d, 2.f

Course topics and lecture hours devoted to each topic:

TOPICS	HRS.
• Computers, Programming, and Application Development	6
• Fundamentals of Java Programming	7
• Making Decisions with Java	7
• Repeating Program Statements	8
• Methods and Classes	7

Laboratory Projects: Each laboratory class is 50 minutes. Laboratory exercises are done in conjunction with the text readings and the lecture materials. The laboratories are designed to learn to program and debug JAVA programs. **Equipment utilized by the students include:** computers with JAVA, Notepad, VI and DOS editor, Internet Explorer, Windows 7 installed.

Example of topics for laboratories include:

1. Assignment 1: Hello World using scanner class, directory creation and navigation tree
2. Assignment 2: Hello world using GUI class
3. Assignment 3: Average
4. Assignment 4: Area
5. Assignment 5: Volume
6. Assignment 6: Temperature conversion
7. Assignment 7: Marathon
8. Assignment 8: Gratuity
9. Assignment 9: Greater Than
10. Assignment 10: Activity
11. Assignment 11: Min Max Average
12. Assignment 12: Checking a number
13. Assignment 13: Raise to a Power
14. Assignment 14: Triangle Perimeter
15. Assignment 15: Sum of Integers using the While loop
16. Assignment 16: Sum of Integers using the For loop
17. Assignment 17: Sum of Integers using the Do While loop
18. Assignment 18: Integer Math
19. Assignment 19: Miles to kilometers conversion
20. Assignment 20: Student GPA
21. Assignment 21: Upper to Lower case conversion
22. Assignment 22: Calculate GPA using classes
23. Assignment 23: Calculator using classes
24. Assignment 24: Carbon - 14

Prepared by: Carmen C. Boje

Date: 1/10/11