SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: SOFTWARE ENGINEERING

Code No.:   CET 305

Program: COMPUTER ENGINEERING TECHNOLOGY

Semester: SIXTH

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Author: F. TURCO

New: Revision: X

Approved: _Chairperson_   Date: _90/02/08_

<u>CET305</u>

<u>SOFTWARE ENGINEERING</u>

<u>GENERAL OBJECTIVES</u>

This course is the follow up course for systems analysis and
design. Once the student has a grasp of SDLC and an understanding
of the system requirements he/she will actually develop the system
in this system in this course.

<u>TEXTBOOKS:</u>

    1.   "Modern Structured Analysis" by Edward Yourdon.

<u>ASSESSMENT:</u>

    Theory Tests, Practical Tests and Quizzes   40%
    Assignments   60%

    Some minor modifications to the above percentages may be
    necessary. The instructor reserves the right to adjust
    the mark up or down 5% based on attendance,
    participation and whether there is an improving trend.

  * - All Assignments must be completed satisfactorily to
    complete this course. Late hand in penalties will be 5%
    per day. Assignments will not be accepted past one week
    late unless there are extenuating and legitimate
    circumstances.

<u>BLOCK 1   PLANNING A SOFTWARE PROJECT (PROJECT MANAGEMENT)</u>

At the end of this block the student shall be able to:

1.   Understand the concept of planning and its relevance.
2.   Define project goals and requirements.
3.   Discuss the relationship of planning with respect to project
    size.
4.   Discuss the project planning development process including:
        a)   Project Phases.
        b)   Milestones, Documents, Reviews.
        c)   The cost aspects of each phase of the project.
        d)   Prototyping.
        e)   Successive versions.
5.   Discuss the project planning organizational structures
    including:
        a)   Project Format
        b)   Project team structure
        c)   Project quality assurance
        d)   Project verification and validation
6.   Define and Maintain a GAUNT Chart of the plan and actual time
    taken for the assigned tasks.

BLOCK 2   COMPUTER SYSTEM DESIGN AND PROGRAMMING

At the end of this block the student shall be able to:

1.   Discuss the technical issues of converting the functional specification to a computer system.
2.   Define the file sizes and tool limitations.
3.   Describe structured coding techniques and style.
4.   Prepare program specifications.
5.   Develop the programs required to build the system.
6.   Demonstrate effective program coding and testing.
7.   Coordinate and execute effective system testing.

BLOCK 3   VERIFICATION AND VALIDATION TECHNIQUES

1.   Discuss the purpose of software quality assurance.
2.   Demonstrate the usefulness of walkthroughs and inspections throughout the software life cycle.
3.   Demonstrate unit testing and debugging.
4.   Describe software system testings such as:
         a)   integration testing
         b)   acceptance testing
5.   Produce a system overview document.
6.   Post implementation managerial presentation.

BLOCK 4   SOFTWARE MAINTENANCE

At the end of this block the student shall be able to:

1.   Define the maintenance phase of the software life cycle.
2.   Describe the activities that enhance maintainability during development.
3.   Discuss the managerial aspects of software maintenance.
4.   Discuss automated tools for software maintenance.

GRADING SCHEME

1. ### TESTS
   Written tests will be conducted as deemed necessary; generally at the end of each block of work. They will be announced about one week in advance. Practical on-line tests will be conducted in which time to complete the assigned problems will be a factor in the evaluation. Quizzes may be conducted without advance warning.

2. ### ASSIGNMENTS
   Assignments not completed by the assigned due date will be penalized by 5% per day late. All assignments must be completed satisfactorily to complete the course.

3. ### GRADING SCHEME

A+	90	-	100%	Outstanding achievement
A	80	-	89%	Excellent achievement
B	70	-	79%	Average Achievement
C	55	-	69%	Satisfactory Achievement

   U   Incomplete: Course work not complete at Mid-term. Only used at mid-term.

   R   Repeat

   X   A temporary grade that is limited to instances where special circumstances have prevented the student from completing objectives by the end of the semester. An X grade must be authorized by the Chairperson. It reverts to an R if not upgraded in an agreed-upon time, less than 120 days.

4. ### UPGRADING OF INCOMPLETE
   When a student's course work is incomplete or final grade is below 55%, there is the possibility of upgrading to a pass when the student's performance warrants it. Attendance and assignment completion will have a bearing on whether upgrading will be allowed. A failing grade on all tests will remove the option of any upgrading and an R grade will result. The highest grade on re-written tests or assignments will be 56%.

   Where a student's overall performance has been consistently unsatisfactory, an R grade may be assigned without the option of make-up work.

   The method of upgrading is at the discretion of the teacher and may consist of one or more of the following options: assigned make-up work, re-doing assignments, re-writing of tests, or writing a comprehensive supplemental examination.