COURSE DESCRIPTION

1. Course number and name: CPT 4010
2. Credits and contact hours: 3 credits, 45 contact hours
3. Course coordinator: Dr. J. D. Coder
5. Specific course information
   a. Catalog description: An introduction to the basic principles of software engineering. Structured object oriented, and formal approaches are studied, with emphasis on life cycles, object-oriented techniques and team-oriented software development.
   b. Prerequisites or co-requisites: CPT 3010, Database and Information Management; CPT 3015, Networks and Data Communication
   c. Required, elective or selective elective? Selective elective.
6. Specific goals for the course
   a. Outcomes of instruction
      i. Develop a substantial team-oriented software application using the major aspects of software development: definition/requirements, analysis, planning, design, implementation, testing and deployment.
      ii. Understand advanced concepts in O-O analysis, planning, design, implementation, testing and deployment of software.
      iii. Collaborate in a team environment.
      iv. Demonstrate effective communication orally and in writing.
   b. Student outcomes addressed by the course
      i. Student outcomes (b) (computing tools), (c) (design), (d) (teams), (e) (social and ethical issues), (f) (communication), and (j) (leadership).
7. Topics covered
   a. Introduction, score of software engineering
   b. Software life cycle
c. Java review
d. The software process
e. Basic GUI components
f. The specification phase
g. Advanced GUI components
h. Object-oriented analysis
i. Targeted prototype
j. Object-oriented design
k. Coupling, cohesion, polymorphism
l. Implementation
m. Testing