NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE

COURSE SYLLABUS

Course Title: Systems Analysis and Design **Course #:** CSC* 250

Course Description: 3 Credits. Introduction to analysis and design of business management systems, through the three stages of business systems design: analysis of information flow, systems specification and equipment, and selection and implementation of the system.

Pre-requisite/Co-requisite: CSC* 104. CSC* 233 is recommended.

Goals: Students are expected to

- be able to demonstrate knowledge and understanding of topics in the computing discipline and industry, both academically and within the needs of the workplace, as defined by the listed outcomes below.
- be able to articulate both verbally and written their scope of expertise in completing the study of course topics as they relate to the listed outcomes.
- increase their communication and presentation skills as they integrate computer knowledge into business systems using hardware and software components as required by the objectives in this course.

Outcomes: Upon successful completion of this course students will be able to:

(1) Describe the building blocks of an information system including
   (a) People
   (b) Data
   (c) activities
   (d) networks
   (e) technology

(2) Define systems planning, systems analysis, systems design, systems implementation, and systems support.

(3) Compare and contrast the systems development life cycle and system development techniques, including structured programming, modern structured analysis, structured design, information engineering, and prototyping.

(4) Describe the Software Development Life Cycle (SDLC), and explain how it serves as a framework for systems development and business modeling.
   (a) to study the life cycle phases leading to the development of system requirements.
   (b) to examine methods, techniques, and models that can be used to determine and document the requirements for an information system.
   (c) to examine that initial stages in the transition from analysis to design.
   (d) to study various diagrams that are used to construct models of an information system including use case diagrams, interaction diagrams, object diagrams, state-transition diagrams, attribute dictionaries, decision tables and trees, and structured English.
   (e) to perform process analysis and design to distribute data and activities into design units.
   (f) to understand and explain the phases of the classic systems development life cycle (ex deployment and maintenance) and apply its early phases to a small, real-world, externally sponsored case study.

(5) Describe the steps in a preliminary investigation and the end product of an investigation
   (a) Understand the reasons and main characteristics of continued business process (re)design.
   (b) Understand and participate in task-centered needs/use-case analysis.
   (c) Document, read and understand the results of task-centered use-case analysis.
   (d) Refine business process models based on newly collected information.
   (e) Ask business-relevant questions associated with information system design choices and proposals.
   (f) Specify conceptual architectures for a variety of business information system solutions.
   (g) Communicate design decisions and design motivations within and across teams of designers and to the sponsoring agency.

(6) Analyze and create a system design for business cases
   (a) Explain data and processing analysis
   (b) Explain, analyze, and design system implementation requirements, interface and configuration requirements, systems operations, support services, and security methods and systems.

(7) Develop effective documentation methods to use during systems development
   (a) to describe, understand, and draw data and process modeling concepts and tools, including data flow diagrams, a data dictionary, and process descriptions; and object models including objects, attributes, methods, messages, classes, and instances
   (b) to describe and explain the advantages and disadvantages of software outsourcing options, including offshore outsourcing and the role of service providers

(8) Explain the concept of user interface design and human-computer interaction, including the basic principles of user-centered design

(9) Define the systems analyst's role and responsibilities in a typical organization.

(10) Explain the importance of software quality assurance and software engineering

(11) Develop an overall training plan with specific objectives for each group of participants, compare in-house and outside training providers, and describe effective training techniques

(12) Assess future challenges for IT professionals as technology reshapes the workplace

College Policies

Plagiarism: Plagiarism and Academic Dishonesty are not tolerated at Northwestern Connecticut Community College. Violators of this policy will be subject to sanction. Please refer to your "Student Handbook" under "Policy on Student Rights," the Section entitled "Student Discipline," Section 2, Item 10 (pg. 45 in the 2004-2005 edition) for additional information.

Americans with Disabilities Act (ADA): The College will make reasonable accommodations for persons with documented learning, physical, or psychiatric disabilities. Students should notify Roseann Dennerlein, the Counselor for Students with Disabilities. She is located at 56 Park Place East, in the Center for Student Development. Her phone number is 860-738-6307 (V/TTY) and her email is rdennerlein@nwcc.commnet.edu.

School Cancellations: If snowy or icy driving conditions cause the postponement or cancellation of classes, announcements will be made on local radio and television stations. Students may also call the College directly at (860) 738-6464 to hear a recorded message concerning any inclement weather closings. Students are urged to exercise their own judgment if road conditions in their localities are hazardous.