

**Computer Programming Department**  
**Business/Public Service Division**  
**GREENVILLE TECHNICAL COLLEGE**

**COURSE SYLLABUS**

**Course Title:** Systems and Procedures

**Course Number:** CPT 264

**Lecture hours per week:** 3.0

**Lab/Clinic Hours:**

**Semester credit hours:** 3.0

**Prerequisites:** CPT 236 or CPT 286 and SPC 205

**Catalog Course Description:**

This course covers the techniques of systems analysis, design, development, and implementation.

**Purpose of the Course:**

To train the student in the techniques and the methodology employed by a Systems Analyst during the study, design, and implementation of a business information system.

**Required text(s) or other materials:**

1. Systems Analysis and Design; Eighth Edition: Video Enhanced; Shelly, Cashman, Rosenblatt; Course Technology; ISBN: 978-0-538-47443-6
2. NOTE: Students in traditional classes must access Blackboard for course-related information. Students in hybrid and online classes will access their online content through Blackboard.

**COLLEGE-WIDE STUDENT LEARNING OUTCOMES**

1. Communication – Students will demonstrate the ability to use active reading and listening skills and to produce effective written and oral communication for varying audiences.
2. Information Technology and Technological Literacy – Students will demonstrate competency in using computer technology within a field of study.
3. Critical Thinking/Reasoning – Students will demonstrate the ability to apply the scientific method, mathematical processes, and research skills to analyze and solve problems/issues by using reflection and reasoning to justify conclusions.
4. Professional and Personal Responsibility – Students will demonstrate the ability to exhibit conduct, attitudes, and etiquette appropriate to the student's community and chosen career. Students will demonstrate the ability to manage time, to use effective interpersonal skills, and to display responsible behavior.
5. Diversity – Students will demonstrate the ability to recognize diversity and to demonstrate respectful conduct and attitudes toward all. Students will demonstrate the ability to explain how global issues impact life, work, and opportunities.

*Approved March 26, 2009*

## COMPUTER PROGRAMMING PROGRAM STUDENT LEARNING OUTCOMES

Upon successful completion of the CPT/Programming program, the graduate will be able to:

1. Students will be able to analyze, design, develop, and document solutions that will satisfy the information needs of business users using established design methodologies and standards.
2. Students will be able to design, create, test, and document logical programming solutions to prescribed specifications following established standards and using current development environments and languages for application development and database management.
3. Students will be able to demonstrate the knowledge and ability to install and maintain microcomputer hardware and operating system software.
4. Students will be able to demonstrate the use of a minimum of three business application software packages.
5. Students will be able to demonstrate fundamental team building, project management, and presentation skills by participating in team projects that include team goals and values, a development methodology for documentation and coding, group presentations, and exposure to topics such as diversity, time management, and goal setting.
6. Students will be able to demonstrate the ability to take initiative, assume responsibility, and work under pressure with minimum supervision by successfully completing "hands-on" computer lab assignments.

## CPT 264 COURSE OUTCOMES

Students who successfully complete the above course will have demonstrated the skills necessary to accomplish the following objectives with a minimum competency level of 70 percent.

1. Students will be able to describe the phases and objectives of the development life cycle and what takes place in each phase.
2. Students will be able to analyze and describe the different development methodologies such as agile, waterfall, iterative, and the implication of using no methodology.
3. Students will be able to explain how and why systems projects are initiated and evaluated.
4. Students will be able to describe documentation methods used by different development methodologies.
5. Students will be able to describe development strategies using tools such as joint application development (JAD), rapid application development (RAD), and prototyping in building business projects.
6. Students will be able to describe object-oriented systems development and discuss how this approach differs from non-object-oriented systems development.
7. Students will be able to design and develop a set of data flow diagrams for a Management Information System for a business process.
8. Students will be able to demonstrate the use of common techniques such as system flowcharts, entity relationship diagrams (ERD), UML diagrams, cost-benefit and payback analysis for the design of a management information system.
9. Students will be able to describe the difference between a top-down design and modular design as it relates to application development.
10. Students will be able to analyze, design, and document a proposed solution to a business process by completing a team project.

*The objectives of the CPT 264 course are intended to meet the CPT/Programming program competencies numbered 1, 4, and 5 above.*

## CPT 264 – Main Topics

### AN INTRODUCTION TO SYSTEMS DEVELOPMENT Tentative Schedule

#### Week 1

- Chapter 1 Introduction to Systems Analysis and Design
- The Impact of Information Technology
  - Information System Components
  - Understanding the Business
  - Impact of the Internet
  - How Business Uses Information System
  - Information System Users and Their Needs
  - System Development Tools and Techniques
  - Systems Development Methods
  - Planning and Modeling a Systems Development Project
  - Systems Development Guidelines
  - Information Technology Department and the Systems Analyst Position

Case 01-02 Rapid Application Development (RAD) Tools Assignment Due

#### Week 2

##### THE SYSTEMS ANALYST'S TOOLKIT 1

- Communications Tools
- Successful Communications Strategies
- Written Communications
- Oral Communications

- Chapter 2 Analyzing the Business Case
- The Strategic Planning Process
  - Information Systems Projects
  - Evaluation of Systems Requests
  - Overview of Feasibility
  - Evaluating Feasibility
  - Preliminary Investigation Overview

Case 02-01 System Review Committees Assignment Due

#### Week 3

##### THE SYSTEMS ANALYST'S TOOLKIT 3

- Financial Analysis Tools
- Describing Costs and Benefits
- Cost-Benefit Analysis

- Chapter 3 Managing Systems Projects
- Gantt Charts
  - Pert/CPM
  - Risk Management

**TEST #1 – Chapters 1, 2, and 3 and Systems Analyst’s Toolkit – Parts 1 and 3**

Week 4

Chapter 4      Requirements Modeling  
                    JAD  
                    RAD  
                    Agile

Form Groups to begin working on group assignments (three items due in week 12, 13, and 14)

Week 5

Chapter 5      Data and Process Modeling  
                    DFD  
                    Data Dictionary  
                    Process Description Tools  
                    Logical Versus Physical Models  
                    Ethics

Week 6

Chapter 6      Object Modeling  
                    Terms  
                    Concepts  
                    Relationships

**THE SYSTEMS ANALYST’S TOOLKIT 2**

CASE Tools  
Overview of CASE Tools  
CASE Terms and Concepts  
Integrated Development Environments  
CASE Tool Examples  
Future Trends

Week 7

**THE SYSTEMS ANALYST’S TOOLKIT 4**

Internet Resources  
Search Engines  
Subject Directories  
Communication

**TEST #2 – Chapters 4, 5, and 6 and Systems Analyst’s Toolkit – Parts 2 and 4**

Week 8

Chapter 7      Development Strategies  
                  Internet Impact  
                  Outsourcing  
                  In-house options  
                  Systems Analyst Role  
                  Prototyping

Week 9

Chapter 8      Output and User Interface Design  
                  Types of output  
                  User Interface Design  
                  Input Design

Week 10

Chapter 9      Data Design  
                  Data Design Concepts  
                  DBMS Components  
                  Web-Based Database Design  
                  Data Design Terminology  
                  Entity-Relationship Diagrams  
                  Normalization  
                  Data modeling  
                  Data storage and access  
                  Data Control

Week 11

Chapter 10     System Architecture  
                  Planning the Architecture  
                  Servers  
                  Clients  
                  Internet-Based Architecture  
                  Process Modeling  
                  Network Models  
                  Wireless Networks

**TEST #3 – Chapters 7, 8, 9, 10**

Week 12

Chapter 11     Managing System Implementation  
                  Software Quality Assurance  
                  Application Development  
                  Structured Application Development  
                  Object-Oriented Application Development  
                  Agile Application Development  
                  Coding  
                  Testing the system

Documentation  
Training  
Data Conversion  
System Change Over

Case 11-1 PseudoCode Group Project Due

Case 11-2 Structured Walkthrough Assignment Due

Week 13

Chapter 12     Managing Systems Support and Security  
                  Maintenance  
                  Performance  
                  Security  
                  Backup and Recovery  
                  System Obsolescence

Week 14

System Proposal Group Project Due

Week 15

System Proposal Group Presentation Due – Presentation made at the Barton Campus.

Study for Final

**Final Exam – Covers all material from the course (chapter 1 -12, Systems Analyst's ToolKit – Parts 1 – 4)**

## CPT 264 – Course Specific Requirements

There are no specific course requirements other than attachment 1.

## CPT 264 – Evaluation and Grading Information

### GRADING POLICY

Emphasis will be placed on tests, assignments, group projects, and a cumulative final exam with the following weights:

**Fifteen (15) percent** of the final grade will be based on successful completion of assignments related to techniques and methodology employed by a Systems Analyst during the implementation of a business information system and a two-page paper that discusses topics related to a software product or tool that might affect the analyst's choices when developing a new system, etc.

Points will be deducted for the following on all lab assignments:

- Incorrect results
- Documentation that is missing or incomplete
- Documentation that is not neat, clean, or readable
- Lateness

**Twenty (20) percent** of the final grade will be based on two group projects grade averages.

**Forty-five (45) percent** of the final grade will be based on test grade averages.

**Twenty (20) percent** of the final grade will be based on the comprehensive final examination.

All assignments (i.e., labs, projects, research papers, etc.) for this course must be completed and submitted to the instructor by the due date established in order to receive credit for the assignment.

**NOTE: ALL TESTS AND EXAMS ARE RETAINED BY THE INSTRUCTOR.**

Final letter grades will be issued as follows:

A	=	90 - 100	points
B	=	80 - 89	points
C	=	70 - 79	points
D	=	60 - 69	points
F	=	0 - 59	points

**READ THIS SYLLABUS CAREFULLY**

You should read this syllabus carefully and ask your instructor about *any* aspects that you do not understand. The syllabus is an agreement between you and your instructor concerning course objectives, course content, grading, and other policies and procedures particular to this course. The above information is specific to the course. Three additional documents are provided as attachments and *are considered a part of this syllabus*:

**Attachment 1:**


Each instructor will provide a supplement to this syllabus. The supplement will include: a week-by-week plan of instruction based on the section in which you are enrolled; your instructor's name, office hours and/or office location; and your instructor's contact information and recommended best methods to contact your instructor.

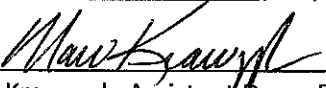
**Attachment 2:**

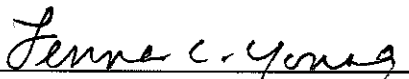
The Department responsible for developing and teaching has policies and procedures in place to assure quality instruction for all students. These are attached as "Departmental Policies and Procedures."

**Attachment 3:**

Please note that it is your responsibility to read the current Student Handbook included in Greenville Technical College's Catalog. (See website.) The Student Handbook addresses specific academic and student conduct policies and procedures. Excerpts from the Student Handbook representing the policies and procedures most often referred to in working with students are provided for your convenience as "Attachment 3."

Approved by:   
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13 Dec 10  
Date

*This syllabus will remain in effect until revised or reviewed no later than August 2011.*