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 186~~ CPT 186 ~~236~~ and~~or~~ IST 272 ~~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.~~

1. Systems Analysis and Design; Ninth Edition; Shelly, Cashman, Rosenblatt; Course Technology ISBN: 978-0-538-48161-8

~~SHELLY/ROSENBLATT WebTutor™ on Blackboard® Printed Access Card for Shelly/Rosenblatt's for Systems Analysis and Design, 9th, 9th Edition ISBN: 1111304084 (Course content will be accessed through blackboard and an access code must be purchased)~~

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.

Formatted: Tab stops: -0.5", List tab + Not at 0.25" + 0.53"

Formatted: Tab stops: -0.25", List tab + Not at 0.25" + 0.53"

Formatted: Font: +Body (Calibri), 11 pt

Formatted: Font: +Body (Calibri), 11 pt

Formatted: Indent: Left: 0", Tab stops: -0.22", List tab + Not at 0.53"

Formatted: Font: +Body (Calibri), 11 pt

Formatted: Indent: Left: 0", Tab stops: 0.03", List tab + Not at 0.53"

Formatted: Indent: Left: 0", Hanging: 0.31", Tab stops: 0.25", List tab + Not at 0.53"

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

Formatted: Normal, Tab stops: Not at 0.61"

COMPUTER PROGRAMMING PROGRAM LEVEL 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 level student learning outcomes~~competencie s~~ 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
- Gannt 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 Analust's ToolKit – Parts 1 – 4)**~~

CPT 264 – Main Topics

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

ToolKit Part A - 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

ToolKit Part B – Case Tools
Overview of CASE Tools
CASE Terms and Concepts
Integrated Development Environments
CASE Tool Examples
Future Trends

Chapter 3 Managing Systems Projects
Gannt Charts
Pert/CPM
Risk Management

Chapter 4 Requirements Modeling
JAD
RAD
Agile

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

Chapter 6 Object Modeling
Terms
Concepts
Relationships

Tool kit Part C - Financial Analysis Tools
- Describing Costs and Benefits
- Cost-Benefit Analysis

ToolKit Part D -Internet Resources
Search Engines
Subject Directories
Communication

Chapter 7 Development Strategies
Internet Impact

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

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

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

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

~~Tentative Schedule of Topic and Class/Lab Meetings~~

~~Please refer the Syllabus Attachment 1 to review the Tentative Course Schedule. The schedule outlines the chapters that will be reviewed, when tests will be given and when assignment and labs will be due.~~

CPT 264 – Course Specific Requirements

There are no specific course requirements other than attachment 1.

Formatted: Top: 0.7", Bottom: 0.9"

Formatted: Hyphenate, Tab stops: Not at 0" + 0.35" + 0.85" + 1.35" + 1.85" + 2"

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 one~~two~~ group ~~pr~~project~~s grade averages~~.
~~Fourty~~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.

Formatted: Indent: Left: 1", No bullets or numbering

Formatted: Font: Bold

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 I:

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: _____

Beau Sanders, Department Head, Computer Programming
~~Kim Cannon@gvltec.edu~~Beau.Sanders@gvltec.edu, (864) 250-8314, Barton Campus, Building 103, Room 311

Approved by: _____

Mark Krawczyk, Assistant Dean, Business
Mark.Krawczyk@gvltec.edu, (864) 250-8404, Barton Campus, Building 103, Room 304

Approved by: _____

Lenna C. Young, Dean, Business/Public Service
_____ Lenna.Young@gvltec.edu, (864) 250-8204, Barton Campus, Building 103, Room 104
Date

This syllabus will remain in effect until revised or reviewed no later than August ~~2011~~2012.

Formatted: Hyphenate, Tab stops: Not at 0" + 0.61" + 1" + 1.13" + 3.75" + 4" + 4.25" + 4.75"