I. OVERVIEW
The following information will appear in the 2010 - 2011 catalog

CMPSC 294 Computer Science Final Project 3 Units

Limitations on Enrollment: The students are required to bring the skills of their individual specializations, based on their 18 hours of coursework in either Information System, Networking, or Programming to form teams and solve a collaborative real-world IT industry level of problem application.

Culminating experience for students pursuing an Associate of Science degree in Computer Science. Objectives of degree courses will be integrated into a final managed project advised by one or more Computer Science faculty. Effective project and team management will be emphasized.

Field trips might be required. (A-F or P/NP - Student choice) Lecture /Lab
Transfer: (CSU)

II. LEARNING CONTEXT
Given the following learning context, the student who satisfactorily completes this course should be able to achieve the goals specified in Section III, Desired Learning:

A. COURSE CONTENT

1. Required Content:

   a. Problem Definition and Analysis
      i. Determination of project requirements
      ii. Assessing stakeholder needs
      iii. Access and evaluate information from a variety of sources and context

   b. Project Design and Implementation
      i. Synthesize of knowledge
      ii. Feedback loops

   c. Evaluation and Interpretation of Data
      i. Data validation
      ii. Solution integrity

   d. Project Maintenance
      i. Feedback loops
      ii. Upgrades
e. Project Documentation
   i. CASE Tools

f. Effective team building and management
   i. Techniques of team interaction
   ii. Time management
   iii. Importance of contractual obligations

g. Term Project Presentation
   i. Techniques of technical presentations

2. Required Lab Content:

a. Problem Definition and Analysis
   i. Determination of project requirements
   ii. Assessing stakeholder needs
   iii. Access and evaluate information from a variety of sources and context

b. Project Design and Implementation
   i. Synthesize of knowledge
   ii. Feedback loops

c. Evaluation and Interpretation of Data
   i. Data validation
   ii. Solution integrity

d. Project Maintenance
   i. Feedback loops
   ii. Upgrades

e. Project Documentation
   i. CASE Tools

f. Effective team building and management
   i. Techniques of team interaction
   ii. Time management
   iii. Importance of contractual obligations
g. Term Project Presentation
   i. Techniques of technical presentations

B. ENROLLMENT RESTRICTIONS

1. Limitations on Enrollment

   The students are required to bring the skills of their individual specializations, based on their 18 hours of coursework in either Information System, Networking, or Programming to form teams and solve a collaborative real-world IT industry level of problem application.

2. Requisite Skills

   Before entering the course, the student will be able to:

   a. Students must have completed one of the major sequence of courses: Information Systems, Networking, or Programming with at least 18 units of coursework.

C. HOURS AND UNITS

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D. METHODS OF INSTRUCTION (TYPICAL)

   Instructors of the course might conduct the course using the following method:

   1. Multi-disciplinary approach to information systems, networking, and programming
   2. Related material will be presented through designated class seminars and demonstrations
   3. Business and community members in the field will be involved with the seminars, discussions, and demonstrations of the course objectives
   4. Audiovisual presentations will augment seminars and demonstrations
   5. Possible internships will be developed throughout the course to facilitate the project development process
   6. Additional studies will be required from related material: a) Supplemental texts b) Trade magazines c) Professional interviews
   7. Students are challenged to provide original and creative solutions to project development
   8. Each project critique requires students to articulate their ideas in writing as well as through visual and oral presentations

E. ASSIGNMENTS (TYPICAL)

   1. EVIDENCE OF APPROPRIATE WORKLOAD FOR COURSE UNITS

      Time spent on coursework in addition to hours of instruction (lecture hours)

      a. (Weekly) Categorize and analyze assigned topic readings.
b. (Weekly) Carefully analyze and follow detailed instructions for completion of assignments.

c. (Weekly) Discussions on advanced topics in Computer Science.

d. (Weekly) Lab activities utilizing computing technology to apply software engineering and programming concepts to a semester project.

e. (Monthly) Reports on emerging technologies in the field of computer science.

f. (Monthly) Updates for semester project.

g. (Per term) Individualized semester project extending a student's specialized degree program in Computer Science: Information Systems, Networking, or Programming.

2. **EVIDENCE OF CRITICAL THINKING**

   *Assignments require the appropriate level of critical thinking*

   a. Assignment Question: Using the Internet and other resources locate and research Multi-touch technologies and their current and future applications. Summarize your findings in a 3 to 5 page report using APA format.

   b. Assignment Question: Using the Internet and other resources locate and research Cloud Computing and the implications for current and future network infrastructures. Summarize your findings in a 3 to 5 page report using APA format.

   c. Assignment Question: Using the Internet and other resources locate and research massively Multiplayer Open Source game programming languages and paradigms. Summarize your findings in a 3 to 5 page report using APA format.

   d. Lab Project: Review the system requirements for the latest release of a server level operating system. Review the system requirements for the latest release of a server level operating system. Using hardware resources provided design and implement a plan to install and configure the server. Your configuration must provide for user application needs, client/server services, file management, and network security. Monthly updates on configuration problems and success must be provided to your instructor.

   e. Lab Project: Review the system requirements for the latest release of a client level operating system. Using hardware resources provided design and implement a plan to install and configure the client. Your configuration must ready the client to interact with a client/server network established in the lab. Monthly updates on configuration problems and success must be provided to your instructor.

   f. Class Presentation: Select a topic from "New Technologies" in your Computer Science area of specialization: Information Systems, Networking, or Programming. Prepare a PowerPresentation detailing the importance of this new technology to the future of computing. Your presentation should include a cover slide, a content slide, 10 to 20 detail slides, and a summary slide about your presentation. Meet with your instructor to determine the subject and scope of this presentation.

   g. Final Project Presentation: All students are required to present the cumulative work produce for the final project. You will have approximately 15 to 20 minutes to make your presentation to the rest of the class. Example of a presentation for a Programming project would include a discussion on the language used and why, unique language characteristics that were used in your solution, the design of and sample source code develop for your final project, and a demonstration of the working project. Example of a presentation for an Informations Systems project would include a discussion of data tables designed, relationships between the tables, database software used, queries created, and reporting capabilities created for your final project. Example of a presentation for a Networking project would include diagrams of the network topology, network hardware, operating systems, services running, and security established in your final project. Coordination of your presentation must be scheduled with your instructor.
F. TEXTS AND OTHER READINGS (TYPICAL)


III. DESIRED LEARNING

A. COURSE GOAL

As a result of satisfactory completion of this course, the student should be prepared to:

- analyze and evaluate the principles of problem-solving. Critically analyze and interpret data and processes found in the Information Technology industry. Articulate and synthesize social interactive skills to work in teams effectively.

B. STUDENT LEARNING GOALS

Mastery of the following learning goals will enable the student to achieve the overall course goal.

1. **Required Learning Goals**

   Upon satisfactory completion of this course, the student will be able to:

   a. Design and implement a solution to a complex problem under the supervision of Computer Science faculty members
   
   b. Synthesize knowledge acquired and apply to the given problem domain
   
   c. Independently apply the principles of problem-solving methodology
   
   d. Critically evaluate and interpret data and concepts in Computer Science
   
   e. Use social interactive skills to work in teams effectively
   
   f. Access and evaluate information from a variety of sources and context
   
   g. Present and defend processes of term project

2. **Lab Learning Goals**

   Upon satisfactory completion of the lab portion of this course, the student will be able to:

   a. Design and implement a solution to a complex problem under the supervision of Computer Science faculty members
   
   b. Synthesize knowledge acquired and apply to the given problem domain
   
   c. Independently apply the principles of problem-solving methodology
   
   d. Critically evaluate and interpret data and concepts in Computer Science
   
   e. Use social interactive skills to work in teams effectively
   
   f. Access and evaluate information from a variety of sources and context
   
   g. Present and defend processes of term project

IV. METHODS OF ASSESSMENT (TYPICAL)
A. **FORMATIVE ASSESSMENT**
   1. Completeness and clarity of design documentation
   2. Accuracy of problem-solving methodology
   3. Final Project Paper with appropriately cited references
   4. Student Technical Presentation

B. **SUMMATIVE ASSESSMENT**
   1. Completeness and clarity of design documentation
   2. Accuracy of problem-solving methodology
   3. Final Project Paper with appropriately cited references
   4. Student Technical Presentation