Basic Course Information CS 525

I Catalog Description

II Required Coursework and Background
Pre-requisite(s): CS 365 or consent of instructor

III Expected Outcomes
On successful completion of this course, students will be able to:
1. Recognize the fundamental computer organization and architectural issues, and of the inherent limitations of the traditional approaches.
2. Learn the principles and the terminology involved in computer architecture, organization, and design.
3. Explain the methods of specification, description, measurement, and evaluation of processors and systems.
4. Appreciate the historical developments in computer architecture, and an acquaintance with many of the current innovative designs.
5. Build a basis for understanding the new computer architectures that are on the horizon.

Outcomes of this course will build student capacity in each of the following areas as defined by programmatic objectives for the computer science major.

P-SLO 2. An ability to comprehend and apply the state-of-the-art concepts and design principles in advanced computer architecture.

IV Instructional Materials
Texts may vary with instructor and over time. Examples of possible texts include:

V Minimum Student Material
Course textbooks

VI Minimum College Facilities
Computer laboratories, library, Blackboard, classroom with a projection system

VII Course Outline
Architecture, Organization, Implementation and Performance Issues
Uniprocessor Architectures
Instruction sets and compilation, Pipelining
Cache organization and Optimization
Multiprocessor Architectures
Parallelism and Interconnection networks
Current issues such as Virtualization.
VIII Instructional Methods
Lecture
Problem-solving
Discussion
Project-based learning

IX Evaluation of Outcomes
A. Student Assessment
i homework assignments and projects
ii mid-term
iii final
iv quizzes

B. Meaningful Writing Assignment
Students shall produce written solutions or proofs or programs to problems that are assigned as homework and/or programming projects and explain their reasoning. Short answer essay questions on exams will require students to explain and justify their response in writing.

C. A Matrix of Course Student Learning Outcomes vs Methods of Assessment
If the course is being evaluated for accreditation purposes, approved department accreditation assessment tools will additionally be utilized.

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<thead>
<tr>
<th>Course Learning Outcomes</th>
<th>Method of Assessment</th>
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<td>Assignments</td>
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<tr>
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