COURSE DESCRIPTION

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Type</th>
<th>Course Title</th>
<th>Coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 561</td>
<td>Sel. Elect.</td>
<td>Principles of Computer Architecture</td>
<td>Jing Deng</td>
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<table>
<thead>
<tr>
<th>Sem. Hours</th>
<th>Course Title</th>
<th>Coordinator</th>
</tr>
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<tbody>
<tr>
<td>3</td>
<td>CSC 561</td>
<td>Jing Deng</td>
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</tbody>
</table>

Current Catalog Description:

Hardware and software components of computer systems, their organization and operations. Topics: comparative instruction set architectures, microprogramming, memory management, processor management, I/O, interrupts, and emulation of processors.

Textbook:


References:

None

Course Outcomes:

Upon successful completion of this course, a student should be able to:

1. Comprehend structure and operations of a modern (hard-wired, pipelined) CPU (CO1)
2. Apply this knowledge to the design of a computer (CO2)
3. Communicate technical information orally and in written reports (CO3)
Prerequisites by Topic:

Students must have
- grades of at least C (2.0) in CSC 261 (Computer Organization and Assembly Language), and
- CSC 330 (Advanced Data Structures),
- CSC 350 (Foundations of Computer Science II), or
- permission of instructor

Major Topics Covered in the Course:

- Register transfers and datapaths.
- Instruction set design.
- CPU design.
- Pipelining.
- Static and dynamic scheduling.
- Memory systems; Caching.

Estimated Curriculum Category Content (Semester hours):

<table>
<thead>
<tr>
<th>Area</th>
<th>Core</th>
<th>Advanced</th>
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<th>Advanced</th>
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<tr>
<td>Algorithms</td>
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<td>Software design</td>
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<td>Data structures</td>
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<td>Prog. Languages</td>
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