CSC/CPE 520 Computer Architecture

1. CSC/CPE 520 Computer Architecture

2. **credit units** 4  **contact hours** 6

3. **Course Coordinator:** John Seng

4. **Textbook:** (and/or other required material) Patterson & Hennessy, Computer Architecture

5. a. **Course Description:** Comparative study and design of multiprocessor, dataflow, RISC, high level language and other new computer architectures. VLSI processor design techniques. 3 seminars, 1 laboratory.

   b. **Prerequisite:** CSC/CPE 315 and graduate standing, or consent of instructor.

   c. **Required/Elective/Selective Elective for CPE, CSC, EE, SE**

       | Required     | CSC | CPE | SE |
       |--------------|-----|-----|----|
       | Elective     |     |     |    |
       | Selective Elective | X   | X   | X  |

6. a. **Course Goals/Outcomes**

   The student will be able to:
   - Analyze superscalar processor architectures.
   - Analyze advanced cache designs and performance.
   - Analyze hardware multithreaded processors.

   b. **How Student Outcomes addressed**

   (“B” = Basic level, “I” = Intermediate level, “A” = Advanced level)

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7. **Major Topics Covered:** (number of lecture hours each)

   - Multithreading (1)
   - Superscalar Processing (1)
   - Multi-processor systems (1)
   - Branch Prediction (1)
   - Advanced Cache design techniques (1)
• Performance analysis (1)
• Dataflow computers (1)
Future trends (23)