B. Tech (IT) COMPUTER ARCHITECTURE (CS7451)

Activity No.	Activity Name
A1.1	**Open Book Discussion** ● Different types of computers ● Functional units of a digital computer ○ Hardware components ○ Software components ● Different architectures (Von Neumann and Harvard) ● Byte and word addressing (Big-endian and Little-endian styles) ● From high level language into machine language ● About instruction ● Different types of memory ○ CPU registers ○ Cache ○ Main Memory ○ Secondary Storage ○ Remote Storage ● MIPS Instructions **References:** 1. David A. Patterson and John L. Hennessy, "Computer Organization and Design: The Hardware/Software Interface", Fourth Edition, Morgan Kaufmann / Elsevier, 2009. 2. Carl Hamacher, Zvonko Vranesic, Safwat Zaky and Naraig Manjikian, "Computer Organization and Embedded Systems", Sixth Edition, Tata McGraw Hill, 2012. 3. Class notes
A1.2	**Tracing CPU information on Linux** **Reference:** https://www.tecmint.com/check-linux-cpu-information/
A1.3	**Translation from a C program into machine code (X86 architecture and Linux Platform)** a. Converting high level language program into machine code b. Tracing Assembly code instructions (identifying high-level program in assembly code) c. Tracing machine code (identifying assembly instructions in machine code) **Reference:** http://csapp.cs.cmu.edu/2e/ch3-preview.pdf
A1.4	**Case study on MIPS32 Instruction Set** **References:** https://www2.cs.duke.edu/courses/fall13/compsci250/MIPS32_QRC.pdf https://www.cs.cornell.edu/courses/cs3410/2008fa/MIPS_Vol2.pdf http://www.dsi.unive.it/~gasparetto/materials/MIPS_Instruction_Set.pdf