FOUNDATIONS TO COMPUTER SYSTEMS DESIGN

COMPUTER SCIENCE & ENGINEERING

PROF. V. KAMAKOTI
Dept. of Computer Science and Engineering
IIT Madras

TYPE OF COURSE : New | Core | UG
INTENDED AUDIENCE : B.E/B.Tech, M.E/M.Tech etc,
COURSE DURATION : 12 weeks (28 Jan'19-19 Apr' 19)
EXAM DATE : 27 April 2019

INDUSTRIES APPLICABLE TO : All core computer science and engineering and computer hardware company – Intel, AMD, NVidia, Redhat, etc

COURSE OUTLINE :

The Computer Architecture and Organization, Operating Systems, and Compilers are three fundamental pillar courses for both Computer Science and Engineering; and, Electrical and Electronics engineering students. The current course presents a cross-layer view of the three pillars, which help the student appreciate the contributions, interactions and challenges related to each of these pillars from the view of the total systems engineering.

ABOUT INSTRUCTOR :

V. Kamakoti is a Professor at Department of Computer Science and Engineering, IIT Madras. He specializes in the area of Computer Architecture and embedded systems, VLSI design and Information Security.

COURSE PLAN :

Week 01 : Introduction to Boolean Logic
Week 02 : Introduction to Boolean Algebra
Week 03 : Introduction to Sequential Logic
Week 04 : Machine Language Specification
Week 05 : HACK – A Simple Computer Microarchitecture
Week 06 : Assembly Language Fundamentals
Week 07 : Introduction to Stack Based Virtual Machine
Week 08 : Language and Interpreter for Virtual Machines
Week 09 : Introduction to JACK – High Level Language
Week 10 : Front-end JACK Compiler: Meet your favourites | Image Processing : Fun with images.
Week 11 : Back-end JACK Compiler
Week 12 : Introduction to Operating Systems