

OBJECT ORIENTED ANALYSIS AND DESIGN

MULTI-FACULTY

INTENDED AUDIENCE : UG, PG Course, BCA, MCA, B.Tech., M.Tech.

PRE-REQUISITES : 1. Basic Knowledge of Programming & Data Structure

2. Experience of Programming Projects would help; but is not mandatory
3. Attending a course on C++ with this course will help

INDUSTRIES APPLICABLE TO : Object-Oriented Analysis and Design is at the core of software development processes. Hence all software development companies have a need for the same. These include – Microsoft, Samsung, Xerox, Yahoo, Google, IBM, TCS, Infosys, Amazon, Flipkart, etc.

COURSE OUTLINE :

The complexity of software systems is ever on the rise – more complex problem domains being attempted (complex embedded systems), ever growing number of developers engaged in increasingly intricate development processes to turnaround in shorter and shorter time, flexibility of software and models of implementation being stretched to the limit with XaaS, platforms getting challenging with widely expanding distribution, cloud computation etc. Hence the analysis and design of software require well-organized and structured approaches to manage the challenges of complexity – even more than ever before.

ABOUT INSTRUCTOR :

Prof. Partha Pratim Das received his BTech, MTech and PhD degrees in 1984, 1985 and 1988 respectively from IIT Kharagpur. He served as a faculty in Department of Computer Science and Engineering, IIT Kharagpur from 1988 to 1998. In 1998, he joined Alumnus Software Ltd as a Business Development Manager. From 2001 to 2011, he worked for Interra Systems, Inc. as a Senior Director and headed its Kolkata Center. In 2011, he joined back to Department of Computer Science and Engineering, IIT Kharagpur as Professor. Dr. Das has also served as a Visiting Professor with Institute of Radio Physics and Electronics, Calcutta University from 2003 to 2013.

Prof. Ansuman Banerjee is currently an Associate Professor at the Advanced Computing and Microelectronics Unit, Indian Statistical Institute Kolkata. He received his B.E. from Jadavpur University, and M.S. and Ph.D. degrees from the Indian Institute of Technology Kharagpur -- all in Computer Science. Prior to joining Indian Statistical Institute, he spent about 3 years with the EDA industry and a brief stint at the National University of Singapore as a research fellow. His research interests include design automation for embedded systems, hardware / software coverification, VLSI CAD, and algorithmic methods for digital microfluidics

Prof. Kausik Datta has over 23 years of experience in engineering and management at the EDA industry. Currently he is working as Principal Engineer and Manager at Mentor Graphics (India) Pvt. Ltd., Kolkata and leading the Front-end Analyzer Group. Prior to working with Mentor, Prof.Kausik had worked with Interra Systems, Delsoft and Siemens on software development in EDA and Telecom domain. Prof. Kausik received his Bachelor of Engineering degree in Electrical Engineering from Jadavpur University, and his M. Tech. in Computer Science from the Indian Statistical Institute, Kolkata.

COURSE PLAN :

Week 1: Software Complexity: Understanding the challenges OOAD can address

Week 2: Object Model: Defining the primitives of the OO paradigm

Week 3: Classes and Objects: Bringing in the broader perspectives

Week 4: Classes and Objects: Identification approaches using OOAD

Week 5: Unified Modeling Language

Week 6: Unified Modeling Language

Week 7: Unified Modeling Language

Week 8: OOAD Case Studies: Applying OOAD in different contexts