# First Semester 2016-2017
# Course Handout Part-II

**Date:** Aug 02, 2016

In addition to Part I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

*Course No.* : **CS G514 / SS G514**
*Course Title* : **Object Oriented Analysis and Design**
*Instructor-in-Charge* : **YASHVARDHAN SHARMA**
*Email* : **yash@pilani.bits-pilani.ac.in**        *Chamber*: **6120-I**
*Course web page* : **Course page on Nalanda, the on-campus learning management system**

## Course Objective

To impart a good understanding of object oriented analysis and design using the unified process. To impart an ability to apply the methodology to typical cases. The course aims at imparting a good understanding of the main UML models used in the use case driven unified process and their application to given problems.

## Scope of Course

The course covers the analysis and design methodology in sufficient depth. The student should be able to analyze requirements using a use case model, identify the classes and their responsibilities, and use interaction models to capture the requirements and the design of the solution. The application of the design axioms and the iterative nature of the process are emphasized. The use of design patterns is illustrated. Some architectural aspects (the use of access and view layers) are covered.

## Textbook:
**T1.** Object Oriented Modeling and Design using UML, Second Edition, Michael Blaha and James Rumbaugh, Pearson Education, 2005

## Reference Books:
**R1.** Applying UML and Patterns, Third Edition, Craig Larman, Pearson Education, 2002
**R2.** Object Oriented Analysis and Design with Applications, Grady Booch, Addison-Wesly Second Edition, 1994
**R3.** Object Oriented Systems Development using Unified Modeling Language, Ali Behrami, McGraw Hill International Edition, 1999
**R4.** Design Patterns, Gamma et. al., Pearson Education, 2006.

**Lecture Plan:**

| Lecture No. | Topics to be covered | Reference |
|---|---|---|
| 01 - 03 | Introduction, Object Oriented Information systems Overview- Object Orientation | T1.Ch01 + Class Notes |
| 03 - 04 | Software Development Life Cycle Object Oriented Systems Development | T1.Ch 21 + Class Notes |
| 05 - 07 | Object Oriented Methodologies Unified Approach | T1.Ch 21, 22 |
| 08 - 09 | Unified Modeling Language UML Notations | Class Notes |
| 10 - 15 | Object Oriented Analysis, Use Case Model, Class Identification, CRC cards, Domain Model, Activity Diagrams, System Design | T1.Ch 2,10,11,12,13, 14 and Case Studies |
| 16 - 21 | Object Oriented Design, Class Design, Advanced Class Modeling, Design Axioms and GRASP Patterns, Class Diagram Interaction Diagrams, Advanced Interaction Modeling | T1.Ch 15,3,7, 8 and Case Studies |
| 22 - 23 | State Modeling, UML State Charts, Advanced State Modeling | T1.Ch 5,6 |
| 24 - 25 | Access Layer and View Layer, Object Persistence, UI Design | T1.Ch 19 |
| 26 - 26 | Implementation: Implementation Modeling | T1.Ch 17 |
| 27 - 32 | Application of Design Patterns Design Patterns | T1.Ch 20,  R4 |
| 33 - 35 | Architecture and Framework, Object Oriented Systems Architectures Frameworks | Class Notes |
| 36 - 40 | Software Quality Assurance Object Oriented Testing | Class Notes |

**Evaluation Scheme:**

| S. No. | Evaluation Component | Duration | Weightage | Date & Time | Nature |
|---|---|---|---|---|---|
| 1. | Mid-Semester Test | 90 Minutes | 25% | 4/10  4:00 - 5:30 PM | Closed Book |
| 2. | Assignments, Projects | | 35% | | Open Book |
| 3. | Comprehensive Examination | 180 Minutes | 40% | 5/12  AN | Partly Closed Book |

**Assignments and Projects**

Assignments/projects will be evaluated through a Viva-Voce.

Details of assignments/projects including problem specifications, deliverables, team sizes, deadlines, and Viva-voce schedule will be posted on the course website.

**Make-up Policy**

- No Make-up will be available for any of the assignments.
- Prior Permission of the Instructor-in-Charge is required to take a make-up for a test.
- A make-up test shall be granted only in genuine cases where - in the Instructor's judgment - the student would be physically unable to appear for the test.

**Chamber Consultation Hours**

To be announced through course website

**Notice**

All the notices of this course will be displayed at **CSIS notice board** only

**Instructor-in-Charge**

**CS/SS G514**