

# Object-Oriented Analysis and Design

## Course Highlights

- How does one know if one is developing the software right?
- How does one know if one is developing the right software?

Learning languages like C++, Java or C# will help you implement the objects and their relationships. However, how does one know the correct classes to write? Developing programs with objects requires more than knowing a programming language. One should consider other factors like extensibility, maintainability, cohesion, coupling, etc. This course focuses on applying good Object Orientated (OO) design principles and patterns. It is intended to make you a better OO developer.

## Topics

- Identifying objects, classes, and the relationships between them
- UML
- Unified Software Development Process
- Extreme Programming
- Measuring the quality of design
- Object-Oriented Design Issues
- Design Patterns



## Labwork

- Four home work exercises
- Two assignments
- Two exams
- Numerous bonus quizzes
- Final Team project e.g. implementing OO technologies, principles and practices

## Learning technologies

- All slides and examples presented in class are downloadable from the instructor's web site.
- An active mailing list is maintained during the semester where students can send any questions and discuss various details with each other, and provide an opportunity to extend the learning environment beyond the allocated class time.
- All course announcements are also communicated by e-mail.

## And a student says..

"Dr. Venkat's teaching style reflects his years in industry, providing real-life examples that kept me motivated and inspired to further delve into the concepts of OOAD. After this course I had a strong grasp over all the design patterns and have made use of those in a number of assignments, and research projects for my job, which are appreciated by my colleagues and team members. Dr. Venkat is keen to help students to understand the various concepts and regularly work with them throughout the semester. He is available after class and responds quickly to email."

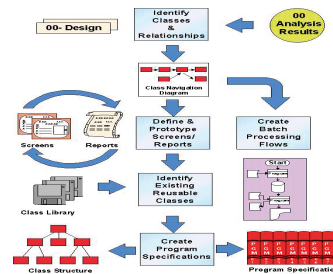
Jay Gattani, UH Computer Science

## Reference Material

- "Unified Software Development Process," Jacobson, Rumbaugh, Booch, Addison-Wesley.
- "Design Patterns: Elements of Reusable Object-Oriented Software," Gamma, Helm, Johnson, Vlissides, Addison-Wesley.
- A number of online references.

## Is this course for you? You should ...

- Be familiar with the OO concept;
- Be interested in developing cost effective, extensible and robust systems;
- Realize that it is not an introduction to OO concepts, but intended to make a proficient OO coder into a mature software developer.



## About the Instructor



**Dr. Venkat Subramaniam** is an agile developer who also teaches. He has experience with architecture, analysis, design and development of software systems using distributed object technology. He also is the instructor for the Professional Developer Series at Rice Universities' Technology Education Center. Venkat also runs a successful training and mentoring business and teaches courses in the industry world wide.

## Related Courses

- Introduction to Computer Science II (OOP)
- Distributed Object Computing.

For more information, Contact: [www.cs.uh.edu/~svenkat/classes](http://www.cs.uh.edu/~svenkat/classes)

