

CSE 4016 Software Project Management

Course Information

LT

3 Credit Course

Dr. Sandip Mal

Assessment Components

Test

Mid term

- 50 Marks
- 90 Min. Exam
- 30 Marks
Conversion Value

FAT/ TEE (Final Assessment Test)- December'2017

- 50 Mark Exam
- 90 Min. Exam
- 30 Marks
Conversion Value

Assessment Components

Attendance

5 Marks

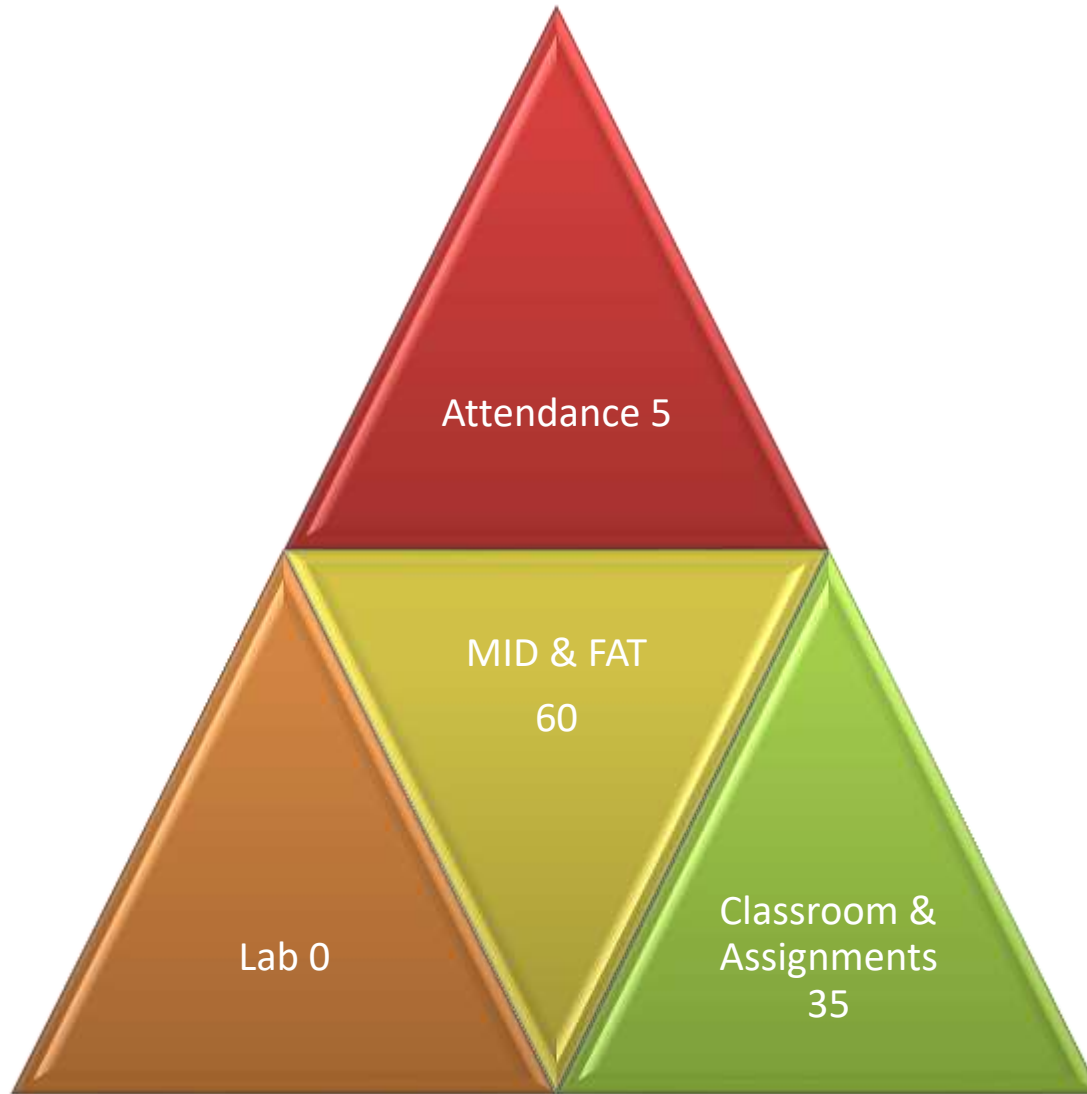
Assignments &
Classroom
Assessment

Tutorial-10
Assignment-10
GA-5
Quiz-10

Lab Performance &
Reports

0 Marks

Total 100 Marks



Syllabus

- **Introduction to software project management:**

Importance of Software Project Management – Activities – Methodologies – Categorization of Software Projects – Setting objectives – management Principale – Management Control – Project portfolio Management – Cost-benefit evaluation technology – Risk evaluation – Strategic program Management – Stepwise Project Planning.

Module 2

- **PROJECT LIFE CYCLE AND EFFORT ESTIMATION:**
- Software process and Process Models – Choice of Process models – Rapid Application development – Agile methods – Dynamic System Development Method – Extreme Programming– Managing interactive processes – Basics of Software estimation – Effort and Cost estimation techniques – COSMIC Full function points – COCOMO II – a Parametric Productivity Model.

Module 3

- **ACTIVITY PLANNING AND RISK MANAGEMENT:**
- Objectives of Activity planning – Project schedules – Activities – Sequencing and scheduling – Network Planning models – Formulating Network Model – Forward Pass & Backward Pass techniques – Critical path (CRM) method – Risk identification – Assessment – Risk Planning – Risk Management – – PERT technique – Monte Carlo simulation – Resource Allocation – Creation of critical paths – Cost schedules

- Software Project Management- Bob Huge, Mike Cottrell, Rajib Mall. mcgrowHill-2012, 5th edition

Introduction to software project management

- ☐ define the scope of 'software project management';
- ☐ distinguish between software and other types of development project;
- ☐ understand some problems and concerns of software project managers;
- ☐ define the usual stages of a software project;
- ☐ explain the main elements of the role of management;
- ☐ understand the need for careful planning, monitoring and control;
- ☐ identify the stakeholders of a project, their objectives and ways of measuring the success in meeting those objectives;
- ☐ measure the success of a project in meeting its objectives.

We can summarize the key characteristics that distinguish projects as follows:

- non-routine tasks are involved;
- planning is required;
- specific objectives are to be met or a specified product is to be created;
- the project has a predetermined time span (which may be absolute or relative);
- work is carried out for someone other than yourself;
- work involves several specialisms;
- work is carried out in several phases;
- the resources that are available for use on the project are constrained;
- the project is large or complex.

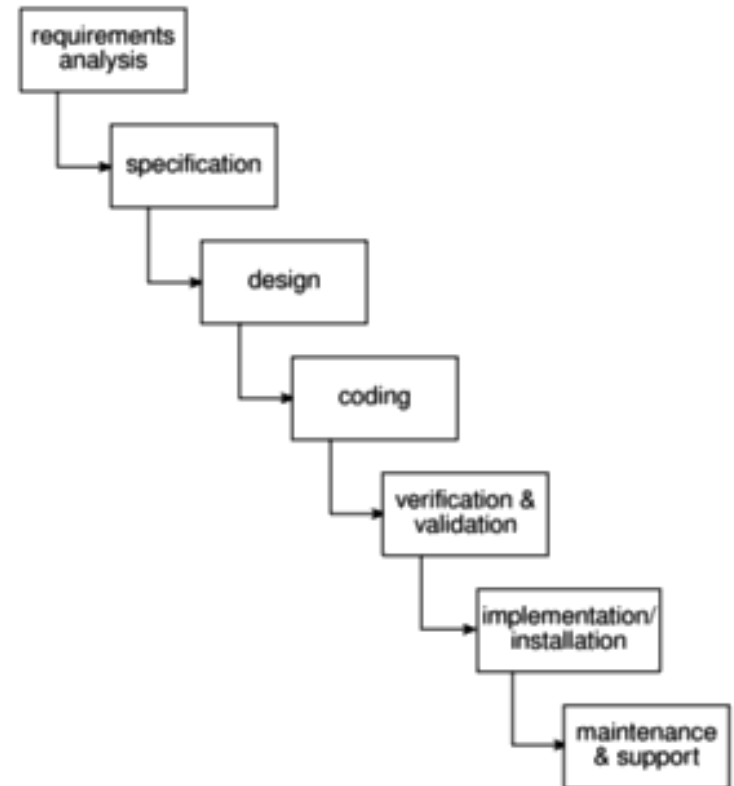
Software Project vs other project

- Visibility
- Complexity
- flexibility

Activities covered by Software Project Management

- Feasibility study
 - Planning
 - Execution
- SDLC
 - (Software Development Life Cycle)

Waterfall
Spiral
V-Shap



Categorization of Software Project

- Information System and Embedded System
- Objective and product

Management

- Management involves the following activities
 - planning – deciding what is to be done;
 - organizing – making arrangements;
 - staffing – selecting the right people for the job, for example;
 - directing – giving instructions;
 - monitoring – checking on progress;
 - controlling – taking action to remedy hold-ups;
 - innovating – coming up with new solutions;
 - representing – liaising with users etc.

Exercise

Paul Duggan is the manager of a software development section. On Tuesday at 10.00 am he and his fellow section heads have a meeting with their group manger about the staffing requirements for the coming year. Paul has already drafted a document 'bidding' for staff. This is based on the work planned for his section for the next year. The document is discussed at the meeting. At 2.00 pm Paul has a meeting with his senior staff about an important project his section is undertaking. One of the software development staff has just had a road accident and will be in hospital for some time. It is decided that the project can be kept on schedule by transferring another team member from less urgent work to this project. A temporary replacement is to be brought in to do the less urgent work but this might take a week or so to arrange. Paul has to phone both the personnel manager about getting a replacement and the user for whom the less urgent work is being done explaining why it is likely to be delayed.

Identify which of the eight management responsibilities listed above Paul was responding to at different points during his day.

- Challenges in Software projects

- coping with deadlines (85%);
- coping with resource constraints (83%);
- communicating effectively among task groups (80%);
- gaining commitment from team members (74%);
- establishing measurable milestones (70%);
- coping with changes (60%);
- working out project plan agreement with their team (57%);
- gaining commitment from management (45%);
- dealing with conflict (42%);
- managing vendors and sub-contractors (38%).

Problem with Software Projects

- Managers View

- poor estimates and plans;
- lack of quality standards and measures;
- lack of guidance about making organizational decisions;
- lack of techniques to make progress visible;
- poor role definition – who does what?
- incorrect success criteria.

- Project Members view

- inadequate specification of work;
- management ignorance of IT;
- lack of knowledge of application area;
- lack of standards;
- lack of up-to-date documentation;
- preceding activities not completed on time – including late delivery of equipment;
- lack of communication between users and technicians;
- lack of communication leading to duplication of work;
- lack of commitment – especially when a project is tied to one person who then moves;
- narrow scope of technical expertise;
- changing statutory requirements;
- changing software environment;
- deadline pressure;
- lack of quality control;
- remote management;
- lack of training.

Stake Holder

- Within the project team
- Outside the project team, but within the same organization
- Outside both the project team and the organization

Information and control in organizations

