(VII Semester)

(CS1701) Software Engineering (3- 1 –0)

Introduction, Software Life-cycle models, Software requirements, specification, specification-axiomatic and algebraic specifications. Function-oriented software design, Object-oriented design, UML, User interface design, coding and unit testing, integration and systems testing, Software reliability and fault-tolerance, Software project planning, monitoring, and control. Software maintenance. Computer-aided software engineering (CASE), Software reuse, Component model of software development. Laboratory: Development of requirements specification, function oriented design using SNSD, Object-oriented design using UML test case.

Suggested Text Books & References

* Jalote,Pankaj," Integrated Approach to S/W", Narosa.
* Pressman, R,"S/W Engg., A Practioner's Approach", 4th Edition., , McGraw Hill. 1990, Pfleerger,S.L. "S/W Engineering" , MacMillon.

(CS1702) Object Oriented Programming & Methodology (3- 1 –0)

Introduction to the principles of object-oriented programming (classes, object messages, encapsulation, inheritance, polymorphism. exception handling, and object-oriented containers). Object design implementation in a programming language, e.g., C++ or Java. Object oriented analysis, modeling and design. UML may be introduced. Use cases, Use case driven analysis. Structural Modeling: classes, relationship., interfaces, class diagrams, and object diagrams, in UML. Behavioral Functional modeling: use case diagram., sequence diagrams, in UML. Dynamic Modeling: state charts. Architectural Modeling. Analysis, patterns. Design patterns. Distributed Object Model.

Suggested Text Books & References

* Rumbaugh, James Michel Blaha William Premerlani, Frederick, Eddy and William Lorensen," OBJECT ORIENTED MODELLING& DESIGN"

* Dillon T. and Tan, Poh Lee "OBJECT ORIENTED CONCEPTUAL MODELLING", Prentice Hall, 1993.

(CS 1703) Data Base Application Design (3- 1 –0)

Design Theory for Relational Database
Functional Dependencies, Decomposition of Relation Scheme, Normal for Relations Schemes, Normal Forms for Relations Scheme, Multi valued and other kinds of Dependencies.

Query Optimization
Basic Optimization strategies, Algebra Manipulation, Optimization of Selections in System, Exact optimization under weak equivalence.

Database Protection
Integrity, Integrity constraints in query – by - example, Security in Query –by example, Security in Statistical Database.

Concurrent Operations on the Database
Basic concepts, a simple transaction model, A model with Read - and - Write only model, Concurrency for Hierarchical structured items, protecting against crashes, optimistic concurrency control.

Distributed Database System
Fragment of relations, Optimization transmission cot by semi joins, distributed concurrency control.

VII-SEMESTER PRACTICAL

(0-0-3)

7th Semester		
SL. NO.	Name of Lab	List of Experiments
CS1704-P	Software Engineering	1) Study of waterfall model 2) Study of spiral model. 3) Study of case tools. 4) Study of project scheduling 5) Study of different testing tools 6) Study of bottom-up and Top-down designing

(0-0-3)

7th Semester		
SL. NO.	Name of Lab	List of Experiments
CS1705-P	Database Application	1) Study and application of normalization. 2) Study and application of de- normalization. 3) Study and application of different types of locking 4) Study and application of different types of joins . 6) Study and application of database security.

(0-0-3)

7th Semester		
SL. NO.	Name of Lab	List of Experiments
CS1706-P	Object Oriented Programming	1)Write a program that consists of two classes time 12 and time 24. The first class maintains time on a 12- hour basis , where as the other maintains the same in 24-hour basis. Provide conversion function to carry out the conversion from one object to another . 2) Write a program that implements a Data class containing data members day, month and year . Implement copy constructer in this class. 3) Write a program in C++ to implement a stack. 4) Implementation a String class containing the following function ➢ Overloaded '+' operator function to concatenation of string ➢ Overloaded '=' operator function to carryout of string copy 5) Write a program that contains a class derived , derived from base . The base class should have virtual function f() and it should be overridden in the derived class .