**LESSON PLAN**

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| **Discipline:** Computer Science & Engg. | **Semester:** Fifth (5th) | **Name of the Faculty:** Er Jyotsnamayee jena |
| **Subject:** Software Engineering | **No. of days/week class allotted:** Five (5) | **Semester from Date:**01.07.24 **to Date:**08.11.2024**No. of Weeks:** 15 |
| **WEEK** | **CLASS DAY** | **THEORY TOPICS** |
| 1st  | 1st  | Program vs. Software product. |
| 2nd  | Emergence of Software Engineering. |
| 3rd  | Computer Systems Engineering. |
| 4th  | Software Life Cycle Models |
| 5th  | Classical Water fall model. |
| 2nd | 1st  | Iterative Water fall model |
| 2nd  | Prototyping mode |
| 3rd  | Evolutionary model. |
| 4th  | Spiral model. |
| 5th  | Review Class |
| 3rd | 1st  | Responsibility of Project Manager |
| 2nd  | Project Planning |
| 3rd  | Metrics for Project size estimation (LOC and FP) |
| 4th  | **Monthly Test-01** |
| 5th  | Project Estimation Techniques |
|  4th | 1st  | COCOMO Models, Basic, Intermediate and complete |
| 2nd  | Scheduling |
| 3rd  | Organization and Team structure |
| 4th  | Staffing |
| 5th  | Risk Management |
|  5th | 1st  | Review Class |
| 2nd  | Requirements gathering and analysis |
| 3rd  | Software Requirement & Specification |
| 4th  | Continue…. |
| 5th  | Content of SRS |
|  6th | 1st  | Characteristics of good SRS |
| 2nd  | Organization of SRS |
| 3rd  | Techniques for representing complexing logic. |
| 4th  | Review Class |
| 5th  | **Monthly Test-02** |
|  7th | 1st  | What is a Good S/W design |
| 2nd  | Cohesion and couplingNeat arrangement |
| 3rd  | S/W Design approaches. Structured analysis |
| 4th  | Data Flow Diagrams |
| 5th  | Symbols used in DFD Designing DFD |
|  8th | 1st  | Developing DFD model of a system |
| 2nd  | Shortcomings of DFD Structured design |
| 3rd  | Principles of transformation of DFD to Structure Chart |
| 4th  | Transform analysis and Transaction Analysis |
| 5th  | Design Review |
|  9th  | 1st  | Review Class |
|  | 2nd  | Characteristics of Good InterfaceBasic concepts of UID |
|  | 3rd  | Types of User interfaces |
|  | 4th  | Components based GUI development |
|  | 5th  | **Monthly Test -03** |
|  10th  | 1st  | Review Class |
| 2nd  | Coding |
| 3rd  | Code Review Code walk through |
| 4th  | Code inspections and software Documentation |
| 5th  | Testing |
|  11th | 1st  | Unit testing |
| 2nd  | Black Box Testing |
| 3rd  | Equivalence class partitioning and boundary value analysis |
| 4th  | White Box Testing  |
| 5th  | **Monthly Test-04** |
|  12th | 1st  | Different White Box methodologies statement coverage branch coverage, condition coverage,  |
| 2nd  | path coverage, cyclomatic complexity data flow based testing and mutation testing |
| 3rd  | Debugging approaches |
| 4th  | Debugging guidelines |
| 5th  | Integration Testing |
|  13th | 1st  | Continue.. |
| 2nd  | Phased and incremental integration testing |
| 3rd  | System testing alphas beta and acceptance testing |
| 4th  | Performance Testing, Error seeding |
| 5th  | General issues associated with testing |
|  14th | 1st  | Review |
| 2nd  | Software Reliability |
| 3rd  | Continue.. |
| 4th  |  Different reliability metrics |
| 5th  | Continue… |
|  15th | 1st  | Reliability growth modeling |
| 2nd  | Software quality |
| 3rd  | Software Quality Management System |
| 4th  | Review Class |
| 5th  | Revision |