Course Code		1	
Department	COE		
Course Name	CSE Software Production Figurities and Maintenance (CDFM)		
	Software Production, Evolution and Maintenance (SPEM)		
Credits	·		
Course Offered to	PG / UG		I
Whether the course is to be counted towards M.Tech			
specialization. If yes, please			
select the specialization			
towards which it is to be			
counted			
If the course is to be counted			
towards other B.Tech			
programs(For Ex if a course			
with CSE no. satisfies the			
requirement of 32 credits of			
B.Tech ECE program that			
students have to do in last 4 semesters, then the drop down			
answer should be ECE)			
answer should be LOL)	Most of the software products developed today are a collection of closely		
	coupled software applications that fulfills multiple user needs at once. Software		
	product line paradigm is a useful approach while developing multiple software		
	products that share common functional and quality requirements. It facilitates		
	efficient development, production, and mass customization of software-intensive		
	systems and software products by using a set of software subsystems and		
	interfaces that form a common structure. However, the development and the		
	delivery of software product is only a part of the story. Software teams should		
Course Description	work hard to continuously improve the software applications based on the changing requirements as well as preserve them from failure of decline. While		
Course Decemperen	the former is called software evolution, the latter is called software maintenance.		
	This course will guide students to develop and maintain large scale software		
	products by providing theoretical and practical aspects of software product line		
	paradigm as well as software evolution and maintenance.		
Pre-requisites			
Pre-requisite (Mandatory)	Pre-requisite (Desirable)	Pre-requisite(other)	
Pre-requisite (Mandatory)	Pre-requisite (Desirable) Basic understanding of software engineering concepts and techniques	Pre-requisite(other)	
*Please insert more rows if require	Basic understanding of software engineering concepts and techniques	Pre-requisite(other)	
	Basic understanding of software engineering concepts and techniques	Pre-requisite(other)	
	Basic understanding of software engineering concepts and techniques	Pre-requisite(other)	 CO4
*Please insert more rows if require	Basic understanding of software engineering concepts and techniques Post Conditions		CO4 Can construct common and
*Please insert more rows if require CO1 Can develop the framework of product line	Basic understanding of software engineering concepts and techniques ad Post Conditions CO2	CO3 Can distinguish between existing software system artifacts and be	Can construct common and variable domain specific
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale	Basic understanding of software engineering concepts and techniques Post Conditions CO2 Can implement the software maintenance processes and techniques during	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality	Can construct common and variable domain specific requirements by analysing
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*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale	Basic understanding of software engineering concepts and techniques Post Conditions CO2 Can implement the software maintenance processes and techniques during	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality	Can construct common and variable domain specific requirements by analysing
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*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production	Basic understanding of software engineering concepts and techniques ed Post Conditions CO2 Can implement the software maintenance processes and techniques during software production. Weekly Lecture Plan	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering	Can construct common and variable domain specific requirements by analysing the challenges of domain- specific RE
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*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1	Basic understanding of software engineering concepts and techniques ed Post Conditions CO2 Can implement the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COs Met	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2	Basic understanding of software engineering concepts and techniques ed Post Conditions CO2 Can implement the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COs Met CO2 CO2	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2 Week 3	Basic understanding of software engineering concepts and techniques ed Post Conditions CO2 Can implement the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models Software Product Line Engineering - A Motivation	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COs Met CO2 CO2 CO1	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz Exercise / Presentation
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2 Week 3 Week 4	Basic understanding of software engineering concepts and techniques and Post Conditions CO2 Can implement the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models Software Product Line Engineering - A Motivation Software Framework and Variability	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COs Met CO2 CO2 CO1 CO1	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz Exercise / Presentation Quiz
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2 Week 3 Week 4 Week 5	Basic understanding of software engineering concepts and techniques and set of the software engineering concepts and techniques and set of the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models Software Product Line Engineering - A Motivation Software Framework and Variability Orthogonal Variability Model	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COs Met CO2 CO2 CO1 CO1 CO1 CO1, CO2	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz Exercise / Presentation Quiz Exercise / Presentation
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*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2 Week 3 Week 4 Week 5	Basic understanding of software engineering concepts and techniques and set of the software engineering concepts and techniques and set of the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models Software Product Line Engineering - A Motivation Software Framework and Variability Orthogonal Variability Model	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COs Met CO2 CO2 CO1 CO1 CO1 CO1, CO2	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz Exercise / Presentation Quiz Exercise / Presentation
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2 Week 3 Week 4 Week 5 Week 6	Basic understanding of software engineering concepts and techniques and set of the software engineering concepts and techniques and set of the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models Software Product Line Engineering - A Motivation Software Framework and Variability Orthogonal Variability Model Domain-Specific Requirements Engineering	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COs Met CO2 CO2 CO1 CO1 CO1, CO2 CO4	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz Exercise / Presentation Quiz Exercise / Presentation Quiz
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7	Basic understanding of software engineering concepts and techniques and sed Post Conditions CO2 Can implement the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models Software Product Line Engineering - A Motivation Software Framework and Variability Orthogonal Variability Model Domain-Specific Requirements Engineering Software Re-engineeiring	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COs Met CO2 CO2 CO1 CO1 CO1 CO1, CO2 CO4 CO3	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz Exercise / Presentation Quiz
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8	Basic understanding of software engineering concepts and techniques and bed Post Conditions CO2 Can implement the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models Software Evolution and Maintenance Models Software Framework and Variability Orthogonal Variability Model Domain-Specific Requirements Engineering Software Re-engineeiring Continued from Week 6 and 7	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COs Met CO2 CO2 CO1 CO1 CO1 CO1 CO1 CO3 CO3 CO3 CO3 CO1, CO4	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz Exercise / Presentation
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8 Week 9 Week 10	Basic understanding of software engineering concepts and techniques and Post Conditions CO2 Can implement the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models Software Product Line Engineering - A Motivation Software Framework and Variability Orthogonal Variability Model Domain-Specific Requirements Engineering Software Re-engineeiring Continued from Week 6 and 7 Introduction to DevOps and Containers Microservice Architecture	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COS Met CO2 CO2 CO1 CO1 CO1 CO1 CO1 CO3 CO3 CO3 CO3 CO1, CO4	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz Exercise / Presentation Quiz
*Please insert more rows if require CO1 Can develop the framework of product line engineering in large scale software production Week Number Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8 Week 9 Week 10 Week 11	Basic understanding of software engineering concepts and techniques and Post Conditions CO2 Can implement the software maintenance processes and techniques during software production. Weekly Lecture Plan Lecture Topic Software Evolution Vs Maintenance Software Evolution and Maintenance Models Software Product Line Engineering - A Motivation Software Framework and Variability Orthogonal Variability Model Domain-Specific Requirements Engineering Software Re-engineeiring Continued from Week 6 and 7 Introduction to DevOps and Containers Microservice Architecture Continued from week 10	CO3 Can distinguish between existing software system artifacts and be able to develop the functionality and quality attributes through software re-engineering COS Met CO2 CO1 CO1 CO1 CO1, CO2 CO4 CO3 CO3 CO3 CO1, CO4 CO1	Can construct common and variable domain specific requirements by analysing the challenges of domain-specific RE Assignment/Labs/Tutorial Exercise Quiz Exercise / Presentation
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End-Sem
Term Project / Paper Report

Resource Material			
Туре	Title		
Latest research publications.	Would be conveyed to the students when required.		
Book	Foundations, Principles, and Techniques". Springer-Verlag, 2005		
Book	engineering		
Book	Maintenance - A Practitioner's Approach", 2014		