

Name of the Programme : M.Sc. in Data Science
Course code : CSD-513
Title of course : Software Engineering for AI Enabled Systems (Theory)
Number of credits : 2 (2L-0T-0P)
Contact hours : 30 hours (30L-0T-0P)
Effective from AY : 2023-24

Pre-requisites for the course	Programming & Data Structures, Python	
Course Objectives	1. Gain an in-depth understanding of Software Engineering including its importance. 2. Learn Scrum, Kanban, Agile, Waterfall, Prototyping, Incremental, RAD and Spiral Software Process Models. 3. Learn to perform systematic Software Requirement Engineering. 4. Applying SE approach to developing AI solutions	
Content	Software Engineering: Software Processes, SDLC, agile approaches to SE Requirements Engineering: elicitation techniques, specification. SCRUM and user stories. Test Driven Development: Refactoring and Unit testing	15 hours
	Use of frameworks and APIs and handling of big data Configuration management, continuous integration, and automated software engineering Cloud based software development, DevOps	15 hours
Pedagogy	Lectures/ Tutorials/Hands-on assignments/Self-study/Flipped classroom	

References/ Readings	<ol style="list-style-type: none"> 1. Allbee, B. (2018). Hands-On Software Engineering with Python: Move beyond basic programming and construct reliable and efficient software with complex code. Packt Publishing Ltd. 2. Cohn, M. (2005). Agile estimating and planning. Pearson Education 3. Jalote, P. (2008). A concise introduction to software engineering. Springer Science & Business Media.
Course Outcomes	<ol style="list-style-type: none"> 1. Application of SE principles for AI and Data Science projects 2. How to work in self organizing teams 3. Use of tools and techniques for automating 4. Managing software development

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