

University of Technology
Computer Engineering Department
Academic Year 2023-2024
3st Year- Second semester- All Branches



CECN-346	Software Engineering	2Hr/Week	2 Units
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Contents of syllabus	Hours
<ul style="list-style-type: none"> • Software Engineering- Introduction • Introduction. • Software process models. 	4
Software engineering- requirement specifications <ul style="list-style-type: none"> • Requirement analysis modeling techniques. • Functional and non-functional requirements. • Basic concepts of formal specification techniques. 	4
Modeling Technology- Data modeling Functional modeling and information flow Behavioral modeling The data dictionary	6
Software engineering- formal methods UML <ul style="list-style-type: none"> • Formal methods concepts. • Formal specification languages. • Model checking • Executable and none- executable specifications. • Pre and post assertions. • Formal verification • Tools in support of formal methods. 	6

<p>Software engineering- software verification and validation</p> <ul style="list-style-type: none"> • Distinguishing between verification and validation. • Static approaches and dynamic approaches. • Validation planning; documentation for validation. • Different kinds of testing- human computer interface, usability, reliability, security, conformant to specification. • Testing fundamentals, including test plan creation and test case generation black-box and white-box testing techniques. • Defect seeding. • Unit, integration, validation and system testing. • Object oriented testing. 	<p>6</p>
<p>Software engineering- post installation and Maintenance</p> <ul style="list-style-type: none"> • Installation • Training and support • Software Maintenance • System Restructuring 	<p>4</p>

References:

Text Book: Ian Somerville, Software Engineering. 7th or 8th Edition.