



**Mehran University of Engineering and Technology, Jamshoro**  
**Department of Software Engineering**

**ORIGINAL SUBMITTED SYLLABUS**

<b>Title of Subject</b>	:	<i>SEMANTIC BASED SOFTWARE DEVELOPMENT</i>
<b>Code</b>	:	SE850
<b>Discipline</b>	:	Software Engineering
<b>Effective</b>	:	14PhD-IICT Batch and onwards
<b>Pre-requisite</b>	:	None
<b>Assessment</b>	:	10% Sessional 30% Mid Semester 60% Final Semester Examination
<b>Credit Hours</b>	:	03 + 0
<b>Minimum Contact Hours:</b>		42

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**Specific Objectives of course:**

- the main areas of semantics
- different ways to define meaning
- the interface of semantics and pragmatics
- ways of analysing and contrasting meanings
- formal semantics using propositional logic
- cognitive semantics
- conceptual semantics
- the interface of semantics and morphology
- the interface of semantics and syntax
- semantic change

**Course outline:**

- **XML**  
XML basics, XML Tree, XML Syntax, XML Elements, XML Attributes, XML Namespaces, XML Encoding, Viewing XML, XML and CSS
- **DTDs and XML SCHEMAS**  
XML Doctypes, XML Validator, Document Type Definition, XML Schema
- **Resource Description Framework**  
Introduction to RDF, RDF rules, examples of RDF, RDF Elements, RDF Containers, RDF Collections, RDF Schema, RDF Dublin Core, RDF OWL
- **Web Ontology Language**  
Ontology, OWL, OWL Sublanguages, OWL lite, OWL DL, OWL full
- **SPARQL**  
Structure of SPARQL query, SPARQL architecture, Datapoints, Friend of a Friend Ontology
- **SEMANTIC WEB SERVICES**  
Web Service Description Language, Web Ontology Language Schema, Semantic Annotation for Web Service Description Language
- **Advanced Topics**  
Semantic Opinion Mining,

**BOOKS RECOMMENDED**

- Practical RDF by Shelly Powers. O'Reilly Media; Latest Edition
- Programming the Semantic Web by Toby Segaran, Colin Evans and Jamie Taylor. O'Reilly Media; Latest Edition

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**Approval:**

Board of Studies:	Res.No.02.02	Dated:23-10-2017
AS&RB:	Res.No.13.5	Dated:03-04-2018
Academic Council:	Res.No.92.15	Dated:23-04-2018