

Course code: Course Title	Course Structure			Pre-Requisite
<b>SE410: Semantic Web and Web Mining</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>NIL</b>
	<b>3</b>	<b>1</b>	<b>0</b>	

**Course Objective:** To introduce concepts of semantic web and various techniques of Web Mining

S. NO	Course Outcomes (CO)
<b>CO1</b>	Understand the evolution of web documents and semantic search techniques to enhance information retrieval.
<b>CO2</b>	Apply XML languages in web-based development to structure, store, and transport data efficiently.
<b>CO3</b>	Create and apply ontologies, RDF, and OWL to effectively describe and annotate web resources.
<b>CO4</b>	Analyze, apply, and evaluate advanced semantic web technologies, their applications, and future directions.

S.No.	Contents	Contact Hours
<b>UNIT 1</b>	<b>Introduction:</b> The Semantic Web Roadmap, evolution of Web Documents, Semantic Search Techniques.	<b>10</b>
<b>UNIT 2</b>	<b>XML Languages:</b> Detailed study of XML language & application to Web based developments.	<b>10</b>
<b>UNIT 3</b>	<b>Describing Web Resources:</b> Resource Description Framework (RDF), Taxonomies, Ontologies, Web Ontology Language (OWL), Design process of ontology, Annotation.	<b>12</b>
<b>UNIT 4</b>	<b>Advanced Topics:</b> Semantic Applications & Power, Latest on Semantic Web, Future Directions, W3C Consortium, Case studies in different application.	<b>10</b>
	<b>TOTAL</b>	<b>42</b>

## REFERENCES

S.No.	Name of Books/Authors/Publishers	Year of Publication / Reprint
<b>1.</b>	Grigoris Antoniou, Frank Van Harmelen, "A Semantic Web Primer", MIT Press, 2 <sup>nd</sup> Edition.	<b>2008</b>
<b>2.</b>	Dieter Fensel, James A. Hendler, Henry Lieberman, and Wolfgang Wahlster, "Spinning the Semantic Web - Bringing the World Wide Web to Its Full Potential", MIT Press.	<b>2005</b>
<b>3.</b>	Michael C. Daconta, Leo J. Obrst, Kevin T. Smith, "The Semantic Web: A Guide to the Future of XML, Web Services and Knowledge Management", Wiley Publishing.	<b>2007</b>
<b>4.</b>	John F. Sowa, "Principles of Semantic Networks: Explorations in the Representation of Knowledge", Morgan Kaufmann.	<b>1990</b>
<b>5.</b>	Stuart Russell, Peter Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall.	<b>2022</b>
<b>6.</b>	Han Reichgelt, "Knowledge Representation: An AI Perspective", Ablex Publishing.	<b>1991</b>