COURSE CODE	COURSE TITLE	L	T	P	C
1152IT134	Semantic Web	3	0	0	3

Course Category:

~~Foundation (0) /~~ **Program Core (1)** ~~/ Program Elective (2) / Allied Elective (3) / University Elective (4) / Value Education Elective (5) / Independent Learning (6) / Industry - Higher Learning Institute Interaction (7).~~

a.Preamble

The Semantic Web is an extension of the Web through standards by the World Wide Web Consortium (W3C) The standards promote common data formats and exchange protocols on the Web, most fundamentally the Resource Description Framework (RDF).According to the W3C, "The Semantic Web provides a common framework that allows data to be shared and reused across application, enterprise, and community boundaries". The term was coined by Tim Berners-Lee for a web of data that can be processed by machines. While its critics have questioned its feasibility, proponents argue that applications in industry, biology and human sciences research have already proven the validity of the original concept.

b. Prerequisite Courses:

Database management system

c. Related Courses:

Data mining

d. Course Educational Objectives :

Students undergoing this course are expected to

1. To understand the concepts of Semantic Web.
2. To understand the characteristics of the agents.
3. To understand design and implementation of Agents.
4. To understand the implementation described in the architecture level.

e. Course Outcomes :

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
CO1	Discuss about basic of semantic web and search engine	K1

CO2	Explain RDFS and its process	K2
CO3	Explain owl and its operation	K2
CO4	Explain semantic issue and prototype system	K2
CO5	Explain various semantic web services and its design	K2

f. Correlation of COs with POs :

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	**M**		**L**		**L**							
CO2	**M**		**L**		**M**							
CO3	**M**		**M**		**M**							
CO4	**M**				**M**							
CO5	**M**				**M**							

- H- High; M-Medium; L-Low

g. Course Content :

UNIT I - INTRODUCTION

The world of the semantic web-WWW-meta data-Search engine-Search engine for traditional web-Semantic web-Search engine for semantic web-Traditional web to semantic web.

UNIT II - SEMANTIC WEB TECHNOLOGY

RDF-Rules of RDF-Aggregation-Distributed information-RDFS-core elements of RDFS-Ontology-Taxonomy-Inferencing based on RDF schema

UNIT III - OWL

OWL-Using OWL to define classes-Set operators-Enumerations-Define propertiesontology matching-Three faces of OWL-Validate OWL.

UNIT IV- SWOOGLE

Swoogle-FOAF-Semantic markup-Issues-prototype system-Design of Semantic web search engine-Discovery and indexation-prototype system-case study.

UNIT V - SEMANTIC WEB SERVICES

Semantic web services-OWL-S-Upper ontology-WSDL-S,OWL-S to UDDI mapping ,Design of the search engine,implementations.

Total: 45

h. Learning Resources

i.Text Books :

1. Liyang Yu , “Introduction to the Semantic Web and Semantic web services” Chapman & Hall/CRC, Taylor & Francis group, 2007.

ii.Reference:

1.Johan Hjelm, “Creating the Semantic Web with RDF“, Wiley,2001

2. Grigoris Antoniou and Frank van Harmelen, “A Semantic Web Primer”, MIT Press, 2012.

iii. Online resources

1.http://www.w3.org/standards/semanticweb/

2. http://www.w3.org/2001/sw/

3. http://semanticweb.org/wiki/Main_Page