

## **MC5011 SEMANTIC WEB**

### DETAILED SYLLABUS

#### **UNIT I INTRODUCTION**

Introduction to the Syntactic web and Semantic Web – Evolution of the Web – The visual and syntactic web – Levels of Semantics – Metadata for web information - The semantic web architecture and technologies –Contrasting Semantic with Conventional Technologies – Semantic Modeling -Potential of semantic web solutions and challenges of adoption.

#### **UNIT II ONTOLOGICAL ENGINEERING**

Ontologies – Taxonomies –Topic Maps – Classifying Ontologies – Terminological aspects: concepts,terms, relations between them – Complex Objects –Subclasses and Sub-properties definitions–Upper Ontologies – Quality – Uses - Types of terminological resources for ontology building –Methods and methodologies for building ontologies – Multilingual Ontologies - Ontology Developmentprocess and Life cycle – Methods for Ontology Learning – Ontology Evolution – Versioning.

#### **UNIT III DESCRIBING WEB RESOURCES**

RDF Overview-The basic elements of RDF-RDF triples-Fundamental rules of RDFAggregation and distributed information-RDF tools-RDFS, Taxonomy, and Ontology-Need for RDFS-Core elements of RDFS .

#### **UNIT IV WEB ONTOLOGY LANGUAGE**

Requirements for Ontology Languages-OWLSublanguages-Description of the OWL Language-Layering of OWL-Examples for OWL-OWL in OWL-Namespaces, Classes of Classes, Class Equivalence, Building Classes from Other Classes, Restricting Properties of Classes.

#### **UNIT V REAL-WORLD EXAMPLES AND APPLICATIONS**

Swoogle- architecture, usage and examples-FOAF: Friend of a Friend-Basic FOAF vocabulary and examples-Applications-Information publishing, data integration, knowledge management, e-learning, web-services.

#### **REFERENCES**

1. Grigoris Antoniou, Frank Van, “Semantic Web Primer”, MIT Press

## Diploma, Anna University-UG, PG., HSC & SSLC

*Notes*  
*Syllabus*  
*Question Papers*  
*Results and Many more...*

Available @  
[www.AllAbtEngg.com](http://www.AllAbtEngg.com)

2. Karin K. Breitman, Marco Antonio Casanova and Walter Truszowski, "Semantic Web Concepts: Technologies and Applications", Springer, 2007
3. LiyangYu , "Introduction to the Semantic Web and Semantic web services" Chapman & Hall/CRC, Taylor & Francis group, 2007
4. Peter Mika, "Social networks and the SemanticWeb", Springer, 1st edition 2007.
5. Robert M. Colomb, "Ontology and the Semantic Web", Volume 156 ,Frontier in Artificial Intelligence and Applications, IOS Press, 2007

### **OBJECTIVES**

- To learn the importance of semantic web.
- To appreciate the merits of semantic web over traditional web.
- To know the methods to discover, classify and build ontology for more reasonable results in searching.
- To learn and appreciate RDF and its taxonomy.
- To describe OWL and its usage in semantic web.
- To implement applications that can access, use and manipulate the ontology