



STANLEY

COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
(Approved by AICTE , New Delhi | Affiliated to Osmania University ,Hyderabad)
Address : Chapel Road, Abids ,Hyderabad

CS 472

SEMANTIC WEB (Elective III)

UNIT I

The Future of the Internet: Introduction, The Syntactic Web, The Semantic Web, The working Semantic Web. **Ontology in Computer Science:** Defining the Term Ontology, Differences among Taxonomies, Thesauri, and Ontologies, Classifying Ontologies, Web Ontologies, Web Ontology Description Languages, Ontology, Categories, and Intelligence.

UNIT II

Knowledge Representation in Description Logic: Introduction, an Informal Example, the Family of Attributive Languages, Inference Problems. **RDF and RDF Schema:** Introduction, XML Essentials, RDF, RDF Schema, A Summary of the RDF/RDF Schema Vocabulary.

UNIT III

OWL: Introduction, Requirements for Web Ontology Description Languages, Header Information, Versioning, and Annotation Properties, Properties, Classes, Individuals, Data types, A Summary of the OWL Vocabulary. **Rule Languages:** Introduction, Usage Scenarios for Rule Languages, Datalog, RuleML, SWRL, TRIPLE. **Semantic Web Services:** Introduction, Web Service Essentials, OWL-S Service Ontology, An OWL-S Example.

UNIT IV

Methods for Ontology Development: Introduction, Uschold and King Ontology Development Method, Toronto Virtual Enterprise Method, Methontology, KACTUS Project Ontology Development Method, Lexicon-Based Ontology Development Method, Simplified Methods. **Ontology Sources:** Introduction, Metadata, Upper Ontologies, Other Ontologies of Interest, Ontology Libraries. **Semantic Web Software Tools:** Introduction, Metadata and Ontology Editors, Reasoners, Other tools.

UNIT V

Software Agents: Introduction, Agent Forms, Agent Architecture, Agents in the Semantic web Context. **Semantic Desktop:** Introduction, Semantic Desktop Metadata, Semantic Desktop Ontologies, Semantic Desktop Architecture, Semantic Desktop Related Applications. **Ontology**

Application in Art: Introduction, Ontologies for the Description of Works of Art, Metadata Schemas for The Description of Works of Art, Semantic Annotation of Art Images.

SUGGESTED READING:

1. Semantic Web Concepts: Technologies and Applications, Karin K. Breitman, Marco Antonio Casanova and Walter Truszcowski, Springer.

REFERENCES:

1. Information Sharing on the Semanting Web, Heiner Stuckenschmidt, Frank van Harmelen, Springer.
2. Semantic Web Primer, Grigoris Antoniou, Frank Van, third Edition, MIT Press.
3. Semantic Web Services: Concepts, Technologies and Applications, Rudi Studer, Stephan Grimm, Andreas Abeker, Springer.
4. Towards the Semantic Web: Ontology Driven Knowledge Management, John Davis, Dieter Fensal, Frank Van Harmelen, J. Wiley.