UNIT V WEB ANALYTICS 9+6

Web Analytics Process – Data Collection – Qualitative Analysis – Log File Analysis – Page Tagging – Hybrid Methods – Click Analytics – Onsite And Offsite Analytics – Web Analytics Methods

TOTAL : 45+30 : 75 PERIODS

OUTCOMES:

Upon completion of the course, the student will be able to

- Design web pages that follow standards and are usable.
- Design web sites that are appealing.
- To be able to use Content management System for designing web Content.
- To take advantage of Content Management System tools for managing content for large web sites.
- To be able to use analytics tools for better management.

REFERENCES:

1. Patrich J. Lynch, Sarah Horton, "Web Style Guide-Foundations of User Experience Design", Yale University Press, 4th Edition, 2016.
2. Thomas A. Powell, "The Complete Reference– Web Design", Tata McGraw Hill, Second Edition, 2003.
3. Joel Sklar, "Principles of Web Design, Cengage Learning", Web Warrior Series, 6th Edition,2015.
4. Deane Barker, "Web Content management-Systems, Features and Best Practices", O'reilly Media, 1st Edition, 2016.
5. Brian Clifton, "Advanced web Metrics with Google Analytics", Third Edition, Sybex Publishers, 2012.
6. Avinash Kaushik, "Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity", 1st edition, Sybex publishers, 2009.

CO	PO						PSO		
	1	2	3	4	5	6	1	2	3
1.	√	√	√	√			√	√	
2.	√	√	√	√		√	√	√	
3.	√		√	√		√	√	√	
4.	√		√	√		√	√	√	√
5.	√		√	√		√	√	√	

IF5090 SEMANTIC WEB L T P C
3 0 2 4

OBJECTIVES:

- To learn the fundamentals of semantic web and to conceptualize and depict Ontology for semantic web.
- To understand the languages for semantic web.
- To learn about the ontology learning algorithms and to utilize in the development of an application.
- To know the fundamental concepts of ontology management.
- To learn the applications related to semantic web.

UNIT I THE QUEST FOR SEMANTICS 9

Building Models – Calculating with Knowledge – Exchanging Information – Semantic Web Technologies – Layers – Architecture – Components – Types – Ontological Commitments – Ontological Categories – Philosophical Background – Sample Knowledge Representation Ontologies – Top Level Ontologies – Linguistic Ontologies – Domain Ontologies – Semantic Web – Need – Foundation.

Suggested Activities:

- Flipped classroom on semantic web background and tutorial activity in class.
- Brainstorming session on various knowledge representation formats in class.

Suggested Evaluation Methods:

- Tutorial – Semantic web basics.
- Quizzes on knowledge representation formats.

UNIT II LANGUAGES FOR SEMANTIC WEB AND ONTOLOGIES 9

Web Documents in XML – RDF – Schema – Web Resource Description using RDF – RDF Properties – Topic Maps and RDF – Overview – Syntax Structure – Semantics – Pragmatics – Traditional Ontology Languages – LOOM – OKBC – OCML – Flogic Ontology Markup Languages – SHOE – OIL – DAML+OIL – OWL.

Suggested Activities:

- Flipped classroom on comparison of various semantic web related languages and tutorial activity in class.

Suggested Evaluation Methods:

- Quizzes on various ontology related languages.

UNIT III ONTOLOGY LEARNING FOR SEMANTIC WEB 9

Taxonomy for Ontology Learning – Layered Approach – Phases of Ontology Learning –Importing and Processing Ontologies and Documents – Ontology Learning Algorithms –Methods for evaluating Ontologies.

Suggested Activities:

- Flipped classroom on natural language processing techniques like statistical text analysis, term extraction, Word sense disambiguation, concept extraction and tutorial activity in class.
- External reading – https://nlp.stanford.edu/fsnlp/

Suggested Evaluation Methods

- Tutorials – Language processing techniques.

UNIT IV ONTOLOGY MANAGEMENT AND TOOLS 9

Overview – Need for management – Development process – Target Ontology – Ontology mapping – Skills management system – Ontological class – Constraints – Issues – Evolution –Development of Tools and Tool Suites – Ontology Merge Tools – Ontology based Annotation Tools.

Suggested Activities:

- Flipped classroom on study of various ontology related tools.

Suggested Evaluation Methods

- Tutorials – Ontology related tools like Protege, Ontolingua, Webonto.

UNIT V APPLICATIONS 9

Web Services – Semantic Web Services – Case Study for specific domain – Security issues – Web Data Exchange and Syndication – Semantic Wikis – Semantic Portals – Semantic Metadata in Data Formats – Semantic Web in Life Sciences – Ontologies for Standardizations – Rule Interchange Format.

Suggested Activities:

- Flipped classroom on other applications of semantic web.

Suggested Evaluation Methods

- Quizzes on semantic web applications.

PRACTICAL EXERCISES: 30

1. Design of simple ontology on their domain of interest using Protege like tool.
2. Create RDF document using PHP library EasyRdf.
3. Use OWL language to represent relationships, properties and to provide inferences from created ontology.
4. Term extraction and Term disambiguation from corpus using Alchemy like API.
5. Use of any tool to apply SAPRQL queries and implement reasoning for avoiding inconsistencies.
6. Exercises on Merging two ontologies, Applying association rules and Applying clustering algorithms.
7. Development of Simple application like chat bot, semantic search engine creation using Topic map data models extracted from Ontopia/Mappa.
8. Creating intelligent expert systems using semantic Wikis like SMW+.

TOTAL: 75 PERIODS

OUTCOMES:

On completion of the course, the students will be able to:

1. Create ontology for a given domain.
2. Develop an application using ontology languages and tools.
3. Understand the concepts of semantic Web.
4. Use ontology related tools and technologies for application creation.
5. Design and develop applications using semantic web.
6. Understand the standards related to semantic web.

REFERENCES:

1. Pascal Hitzler, Markus Krötzsch, Sebastian Rudolph, “Foundations of Semantic Web Technologies”, Chapman & Hall/CRC, 2009.
2. Asuncion Gomez-Perez, Oscar Corcho, Mariano Fernandez-Lopez, “Ontological Engineering: with Examples from the Areas of Knowledge Management, e-Commerce and the Semantic Web”, Springer, 2004.
3. Grigoris Antoniou, Frank van Harmelen, “A Semantic Web Primer (Cooperative Information Systems)”, MIT Press, 2004.
4. Alexander Maedche, “Ontology Learning for the Semantic Web”, First Edition, Springer. 2002.
5. John Davies, Dieter Fensel, Frank Van Harmelen, “Towards the Semantic Web: Ontology Driven Knowledge Management”, John Wiley, 2003.
6. John Davies, Rudi Studer, Paul Warren, (Editor), “Semantic Web Technologies: Trends and Research in Ontology-Based Systems”, Wiley, 2006.

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	1	2	2	1	1
CO2	3	1	2	3	3	1
CO3	2	2	2	3	1	1
CO4	3	1	2	3	3	2
CO5	3	1	2	3	3	2
CO6	2	2	1	2	2	3
Overall	3	1	2	3	3	2

IF5088 MOBILE APPLICATION DEVELOPMENT L T P C

3 0 2 4

OBJECTIVES:

- To understand the need and characteristics of mobile applications.
- To design the right user interface for mobile application.
- To understand the design issues in the development of mobile applications.
- To understand the development procedures for mobile application.
- To develop mobile applications using various tools and platforms.

UNIT I INTRODUCTION 9

Mobile applications – Characteristics and Benefits – Application Model – Infrastructure and Managing Resources – Mobile Device Profiles – Frameworks and Tools.

Suggested Activities:

- Flipped classroom on survey on mobile application models.
- External learning – mobile application design using frameworks and tools.

Suggested Evaluation Methods:

- Quiz – questionnaire related to mobile application models.
- Assignment – evaluate using learning content management system like Moodle.

UNIT II USER INTERFACE 9

Generic UI development – Designing the right UI – Multimodal and Multichannel UI – Gesture based UI – Screen Elements and Layouts – Voice XML.

Suggested Activities:

- Flipped classroom on discussion on UI for mobile application like voice and gestures.
- External learning – survey on different view elements for mobile application.

Suggested Evaluation Methods:

- Quiz – questionnaire related to user interface design for mobile applications.
- Assignment – evaluate using learning content management system like Moodle.