FR. Conceicao Rodrigues College Of Engineering

Father Agnel Ashram, Bandstand, Bandra-west, Mumbai-50

Department of Information Technology

B.E. (IT) (semester VI) (2018-2019)

Lesson Plan:

Subject: Advance Internet Programming (ITDLO6021**)** **Credits-4**

Course Code	Course Name	Theory	Practical	Tutorial	Theory	Practical /Oral	Tutorial	Total
ITDLO6021	Advance Internet Programming	04	--	--	04	--	--	04

Course Code	Course Name	Examination Scheme						
		Theory Marks				Term Work	Oral & Practical	Total
		Internal assessment			End Sem. Exam			
		Test1	Test2	Avg. of two Tests				
ITDLO6021	Advance Internet Programming	20	20	20	80	--	--	100

Course Objectives: Students will try:

1. To get familiar with the concept of Search Engine Basics.
2. To Understand Search Engine Optimization Techniques.

3. To Learn Web Service Essentials.
4. To gain knowledge of Rich Internet Application Technologies.

5. To be familiarized with Web Analytics 2.0
6. To explore Web 3.0 and Semantic web standards.

Course Outcomes: Students will be able to:

1. Determine SEO Objectives and Develop SEO plan prior to Site Development.

2. Explain Search Engine Optimization Techniques and Develop Keyword Generation.
3. Describe different Web Services Standards.

4. Develop Rich Internet Application using proper choice of Framework.
5. Apply multiple quantitative and qualitative methods for web analytics 2.0.

6. Explain Web 3.0 and Semantic web standards

Prerequisite: Basics of Internet Programming – HTML5, CSS3, XML.

Detailed syllabus:

Sr. No.	Module	Detailed Content	Hours	CO Mapping
0	Prerequisite	Introduction to HTML 5 & CSS3 basics, XML basics	02	
I	Search Engine Basics	Search Engine Basics Algorithm based Ranking Systems – Determining Searcher Intent and Delivering Relevant, Fresh Content, Analyzing Ranking Factors, Using Advanced Search Techniques, Vertical Search Techniques, Country Specific search engines. Determining SEO Objective and Finding Your Site's Audience – Setting SEO Goals and Objective Developing SEO plans Prior to Site Development, SEO for Raw traffic ; E-commerce Sales; Mindshare/Branding; Direct Marketing; Reputation Management; Ideological Influence	09	CO1
II	Search Engine Optimization	Getting started SEO: Defining Your Site's Information Architecture, Auditing an Existing Site to identify SEO Problems, Identifying Current Server Statistic Software and Gaining Access – Determining Top competitors, Benchmarking Current Indexing Status, Current Rankings, Benchmarking Current Traffic Source and Volumes, Conduct SEO/Website SWOT analysis.	09	CO1 CO2

		Keyword Generation – Creating Pages – Website Structure- Creating Content-Creating Communities-building Links-Using Google Analytics-Social Media Optimization-Creating Pay-per-click Campaigns- Optimizing PPC Campaigns through Quality Score optimization - Tracking Results and Measuring Success.		
III	Web Services	Web Services: Introduction to Web Services, XML, XSL, XSLT, WSDL, SOAP, UDDI, Transaction, Business Process Execution Language for web Services, WS-Security and web service security specification, WS-Reliable Messaging, WS-Policy, WS-Attachments. REST-ful web services, Resource Oriented Architecture, Comparison of REST, SOA, SOAP.	08	CO1 CO2 CO3
IV	Rich Internet Application	**Introduction to AJAX**, Blogs, Wikis, RSS feeds **Working with Java Script Object Notation (JSON)**, Implement JSON on server side,	08	CO4

| | | Implementing Security and Accessibility in AJAX Applications: Secure AJAX application, Accessible Rich Internet Applications

Developing RIA using AJAX Techniques: CSS, HTML, DOM, XMLHTTPRequest, JavaScript, PHP, AJAX as REST Client

Introduction to Open Source Frameworks and CMS for RIA: Django, Drupal, Joomla introduction and comparison. | | |
|---|---|---|---|---|
| V | Web Analytics 2.0 | Introduction to Web Analytics 2.0 1: State of the Analytics Union, State of the Industry, Rethinking Web Analytics: Meet Web Analytics 2.0, Optimal Strategy for Choosing Your Web Analytics Soul Mate. The Awesome World of Clickstream Analysis: Metrics. The Key to Glory: Measuring Success. Failing Faster: Unleashing the Power of Testing and Experimentation. | 08 | CO4

CO5 |
| VI | Web 3.0 and Semantic Web | **Web 3.0 and Semantic Web**: Challenges, Components,

Semantic Web Stack: RDF, RDF Schema (RDFS), Simple Knowledge Organization System (SKOS), SPARQL as RDF query language, N-Triples as a format for storing and transmitting data, Turtle (Terse RDF Triple Language), Web Ontology Language (OWL) a family of knowledge representation languages, Rule Interchange Format (RIF), a framework of web rule language dialects | 08 | CO4

CO5

CO6 |

Text Books:

1**.** The Art of SEO O'Reilly Publication

2. Web Services Essentials by Ethan Cerami O'Reilly Media

3. Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity, by Avinash Kaushik, ISBN: 978-0-470-52939-3, wiley publication.

4. "Semantic Web Technologies: Trends and Research in Ontology-based Systems", by John Davies, Rudi Studer, and Paul Warren John, Wiley & Son'
5. Advance Internet Technology by Dr. Deven Shah Dreamtech.

References:

1. RESTful Web Services, By Leonard Richardson, Sam Ruby, O'Reilly Media

2. Rich Internet Application AJAX and Beyond WROX press
3. Handbook of Semantic Web Technologies, by John Domingue, Dieter Fensel, Springer Reference

4. Tim O'Reilly, What is Web 2.0? : Design Patterns and Business Models for the Next Generation of Software, O'REILLY

Assessment:

Internal Assessment for 20 marks:

Consisting of **Two Compulsory Class Tests**

Approximately 40% to 50% of syllabus content must be covered in First test and remaining 40% to 50% of syllabus contents must be covered in second test.

End Semester Examination: Some guidelines for setting the question papers are as:

- Weightage of each module in end semester examination is expected to be/will be proportional to number of respective lecture hours mentioned in the syllabus.

- Question paper will comprise of total **six questions**, **each carrying 20 marks.**

- **Q.1** will be **compulsory** and should **cover maximum contents of the syllabus**.

- **Remaining question will be mixed in nature** (for example if Q.2 has part (a) from module 3 then part (b) will be from any other module. (Randomly selected from all the modules.)

- Total **four questions** need to be solved.

2. Course Outcome Statement

Sr.No.	Course Outcome Statement
ITDLO6021.1	Determine SEO Objectives and Develop SEO plan prior to Site Development
ITDLO6021.2	Explain Search Engine Optimization Techniques and Develop Keyword Generation.
ITDLO6021.3	Describe different Web Services Standards.
ITDLO6021.4	Develop Rich Internet Application using proper choice of Framework.
ITDLO6021.5	Apply multiple quantitative and qualitative methods for web analytics 2.0.
ITDLO6021.6	Explain Web 3.0 and Semantic web standards

3.CO-PO and CO-PSO Mapping

Course Name	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
ITDLO6021.1		3	1											2
ITDLO6021.2		2			2									2
ITDLO6021.3		2			2									2
ITDLO6021.4		1	3		2									2
ITDLO6021.5		3		1	2									2
ITDLO6021.6					3									2

4. CO Assessment Tools

	Direct Methods				Indirect Methods
					Course Exit Survey
ITDLO6021.1	UT1(70%)	UE(30%)			100%
ITDLO6021.2	UT1(70%)	UE(30%)			100%
ITDLO6021.3	UT2(70%)	UE(30%)			100%
ITDLO6021.4	UT2(70%)	UE(30%)			100%
ITDLO6021.5	UT2(70%)	UE(30%)			100%
ITDLO6021.6	UT2(70%)	UE(30%)			100%

5. Course Outcomes Target:

Upon Completion of this course students will be able to:

ITDLO6021.1: Determine SEO Objectives and Develop SEO plan prior to Site Development

Target level:2

ITDLO6021.2: Explain Search Engine Optimization Techniques and Develop Keyword Generation

Target level:2

ITDLO6021.3: Describe different Web Services Standards

Target level:2

ITDLO6021.4: Develop Rich Internet Application using proper choice of Framework.

Target level:2

ITDLO6021.5: Apply multiple quantitative and qualitative methods for web analytics 2.0.

Target level:2

ITDLO6021.6: Explain Web 3.0 and Semantic web standards

Target level:2

6.Content Beyond Syllabus

1. Usage of tools like Google Analytics in the lab

7. Lesson Plan

No of classes available:	48		1. No of Classes taken: 2.Total Remedial Lectures		
Sr. No.	Topic Planned with CO		Planned Date	Actual Date	Delivery Mechanisms
	Don't forget to include CO dissemination				
1.	Search Engine Basics (ITDLO6021.1)		17-01-2018	17-01-2018	Blackboard, ppt, notes, video, hands-on session in lab
2.	Search Engine Optimization(ITDLO6021.2)		08-02-2018	11-02-19	Blackboard, notes, hands-on session in Lab
3.	Web services(ITDLO6021.3)		01-03-2019	01-03-2019	Blackboard, notes, hands-on session in lab
4.	Rich Internet Application(ITDLO6021.4)		18-03-2019	18-03-2019	Blackboard, notes, ppt
5.	Web Analytics 2.0		02-04-2019	02-04-2019	Blackboard, notes
6.	Web 3.0 and Semantic Web		05-04-2019	05-04-2019	Blackboard, notes, hands-on session

Date wise lecture plan

Date	Topic Taught	Date	Topic Taught
01-01-2018	Search Engine Basics	02-01-2018	Algorithm based Ranking Systems
03-01-2018	Searcher Intent and Delivering Relevant, Fresh Content	04-01-2018	Analyzing Ranking Factors
07-01-2018	Using Advanced Search Techniques	08-01-2018	Vertical Search Techniques, Country Specific search engines

09-01-2018	Determining SEO Objective and Finding Your Site's Audience – Setting SEO Goals and Objective	10-01-2018	Developing SEO plans Prior to Site Development
11-01-2018	SEO for Raw traffic ; E-commerce Sales	14-01-2018	Mindshare/Branding; Direct Marketing
15-01-2018	Reputation Management; Ideological Influence	17-01-2018	Getting started SEO: Defining Your Site's Information Architecture
18-01-2018	Auditing an Existing Site to identify SEO Problems	21-01-2018	Identifying Current Server Statistic Software and Gaining Access – Determining Top competitors
22-01-2018	Benchmarking Current Indexing Status, Current Rankings, Benchmarking Current Traffic Source and Volumes	24-01-2018	Conduct SEO/Website SWOT analysis
25-01-2018	Keyword Generation – Creating Pages	28-01-2018	Website Structure- Creating Content-Creating Communities
29-01-2018	Using Google Analytics	01-02-2018	Building Links, Social Media Optimization
07-02-19	Creating Pay-per-click Campaigns- Optimizing PPC Campaigns through Quality Score optimization	11-02-19	Tracking Results and Measuring Success.
12-02-19	Web Services: Introduction to Web Services, XML, XSL, XSLT	18-02-19	WSDL, SOAP, UDDI
21-02-19	Transaction, Business Process Execution Language for web Services	22-02-19	WS-Security and web service security specification, WS-Reliable Messaging
22-02-19	WS-Policy, WS-Attachments	26-02-19	REST-ful web services
28-02-19	Resource Oriented Architecture	01-03-19	Resource Oriented Architecture, Comparison of REST, SOA, SOAP.
05-03-19	Introduction to AJAX, Blogs, Wikis, RSS feeds	07-03-19	Implement JSON on server side,

08-03-19	Implementing Security and Accessibility in AJAX Applications: Secure AJAX application	11-03-19	Accessible Rich Internet Applications
12-03-19	CSS, HTML, DOM, XMLHTTPRequest	14-03-19	JavaScript, PHP, AJAX as REST Client
18-03-19	Django, Drupal	18-03-19	Joomla introduction and comparison..
19-03-19	Introduction to Web Analytics 2.0 1: State of the Analytics Union,	22-03-19	State of the Industry
25-03-19	Rethinking Web Analytics: Meet Web Analytics 2.0	26-03-19	Optimal Strategy for Choosing Your Web Analytics Soul Mate..
29-03-19	The Awesome World of Clickstream Analysis: Metrics, The Key to Glory: Measuring Success	01-04-19	Failing Faster: Unleashing the Power of Testing and Experimentation
02-04-19	. Web 3.0 and Semantic Web: Challenges, Components, Semantic Web Stack: RDF, RDF, Schema (RDFS), Simple Knowledge Organization System (SKOS),	03-04-19	SPARQL as RDF query language, N-Triples as a format for storing and transmitting data, Turtle
04-04-19	Web Ontology Language (OWL) a family of knowledge representation languages	05-04-19	Aframework of web rule language dialects supporting rule interchange on the Web