

**FR. Conceicao Rodrigues College Of Engineering**

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

**Department of Information Technology****B.E. (IT) (semester VI) (2019-2020)****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:**

<b>Sr. No.</b>	<b>Module</b>	<b>Detailed Content</b>	<b>Hours</b>	<b>CO Mapping</b>
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

		<p>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.</p>		
III	Web Services	<p>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.</p>	08	<p>CO1</p> <p>CO2</p> <p>CO3</p>
IV	Rich Internet Application	<p><b>Introduction to AJAX</b>, Blogs, Wikis, RSS feeds</p> <p><b>Working with Java Script Object Notation (JSON)</b>, Implement JSON on server side,</p>	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	08	CO4  CO5
		Analysis: Metrics. The Key to Glory: Measuring Success. Failing Faster: Unleashing the Power of Testing and Experimentation.		
VI	Web 3.0 and Semantic Web	<b>Web 3.0 and Semantic Web:</b> 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.





#### 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, Advanced Search Operators 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)	20-01-2020	22-01-2020	Blackboard, ppt, notes, video, hands-on session in lab
2.	Search Engine Optimization(ITDLO6021.2)	11-02-2020	14-02-2020	Blackboard, notes, hands-on session in Lab
3.	Web services(ITDLO6021.3)	12-03-2020		Blackboard, notes, hands-on session in lab
4.	Rich Internet Application(ITDLO6021.4)	24-03-2020		Blackboard, notes, ppt
5.	Web Analytics 2.0	02-04-2020		Blackboard, notes
6.	Web 3.0 and Semantic Web	10-04-2020		Blackboard, notes, hands-on session

### Date wise actual lecture plan

Date	Topic Taught	Date	Topic Taught
06-01-2020	Search Engine Basics	07-01-2020	Algorithm based Ranking Systems
08-01-2020	Searcher Intent and Delivering Relevant, Fresh Content	10-01-2020	Analyzing Ranking Factors
13-01-2020	Using Advanced Search Techniques	14-01-2020	Vertical Search Techniques, Country Specific search engines

15-01-2020	Determining SEO Objective and Finding Your Site's Audience – Setting SEO Goals and Objective	15-01-2020	Developing SEO plans Prior to Site Development
20-01-2020	SEO for Raw traffic ; E-commerce Sales	21-01-2020	Mindshare/Branding; Direct Marketing
22-01-2020	Reputation Management; Ideological Influence	24-01-2020	Getting started SEO: Defining Your Site's Information Architecture
27-01-2020	Auditing an Existing Site to identify SEO Problems	28-01-2020	Identifying Current Server Statistic Software and Gaining Access – Determining Top competitors
29-01-2020	Benchmarking Current Indexing Status, Current Rankings, Benchmarking Current Traffic Source and Volumes	03-02-2020	Conduct SEO/Website SWOT analysis
04-02-2020	Keyword Generation – Creating Pages	05-02-2020	Website Structure- Creating Content- Creating Communities
07-02-2020	Using Google Analytics	10-02-2020	Building Links, Social Media Optimization
11-02-2020	Creating Pay-per-click Campaigns- Optimizing PPC Campaigns through Quality Score optimization	14-02-2020	Tracking Results and Measuring Success.
	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		Resource Oriented Architecture, Comparison of REST, SOA, SOAP.
	Introduction to AJAX, Blogs, Wikis, RSS feeds		Implement JSON on server side,

	Implementing Security and Accessibility in AJAX Applications: Secure AJAX application		Accessible Rich Internet Applications
	CSS, HTML, DOM, XMLHttpRequest		JavaScript, PHP, AJAX as REST Client
	Django, Drupal		Joomla introduction and comparison..
	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
	. 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
	Web Ontology Language (OWL) a family of knowledge representation languages		Aframework of web rule language dialects supporting rule interchange on the Web