

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:

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

		<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>Introduction to AJAX, Blogs, Wikis, RSS feeds</p> <p>Working with Java Script Object Notation (JSON), Implement JSON on server side,</p>	08	CO4

		<p>Implementing Security and Accessibility in AJAX Applications: Secure AJAX application, Accessible Rich Internet Applications</p> <p>Developing RIA using AJAX Techniques: CSS, HTML, DOM, XMLHttpRequest, JavaScript, PHP, AJAX as REST Client</p> <p>Introduction to Open Source Frameworks and CMS for RIA: Django, Drupal, Joomla introduction and comparison.</p>		
V	Web Analytics 2.0	<p>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</p>	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	<p>Web 3.0 and Semantic Web: Challenges, Components,</p> <p>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</p>	08	CO4 CO5 CO6
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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

Additional resources used

1. **SEO for dummies O'REILLY publications**

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:	42	1. No of Classes taken: 2.Total Remedial Lectures	42	
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)	11-02-2021	11-02-2021	Blackboard, ppt, notes, video, hands-on session in lab
2.	Search Engine Optimization(ITDLO6021.2)	19-03-2021	19-03-2021	Blackboard, notes, hands-on session in Lab
3.	Web services(ITDLO6021.3)	09-04-2021	12-04-2021	Blackboard, notes, hands-on session in lab
4.	Rich Internet Application(ITDLO6021.4)	29-04-2021	29-04-2021	Blackboard, notes, ppt
5.	Web Analytics 2.0(ITDLO6021.5)	05-05-2021	05-05-2021	Blackboard, notes
6.	Web 3.0 and Semantic Web (ITDLO6021.6)	17-05-2021	17-05-2021	Blackboard, notes, hands-on session

Date wise actual lecture plan

Date	Topic Taught	Link of recorded lecture	Date	Topic Taught	Link of recorded lecture
25-01-2021	Syllabus, Course Outcomes, Introduction, SERP	https://drive.google.com/file/d/18c8WKTlluyFLpBetz40dRDNNPo4MDmW/view?usp=sharing	27-01-2021	Algorithm based ranking system	https://drive.google.com/file/d/1v2Ogw934IfKwWACVAIQQRhDTlh66l4iF/view?usp=sharing
28-01-2021	Determining searcher intent	https://drive.google.com/file/d/1ANi-r5DG5zyi8KklPctM3m5EJkSbi3Uz/view?usp=sharing	29-01-2021	Determining searcher intent, Link analysis	https://drive.google.com/file/d/1ByZ8gZ6pryBP6mNTXXbsu7-BndBMY6P9/view?usp=sharing
01-02-2021	Analyzing ranking factors	https://drive.google.com/file/d/1KFGdcQE8RaRybf3xgMuAyuzd1zSMZzF/view?usp=sharing	03-02-2021	Other ranking factors, vertical search	https://drive.google.com/file/d/1hk7h4WM1YwK8RgngoWOwvSJ4xJ-IA5T/view?usp=sharing
04-02-2021	Vertical search and country specific search	https://drive.google.com/file/d/189QcrSogsulPZ51sW9edjhwmgUGwq4Bng/view?usp=sharing	05-02-2021	Advanced search operators	https://drive.google.com/file/d/1ZN845mb3B1FXffKblpfV5q1qMom_pcIX/view?usp=sharing
08-02-2021	SEO goals and Objectives	https://drive.google.com/file/d/1q8UxpofXfuGs4ftO_QevihKX0wtXWeEO/view?usp=sharing	10-02-2021	Developing SEO plan prior to site development, SEO for raw traffic, SEO for E-Commerce sales	https://drive.google.com/file/d/1rBkinxKxXqBkhARws9ooBXcTkpf5Eeq/view?usp=sharing
11-02-2021	SEO for branding, lead generation, reputation management and ideological influence	https://drive.google.com/file/d/1hWSvUmwqmplwePQYWE-RHfjmTQxjifln/view?usp=sharing	12-02-2021	Building site's information architecture	https://drive.google.com/file/d/1G3wUBGh-kKp377-Py7U0yzNoahGlvJU9/view?usp=sharing

15-02-2021	Structural decisions in site's information architecture, auditing website for SEO	https://drive.google.com/file/d/1kYU7EEqUs9shtJYlgTi7F7Au6Bcgqbo4/view?usp=sharing	17-02-2021	Auditing existing site for SEO, web analytics tools	https://drive.google.com/file/d/1YdooZvq1XXK8sllfmwrexe3sw51D4NTu/view?usp=sharing
18-02-2021	Server statistics tools, determining top competitors	https://drive.google.com/file/d/1i0Cqjw7bX17lclGBoHYUnjDW-OeHNon8/view?usp=sharing	01-03-2021	Benchmarking indexing status and crawling	https://drive.google.com/file/d/1u8HtTH7wC6iAvh8U7c9xMGzSM3yu9wbp/view?usp=sharing
03-03-2021	Demo of Google analytics, SEO/website SWOT analysis	https://drive.google.com/file/d/1fjpsk7B06oxMmRRu3fgaTqRPUQh5jDYv/view?usp=sharing	04-03-2021	Keyword generation	https://drive.google.com/file/d/18VxtyL6-H1EZq75v3yve4-mmWBk5Zv/view?usp=sharing
05-03-2021	Creating pages and building website structure	https://drive.google.com/file/d/1n5R0bsdcw6Y-PNE2OQXOSGbiYr6YGY8i/view?usp=sharing	15-03-2021	Building link structure and social media optimization	https://drive.google.com/file/d/1JaWSTD1gDEoipRndugpCTrvL7OmVeAWf/view?usp=sharing
17-03-2021	social media optimization, PPC	https://drive.google.com/file/d/1GiqmX7eKU9ZuFL-WvP6O462Am0kAibbq/view?usp=sharing	18-03-2021	Optimizing quality score in PPC	https://drive.google.com/file/d/1W6URLnqYDGRWiCClY6i9i4oGwZTHIWje/view?usp=sharing
19-03-2021	Tracking results and measuring success	https://drive.google.com/file/d/1lzO9e8EBJEn9LLoC-OIF8hyZbiAQmZws/view?usp=sharing	31-03-2021	Introduction to web services and SOAP protocol	https://drive.google.com/file/d/1d7o9rKBXo3TqYLdy4e724V-rHvU1Ga75/view?usp=sharing

01-04-2021	WSDL file structure	https://drive.google.com/file/d/1FtEKcBTRr4TBGMfwlZLE63Rtex6rj-yJ/view?usp=sharing	05-04-2021	UDDI, Transactions, BPEL	https://drive.google.com/file/d/1zf6deVC2ZetfVO5SU5Cz1GDbt5UQNTLd/view?usp=sharing
07-04-2021	WS-Security, WS-RM	https://drive.google.com/file/d/1yJfrd4Ta9TbKtTXJCbnagXjZC1jG1doG/view?usp=sharing	08-04-2021	WS-RM, WS-Policy	https://drive.google.com/file/d/1nDUxEE_NRctQAC6bbSqLYZRK5zrwj2oM/view?usp=sharing
09-04-2021	WS-Attachment, RESTful web services	https://drive.google.com/file/d/1Hq-WAZjdQdQCornub4zCJSzJLvwEAipC/view?usp=sharing	09-04-2021	SOA	https://drive.google.com/file/d/1cVYx0kqilFqAM3uPVvq62PWQIP6jPV35/view?usp=sharing
12-04-2021	SOA, ROA and Restful web services, RIA	https://drive.google.com/file/d/1F3_tvqX04OZ0lnAuYpTlSgE12G6uf1y/view?usp=sharing	15-04-2021	Blogs and wikis	https://drive.google.com/file/d/1w8CbLbujkEzhxhLOWuzxZ717C1ZQDe5/view?usp=sharing
16-04-2021	RSS feeds and Security in AJAX	https://drive.google.com/file/d/1PpM4GnvtSGBFeETvdd6B12FmVkJPl0Mm/view?usp=sharing	29-04-2021	ARIA, Joomla, Drupal, Django	https://drive.google.com/file/d/1AEVI3qKq5HG6-Le8U-rkjXBJlSeX-Fk/view?usp=sharing
30-04-2021	Web analytics: industry perspective and rethinking web analytics	https://drive.google.com/file/d/1w_mF6xfjTHPsa6OBPyVufkp417ION03/view?usp=sharing	03-05-2021	Identifying web analytics tool and web metrics	https://drive.google.com/file/d/1GSzT6xdASBXt898qeNTWzngtHPSv8Qu9/view?usp=sharing
05-05-2021	Measuring success, website testing: A/B and multivariate testing	https://drive.google.com/file/d/1w-5m-yBSY3EJr3tjY721Z7hH6eBiobDY/view?usp=sharing	06-05-2021	Introduction to semantic web, challenges and semantic web stack	https://drive.google.com/file/d/12WgLHjGNLFP0GywR5F0Tifdr7qC_nzi/view?usp=sharing

07-05-2021	RDF	https://drive.google.com/file/d/1SETwSlAycXbqdb40pjDNmtPdX1jrzcK/view?usp=sharing	17-05-2021	N-triple, OWL	https://drive.google.com/file/d/1j0JI2PTsna6VcTeMtgnGGPbbivE10ZO8/view?usp=sharing
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