



FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2021-22

Programme: Bachelor of Technology (Artificial Intelligence (AI) and Data Science)

Semester: VIII

Course Code: 202047814

Course Title: Internet Security and Web Analytics

Course Group: Professional Elective Course-VI

Course Objectives: Internetwork security identifies security vulnerabilities and protocols for deployment, while web analytics tracks and analyzes website data to identify patterns and trends in web traffic, including visitor activity and flow. Web analytics employs techniques to collect, assess, present and study website data, it also tracks significant measurements and examines the behavior and movement of website visitors.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
Lecture	Tutorial	Practical		Theory		J/V/P*		Total
				Internal	External	Internal	External	
3	0	2	4	50 / 18	50 / 17	25 / 09	25 / 09	150 / 53

* J: Jury; V: Viva; P: Practical

Detailed Syllabus:

Sr.	Contents	Hours
1	Introduction: Security truisms. Picking a security policy, Host based security, Perimeter security, Strategy for secure network: Host security, Gateways and Firewall, DMZs. Security Review of protocols – lower layer and upper layer. The Web Threat or Menace? Classes of attacks, Safer Tools and Services, Firewalls and VPNs.	8
2	Web Analytics – Present and future. Web Analytics Fundamentals: Capturing Data, Selecting Optimal Web Analytics Tool, Understanding Quick stream Data Quality, Implementing Best practices, Apply the “Three Layers of So What” Test. Diving Deep into core Web analytics concepts: Preparing to Understand basics, Revisiting foundation Metrics, understanding standard reports, Using Web site content Quality and Navigation reports	8
3	Jump start Web data analytics: Creating foundation reports, E-commerce website guide, Website Jump start guide, Measurement jump start guide, Blog measurement jump start guide, competitive benchmarking, Reflections	8
4	Search Analytics – Internal search, SEO and PPC. Performing internal site search analytics, beginning search engine optimization, Measuring SEO efforts, Analyzing	8



	pay per click effectiveness. Measuring Email and multichannel marketing Email marketing fundamentals, Email marketing advance Tracking, Multichannel marketing, Tracking and analysis	
5	Website experimentation and Testing. Preparation and A/B testing, Test Important pages and calls to action, Focus on search traffic, Test content and creatives, Test price and Promotions, Test direct marketing campaigns	8

Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks						R: Remembering; U: Understanding; A: Application, N: Analyze; E: Evaluate; C: Create
R	U	A	N	E	C	
15%	40%	30%	10%	5%	--	

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1	Web analytics 2.0 by Avinash Kaushik Wiley publication
2	Firewalls and Internet Security Repelling the Wily Hacker By William R. Cheswick, Steven M. Bellovin, Aviel D. Rubin, WILEY publication
3	Web Analytics For Dummies by Jennifer LeClaire and Pedro Sostre

Course Outcomes (CO):

Sr.	Course Outcome Statements	% weightage
CO-1	Differentiate the security aspects in lower- and upper-layer protocols.	30
CO-2	Explain the parameters, metrics and reports involved in analysis of website, blogs, search engine.	45
CO-3	Implement the test strategy for web site testing.	25



CVM
UNIVERSITY

(Established under Gujarat Private Universities
(Second Amendment) Act : 2019 Gujarat Act No. 20 of 2019)

List of Practicals:

Consider the college web site or department web site. Use web analytics to...

- 1 Track engagement with home page and other site content.
- 2 Measure the time taken to load home page and other pages
- 3 Perform A/B testing
- 4 Use cookies to store username.
- 5 Write content so that users come back to the site
- 6 Build your keyword list (a list or spreadsheet of attainable, relevant keywords), write content around those keywords and track performance and rankings.
- 7 Find the blogs which take people to this site.
- 8 Try password attack to check the site is not vulnerable to this attack.
- 9 Case Study
- 10 Mini Project

Supplementary learning Material:	
1	Lecture Note
2	NPTEL
3	<ol style="list-style-type: none">1. "Web Analytics" by University of Illinois at Urbana-Champaign: This course covers the basics of web analytics, including data collection, analysis, and reporting.2. "Introduction to Web Analytics" by University of Amsterdam: This course covers the basics of web analytics and how it can be used to improve website performance.

Curriculum Revision:	
Version:	2.0
Drafted on (Month-Year):	June-2022
Last Reviewed on (Month-Year):	-
Next Review on (Month-Year):	June-2026