

## MODULE DESCRIPTOR FORM

Module Information			
Module Title	<b>WEB APPLICATION DEVELOPMENT</b>	Module Delivery	
Module Type	<b>CORE</b>	<input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Practical	
Module Code	<b>IT3203</b>		
ECTS Credits	<b>6</b>		
SWL (hr/sem)	<b>150</b>		
Module Level	UGIII	Semester of Delivery	2
Administering Department	Information Technology	College	College of Sciences
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Module Leader's Acad. Title	Asst. Lect	Module Leader's Qualification	MS.c
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Review Committee Approval	2025-2026	Version Number	V1

Relation With Other Modules			
Prerequisite module	IT341	Semester	
Co-requisites module		Semester	



**Department Head Approval**



**Dean of the College Approval**

## Module Aims, Learning Outcomes and Indicative Contents

### Module Aims

The aim of the Web Technologies module is to provide students with a comprehensive understanding of key web development concepts, tools, and techniques, with a focus on utilizing PHP and integrating it with the previously learned skills in HTML, CSS, and JavaScript. The module aims to equip students with the necessary knowledge and skills to design and build dynamic and interactive web applications. Students will learn how to leverage PHP, a server-side scripting language, to create dynamic web pages and utilize MySQL for database integration and management. They will explore PHP frameworks and libraries to streamline web development processes and enhance functionality. The module emphasizes industry best practices in code organization, security considerations, performance optimization, and user experience. Students will learn how to apply PHP to handle form submissions, process user input, implement authentication and authorization, and interact with databases using MySQL commands within PHP. Additionally, a final project, developed in collaboration with group members, will serve as a practical demonstration of the skills and knowledge acquired throughout the module. Students will apply their understanding of HTML, CSS, JavaScript, and PHP to design and develop a fully functional web application that showcases their ability to create dynamic and database-driven web solutions.

### Module Learning Outcomes

1. Proficiency in Web Application Development: Gain proficiency in designing and building web applications with PHP, MySQL, and acquired front-end skills, enabling the creation of dynamic and interactive solutions.
2. Skill in Utilizing PHP and MySQL: Develop a deep understanding of PHP as a server-side scripting language and MySQL as a relational database management system, effectively handling form submissions, user input, and database interactions.
3. Application of Best Practices: Apply industry best practices for web application development, including code organization, security considerations, performance optimization, and user experience, ensuring scalable, robust, and secure applications.
4. Real-World Application: Prepare for real-world web development scenarios, acquiring the ability to tackle challenges and solve problems

	<p>commonly encountered in professional web application development.</p> <ol style="list-style-type: none"> <li>5. Designing Scalable and Secure Web Applications: Design web applications with scalability and security in mind, implementing principles such as authentication, authorization, and data validation for ensuring application integrity and protection.</li> <li>6. Integration of Front-End and Back-End Technologies: Seamlessly integrate front-end skills (HTML, CSS, JavaScript) with back-end technologies (PHP, MySQL), understanding how they work together to create cohesive and efficient web applications.</li> <li>7. Collaborative Development: Participate in a collaborative final project with group members, gaining experience in teamwork, project management, and integrating diverse components to deliver a fully functional web application</li> </ol>
<p><b>Indicative Contents</b></p>	<p>Indicative content for the Web Technologies subject, focusing on web application development with a backend and server-side focus, includes the following:</p> <ul style="list-style-type: none"> <li>• Introduction to Web Application Development: This section provides an overview of web application development, emphasizing the role of the backend and server-side components. It covers concepts such as server-client architecture, HTTP protocols, and the role of databases in web applications.</li> <li>• Backend Development: Students will learn backend development using PHP one of popular server-side programming language. They will explore topics such as handling HTTP requests, routing, data manipulation, and server-side scripting. Additionally, they will gain an understanding of database integration and management.</li> <li>• Database Management: This topic delves into the concepts of database management in web applications. Students will learn about database models, querying languages (such as SQL), and the design and implementation of efficient database schemas. They will also explore concepts like data validation, security, and data retrieval.</li> </ul>

## Learning and Teaching Strategies

### Strategies

In teaching web application development, effective learning and teaching strategies play a crucial role in providing students with a comprehensive understanding of the subject. To enhance the learning experience, it is important to establish a strong theoretical foundation, covering core concepts and technologies. Hands-on learning through practical exercises, coding challenges, and real-world examples engages students and allows them to apply their knowledge. Collaborative projects foster teamwork and problem-solving skills, while individual assignments provide targeted feedback. Continuous guidance, real-world examples, and a focus on continuous learning ensure students acquire the technical skills and critical thinking abilities needed for successful web application design and development. By combining theory with practical application, students gain the necessary expertise to excel in real-world scenarios.

## Student Workload (SWL)

<b>Structured SWL (h/sem)</b>	60	<b>Structured SWL (h/w)</b>	4
<b>Unstructured SWL (h/sem)</b>	87	<b>Unstructured SWL (h/w)</b>	6
<b>Total SWL (h/sem)</b>	147 + 3 final = 150		

## Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	3,6	1,2,3,4
	<b>Project</b>	1	10% (10)	13	all
	<b>Lab</b>	5	10% (10)	3,5,7,9,11	all
	<b>Assignments</b>	5	10% (10)	3,5,6,8,10	1,2,3,4,5,6
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	10% (10)	7	1,2,3,4,5
	<b>Final Exam</b>	3hr	50% (50)	16	all
<b>Total assessment</b>			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

	<b>Material Covered</b>
<b>Week 1</b>	Introduction and Web Perspectives
<b>Week 2</b>	Multitiered Architectures
<b>Week 3</b>	Object-Relational Mapping frameworks
<b>Week 4</b>	The Web Service Description Language (WSDL)
<b>Week 5</b>	The Simple Object Access Protocol (SOAP) and RESTful Services
<b>Week 6</b>	Web Application Design Concepts
<b>Week 7</b>	PHP I
<b>Week 8</b>	PHP II
<b>Week 9</b>	PHP and MySQL
<b>Week 10</b>	Final Project Orientation Session
<b>Week 11</b>	SDL, UML and Requirement Gathering
<b>Week 12</b>	AJAX
<b>Week 13</b>	Development Frameworks I
<b>Week 14</b>	Development Frameworks II
<b>Week 15</b>	Development Frameworks III

<b>Delivery Plan (Weekly Lab. Syllabus)</b>	
	<b>Material Covered</b>
<b>Week 1</b>	Introduction to PHP: Basics of PHP syntax, variables, and control structure
<b>Week 2</b>	PHP Functions and Forms: Creating functions in PHP and handling form submissions.
<b>Week 3</b>	PHP and MySQL Database Connection: Establishing a connection between PHP and MySQL database.
<b>Week 4</b>	PHP Database Queries: Executing SQL queries in PHP and retrieving data from the database.
<b>Week 5</b>	Form Validation and Error Handling: Validating form data and handling errors in PHP.
<b>Week 6</b>	PHP Sessions and Cookies: Managing user data and implementing login systems using sessions and cookies.
<b>Week 7</b>	File Upload and Manipulation: Uploading and manipulating files using PHP.
<b>Week 8</b>	PHP Security Best Practices: Preventing common security vulnerabilities in PHP.
<b>Week 9</b>	Object-Oriented PHP: Introducing OOP concepts in PHP.
<b>Week 10</b>	PHP Frameworks: Exploring popular PHP frameworks and MVC architecture.
<b>Week 11</b>	Dynamic Web Pages: Building dynamic web pages with PHP.
<b>Week 12</b>	Database Design and Normalization: Principles of database design and normalization techniques.
<b>Week 13</b>	Database Integration and Relationships: Handling relationships and performing complex queries in PHP.
<b>Week 14</b>	API Integration: Consuming and interacting with external APIs using PHP.
<b>Week 15</b>	Front-End and Back-End Integration: Integrating front-end skills with PHP to create dynamic web pages, retrieve data from the database, and perform server-side operations.

<b>Learning and Teaching Resources</b>		
	<b>Text</b>	<b>Available in the Library?</b>
<b>Required Texts</b>	Web Application, Naeem Iqbal	No
<b>Recommended Texts</b>		
<b>Websites</b>	<a href="https://www.w3schools.com/">https://www.w3schools.com/</a>	

## APPENDIX:

### GRADING SCHEME

Group	Grade	Mark	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	A - Excellent	Excellent	90 - 100	Outstanding Performance
	B - Very Good	Very Good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Fair / Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Pass / Acceptable	50 - 59	Work meets minimum criteria
<b>Fail Group (0 - 49)</b>	<b>FX – Fail</b>	Fail (Pending)	(45-49)	More work required but credit awarded
	<b>F – Fail</b>	Fail	(0-44)	Considerable amount of work required

#### Note:

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي