

**Ministry of Higher Education and Scientific Research
University of Abdelhafid Boussouf - Mila
Institute of Mathematics and Computer Science
Department of Computer Science
Master 1 STIC - 2025/2026**

Advanced Web Development

Presented by: **Dr. Brahim Benabderrahmane**



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Module Identification & Rules

Module Identification

- **Master's Title:** PROFESSIONAL MASTER in STIC
- **Field:** (Information and Communication Sciences and Technologies)
- **Semester:** 02
- **Unit Title (UE):** UEF3
- **Subject Title:** Advanced Web Development
- **Credits:** 4
- **Coefficients:** 2



Course Objectives

- The creation and design of Web applications, including:
 - Interface design
 - Interaction architecture
 - Page organization
 - Site mapping (arborescence)
 - Navigation.
- This course introduces more advanced concepts and techniques in this field, to facilitate and reduce development time.



Recommended Prior Knowledge



License-level Web Development:

You are expected to have completed the Web Development subject during your Bachelor's (License) degree.

Fundamental Skills:

This implies a baseline understanding of HTML, CSS, and basic scripting to prepare for the more advanced topics covered in this Master's course.

Git/GitHub and command-line basics

These will be essential for the modern tools (like Tailwind and Vite) we will be using in our lab works



02

Semester Roadmap

General Structure of the Module

4 Chapters:

- 01** Web Foundations & Modern Architectures.
- 02** Advanced Frontend & Component Design.
- 03** Server-Side Logic, Data & APIs.
- 04** Professional Integration & Deployment.

Use tables to represent data

The Educational Requirement:
We respect the official syllabus objectives.

	Initial	Modern
Server-Side	Traditional PHP & JSP	Node.js (Express) or Laravel.
Data Exchange	XML	JSON & REST APIs.
Architecture	MVC Theory	Component-driven Architecture (React/Vue).
CMS	Joomla	Headless CMS (Strapi) or Modern WP.

Two-Phase Learning Structure

Phase 1: The "Frontend" Sprint (Sessions 1–7)

- **Timing:** Pre-Spring Break.
- **Content:** Chapters 1 & 2.
- **Objective:** Mastering UI/UX, Interaction Architecture, and Client-Side Scripting.



Phase 2: The "Backend" & Cloud Integration (Sessions 8–12)

- **Timing:** Post-Spring Break.
- **Content:** Chapters 3 & 4.
- **Objective:** Routing, Database Management, API Design, and Security.



Detailed Frontend Stack



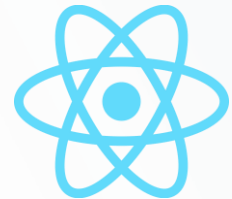
Concepts:

- Semantic Layouts & Modern Styling.
- Interaction Architecture & Navigation Trees (Arborescence).
- Asynchronous Web (AJAX) & ES6+ Javascript.



Languages & Tools:

- HTML5 & CSS3 (Flexbox/Grid).
- Modern Frameworks: React.js or Vue.js (MVC "View" Layer).
- Utility-First CSS: Tailwind CSS.
- Build Tools: Vite & NPM.



Detailed Backend & Dev Ops Stack

Concepts:

- Model-View-Controller (MVC) Deep Dive.
- Server-Side Rendering (SSR) vs. Client-Side Rendering (CSR).
- Form Handling & Data Validation.
- Web Security & SEO Referencing.

Languages & Tools:

- Logic: Node.js or PHP 8.x.
- Database: MySQL/PostgreSQL or MongoDB.
- Deployment: GitHub Actions, Vercel, or Docker.





Thank you.