



## Faculty of Science and Engineering

### ***Department of MATHEMATICS AND COMPUTER SCIENCE***

#### ***Assessment Brief***

<b>Module</b>	5cs045 – Full Stack Development
<b>Module Leader</b>	Deepson Shrestha
<b>Semester</b>	1
<b>Year</b>	2025-2026
<b>Assessment Number</b>	2
<b>% of module mark</b>	100%
<b>Due Date</b>	See below
<b>Hand-in - what?</b>	See below
<b>Hand-in- where?</b>	See below
<b>Pass mark</b>	40%
<b>Method of retrieval</b>	
<b>Feedback</b>	Face to face demonstration
<b>Collection of marked work</b>	See below

#### **Learning outcomes:**

LO1 Demonstrate knowledge of the concepts, approaches and technologies involved in dynamic website construction, full-stack development, and web security.

LO2 Be able to design and construct dynamic and secure full-stack websites using appropriate tools and technologies.

Your portfolio is made up of 2 tasks:

- In task 1, you are expected to code a simple PHP script in time-constrained conditions (i.e. a test)
- In task 2, you are required to build a secure, dynamic website featuring the technologies taught in the lectures.

Please see below for a detailed description of each task.

### **Choose a topic**

The topic of your site can be any of your choices (Or from a selective choice). Pick something you have an active interest in, a hobby, a sport you play, a group or club you belong to, or any similar topic. Once you have selected your topic, **YOU MUST CONFIRM THIS WITH YOUR TUTOR**. You will not be allowed to proceed with your topic of choice without a tutor's agreement. You may not change your topic without further consultation with your tutor.

#### **Task 1 – Database creation and PHP access**

**When: Exam week (Will be informed by RTE)**

**Weight: 30%**

You will have 2 hours to perform various coding tasks in a time-constrained environment.

Topics included:

- Basic PHP programming concepts
- Creating a table in MySQL via phpMyAdmin
- Accessing a database from PHP and retrieving/displaying/formatting data
- Committing work to Git.

### **Learning resources**

During the test you will have access to the following resources:

- [PHP: PHP Manual - Manual](#)
- <http://www.w3schools.com/>

## **Tools**

Your site must be coded in a simple text editor, such as Notepad++. You **cannot** use any CMS, Web Frameworks, or similar tools to construct your site. The use of any tools which construct any part of the website for you is strictly forbidden – usage of these tools will result in a FAIL grade. If you are in any doubt about whether the tool you wish to use is not acceptable, speak to your tutor BEFORE you begin to construct your site.

## **Submitting and presenting your work**

You should submit to Canvas a single Word document containing the following information:

- Your student ID
- Your name
- The URL to your work, hosted on server
- The URL to your Git project to which you have committed your work.

## Rubric

5cs045-task1-2025-26								
Criteria	Ratings			Points				
<b>Create a MySQL database table</b>	<b>Full marks</b> The table was created. A suitable primary key was specified. Suitable data types for all fields.	<b>Some issues</b> The table was created, but there are issues (no primary key, unsuitable data types).	<b>No work</b> The table was not created.	5 pts	2 pts	0 pts	<input type="text"/> /5 pts	
<b>Comment</b>								
<input type="text" value="Leave a comment"/> <span style="float: right;">Clear</span>								
<b>Add test data</b>	<b>Full marks</b> Sufficient test data was inserted (at least 5 games, different genres, prices etc.)	<b>Insufficient data</b> Insufficient data was inserted.	<b>No marks</b> No test data	5 pts	2 pts	0 pts	<input type="text"/> /5 pts	
<b>Comment</b>								
<input type="text" value="Leave a comment"/> <span style="float: right;">Clear</span>								
<b>Access your database table using PHP</b>	<b>Full marks</b> Data is retrieved and displayed appropriately (e.g. in an HTML list or table).	<b>Poor display</b> Data is retrieved and displayed, but not formatted appropriately.	<b>Partially working</b> Data is retrieved, but only partially displayed (only one field or one record)	10 pts	5 pts	2 pts	0 pts	<input type="text"/> /10 pts
<b>Comment</b>								
<input type="text" value="Leave a comment"/> <span style="float: right;">Clear</span>								
<b>Commit your code to Git</b>	<b>Full marks</b> The PHP script was committed to a Git server.		<b>No marks</b> The PHP script was NOT committed to a Git server.	10 pts	0 pts	<input type="text"/> /10 pts		
<b>Comment</b>								
<input type="text" value="Leave a comment"/> <span style="float: right;">Clear</span>								

<b>Task 2 – Full site implementation</b>
<b>Due date: Week 12</b>
<b>Weight: 70%</b>

| **Task 2 – Full site implementation** |
| **Due date: Week 12** |
| **Weight: 70%** |

## Full site implementation

Please submit a fully working website, keeping in mind the following points:

- Your website must be developed using PHP and Mysql, and hosted on the school's student server.
- Users should be able to read, add, amend, and delete records stored in your MySQL database.
- Users should be able to search for records stored in your MySQL database (extra points will be earned if searches on several criteria are possible, e.g. list all Sci-Fi books published in 2023)
- Your website should be protected against the most common security threats (XSS, SQL Injection, etc.).
- Ajax has been used to provide useful functionality (e.g. autocomplete search, form filing assistance, etc.)
- Extra points will be earned if a template engine is used to separate client-side markup from server-side logic.

See the rubric below for more information.

## Submitting and presenting your work

The work above should be published on the school's student web server and presented to a tutor during workshop hours. **You should also submit the URL of your website to Canvas.**

## The Demonstration

You must attend and demonstrate your website to a tutor. This demonstration is your opportunity to highlight the best areas of your work, and to answer any questions that the workshop tutor might have. You will be given feedback on your assessment during this demonstration.

The lecturer will also use this session to assess whether the work presented was created by the student:

- Technical questions about the work will be asked.

- Attendance records will be consulted.
- Git commit logs will be checked.

If the points above are not satisfied, a grade of 0 will be awarded.

Important: You only get one chance to present.

A booking system will be provided. It is your responsibility to book an appointment to demonstrate your work.

**Failure to present your work will result in a grade of 0 NS (FAIL) for the assessment.**

# Rubric

**Rubric**

5cs045-task2-2025-26						Instructor score	0 pts
Criteria	Ratings						Points
<b>Basic database functionality</b>	<b>Full marks</b> All 4 CRUD operations implemented (Create, Read, Update, Delete). <a href="#">view longer description</a> 10 pts	<b>3 CRUD</b> 3 CRUD operations implemented (Create, Read, Update, Delete). 7 pts	<b>2 CRUD</b> 2 CRUD operations implemented (Create, Read, Update, Delete). 5 pts	<b>1 CRUD</b> 1 CRUD operations implemented (Create, Read, Update, Delete). 3 pts	<b>No marks</b> No work done. 0 pts		-- /10 pts
<b>Comment</b>	<input type="text" value="Leave a comment"/>						<input type="button" value="Clear"/>
<b>Security implementation</b> <a href="#">view longer description</a>	<b>Advanced security</b> 5 security features implemented: (1) input filtering, (2) output escaping, (3) sessions used to protect sensitive pages, (4) captcha used, (5) passwords encrypted.  10 pts	<b>Excellent security</b> 4 security features implemented: (1) input filtering, (2) output escaping, (3) sessions used to protect sensitive pages, (4) captcha used, (5) passwords encrypted.  8 pts	<b>Good security</b> 3 security features implemented: (1) input filtering, (2) output escaping, (3) sessions used to protect sensitive pages, (4) captcha used, (5) passwords encrypted.  6 pts	<b>Medium security</b> 2 security features implemented: (1) input filtering, (2) output escaping, (3) sessions used to protect sensitive pages, (4) captcha used, (5) passwords encrypted.  4 pts	<b>Weak security</b> 1 security feature implemented: (1) input filtering, (2) output escaping, (3) sessions used to protect sensitive pages, (4) captcha used, (5) passwords encrypted.  2 pts	<b>No work</b> No security work done.  0 pts	-- /10 pts
<b>Comment</b>	<input type="text" value="Leave a comment"/>						<input type="button" value="Clear"/>
<b>Security testing</b> <a href="#">view longer description</a>	<b>Excellent security testing</b> An automatic security testing tool was used to generate an audit report. No vulnerabilities present.  10 pts	<b>Good security testing</b> An automatic security testing tool was used to generate an audit report. Some vulnerabilities present.  7 pts	<b>Poor security testing</b> An automatic security testing tool was used to generate an audit report. Many vulnerabilities present.  4 pts	<b>No Evidence</b> No evidence of security testing.  0 pts			-- /10 pts

The second half of the rubric is located on the next page.

Comment					
Leave a comment					<input type="button" value="Clear"/>
Searching	<b>Several criteria simultaneously</b>  The user can search on several criteria simultaneously (e.g. find all books where genre = sci-fi and year of publication is 2023)  10 pts	<b>Several criteria</b>  The user can search on several criteria, but NOT simultaneously.  7 pts	<b>1 criteria</b>  The user can search on 1 criteria.  3 pts	<b>No work</b>  No working search functionality  0 pts	<input type="text"/> /10 pts
Comment					
Template engine	<b>Full use</b>  A template engine (e.g. Twig, Smarty...) is used successfully throughout the website.  10 pts	<b>Good use</b>  A template engine (e.g. Twig, Smarty...) is used successfully on MOST pages.  7 pts	<b>Partial use</b>  A template engine (e.g. Twig, Smarty...) is used partially (e.g. on one page).  4 pts	<b>No marks</b>  A template engine is NOT used.  0 pts	<input type="text"/> /10 pts
Comment					
Ajax	<b>Full marks</b>  Ajax has been used and provides useful functionality (e.g. autocomplete search, form filling assistance etc.)  10 pts	<b>Simple use</b>  Ajax has been used, but for something simple or not very useful.  5 pts	<b>Major issues</b>  Ajax has been used, but there are major issues in its implementation.  3 pts	<b>No marks</b>  Ajax has not been used, or is not functional.  0 pts	<input type="text"/> /10 pts
Comment					
Version Control System	<b>Full marks</b>  Git was used regularly and for all code.  10 pts	<b>Partial use</b>  Git was used partially (not all code) or intermittently (not very often).  5 pts	<b>Single use</b>  Git was used once, near the end of the project.  2 pts	<b>Not used</b>  Git was not used at all.  0 pts	<input type="text"/> /10 pts
Comment					
Leave a comment					<input type="button" value="Clear"/>