## Teaching and Examination Scheme (M.Sc.(IT) Programme)
## Effective from Year 2021-22

**SEMESTER-II**

| Course Code | Course Title | Teaching Scheme | | | | Examination Scheme | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Contact Hours | | | Credit | Theory | | | Practical | | | Total |
| | | Theory | Pract | Total | | Internal | | External | Internal | | External | |
| | | | | | | Case Study | Tests | | Term work | Tests | | |
| MS217 | Web Development using Open Source Technology | 3 | 3 | 6 | 6 | 10 | 20 | 70 | 15 | 15 | 70 | 200 |
| MS218 | Software Testing | 3 | 3 | 6 | 6 | 10 | 20 | 70 | 15 | 15 | 70 | 200 |
| MS219 | Object Oriented Programming using Java | 3 | 3 | 6 | 6 | 10 | 20 | 70 | 15 | 15 | 70 | 200 |
| MS220-MS222 | Elective II | 3 | 3 | 6 | 6 | 10 | 20 | 70 | 15 | 15 | 70 | 200 |
| HS106.02 C | Academic Writing | - | 2 | 2 | 2 | - | - | - | 30 | | 70 | 100 |
| | University Elective-I** | - | 2 | 2 | 2 | - | - | - | 30 | | 70 | 100 |
| | | 12 | 16 | 28 | 28 | 400 | | | 600 | | | 1000 |

** Student will take any university elective offered by different institutions of university. CMPICA has decided to offer **CA842 Mobile Application Development** course for others.

**Elective-II**

1. MS220 HTTP Web Service for Enterprise Application
2. MS221 Multi Paradigm Scripting using Python - II
3. MS222 Game Development - I

**University Elective-I**

| No | Course Code | Course Name | Department/Faculty |
|---|---|---|---|
| 1 | EE782.01 | Energy Audit and Management | Engineering |
| 2 | CE771.01 | Project Management | Engineering |
| 3 | PT796.01 | Fitness & Nutrition | Physiotherapy |
| 4 | MB651 | Software based Statistical Analysis | Management |
| 5 | NR755 | First Aid & Life Support | Nursing |
| 6 | OC733.01 | Introduction to Polymer Science | Applied Science |
| 7 | MA771.01 | Reliability and Risk Analysis | Mathematics |
| 8 | ME781.01 | Occupational Health & Safety | Engineering |
| 9 | MA772.01 | Design of Experiments | Mathematics |
| 10 | RD701.01 | Introduction to Analytical Techniques | Applied Science |
| 11 | RD702.01 | Introduction to Nanoscience And Technology | Applied Science |
| 12 | PH891 | Community Pharmacy Ownership | Pharmacy |
| 13 | PH892 | Intellectual Property Rights | Pharmacy |
| 14 | PSE55 | Astrophysics, Space and Cosmos | Applied Science |

## MS217 : Web Application Development using Open Source Technology (200 Marks)

## Contact Hours: 06

**Pre-requisite:** Basic Knowledge of HTML and Database Technologies.

**Methodology & Pedagogy:** During theory and practical sessions, students able to install & configure PHP and prerequisite software(s). Also, student will be emphasized to develop dynamic web applications.

**Outline of the Course:**

| Unit No. | Title of the Unit | Minimum Numbers of Hours | |
|---|---|---|---|
| | | Theory | Practical |
| 1 | Introduction to Open Source Software and their Configuration | 04 | 36 |
| 2 | Basics of PHP | 07 | |
| 3 | Working with Arrays and Objects in PHP | 07 | |
| 4 | HTML Forms with PHP | 06 | |
| 5 | Accessing Relational Databases using PHP | 07 | |
| 6 | Responsive Web Application Development using AJAX and PHP | 05 | |

**Total Hours (Theory): 36**

**Total Hours (Lab): 36**

**Total: 72**

**Detailed Syllabus:**

**Unit – I: Introduction to open source software and their Configuration. Hours: 04**
Overview of Open Source Software, Widely used Open Source Products, Development Philosophy, Open source vs. Closed Source, Open Source Technology Importance, Installation & Configuration of PHP, Introduction to PHP.

**Unit – II: Basics of PHP. Hours: 07**
PHP language Basics: Lexical Structure, Data types, Variables, Expressions and Operators, Control and Looping statements. Functions: Function Definition, Function Parameters, Returning Values. Strings: Usages and String Functions.

**Unit – II: Working with Arrays and Objects in PHP. Hours: 07**
Arrays: Types of Arrays and its Usages, Array functions.

Objects: Declaring Class, Properties, Methods, Exception Handling, Examples.

**Unit – III: HTML Forms with PHP. Hours: 06**

Working of HTML with PHP, Capturing data with PHP Using HTML Form Elements, Super Global Variables, Processing User Input, Handling and Avoiding Errors, Working with Regular Expressions, State Management Techniques in PHP.

**Unit – IV: Accessing Relational Databases using PHP. Hours: 07**

Using PHP to access Databases, Relational Databases and SQL, PHP Data Objects (PDO), MySQL Object Interface.

**Unit VI: Responsive Web Application using AJAX and PHP Hours: 05**

Introduction to AJAX, PHP and AJAX Example, AJAX Suggest and Autocomplete, AJAX Data Grid.

**Core Books:**

1. Kevin Tatroe, Peter MacIntyre, Rasmus Lerdorf: Programming PHP - Creating Dynamic Web Pages, 3rd Edition, Kindle Edition, O'REILLY Publication.
2. Christian Darie, Brinzarea Bogdan, Filip Chereches-Tosa, Mihai Bucicia: AJAX and PHP: Building Responsive Web Applications, Kindle Edition, Packt Publishibng.
3. Matt Doyle: Beginning PHP 5.3, Wrox Publication, 2010.

**Reference Books:**

1. David Sklar and Adam Trachtenberg: PHP CookBook - Solutions and Examples for PHP Programmers, 3rd Edition, O'REILLY Publication.

**Web References:**

1. https://www.w3schools.com/pHP/default.asp [For Basics of PHP]
2. https://opensource.com/resources/what-open-source [For Open Source Software] 3. https://www.tutorialspoint.com/php/index.htm [For Practical Examples]

**Course Outcomes:** Upon successful completion of the course, the students will:

CO1 : Understand the importance of open source technology.
CO2 : Understand the working with PHP and its elements.
CO3 : Be able to handle HTML Form and process user input using PHP.
CO4 : Be able to develop interactive and dynamic web based application using PHP and MySQL
CO5: Be able to develop the responsive web applications

**Course Outcomes Mapping:**

| Unit No. | Unit Name | Course Outcomes | | | | |
|---|---|---|---|---|---|---|
| | | **C01** | **C02** | **C03** | **C04** | **C05** |
| 1 | Introduction to open source software and their Configuration PHP | ✓ | | | | |
| 2 | Basics of PHP | | ✓ | | ✓ | |
| 3 | Working with Arrays and Objects in PHP | | ✓ | | ✓ | |
| 4 | HTML forms with PHP | | | ✓ | ✓ | |
| 5 | Accessing Relational Databases using PHP | | | ✓ | ✓ | |
| 6 | Responsive Web Application using AJAX and PHP | | | | ✓ | ✓ |

**Course Articulation Matrix:**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 3 |
| CO2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO3 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 2 |
| CO4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 |
| CO5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 |

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High) No correlation "-"