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**UNIVERSITY OF PETROLEUM & ENERGY STUDIES**

**School of Computer Science**

**Dehradun**

**COURSE PLAN**

Programme : B. Tech (CSE + All IBM Branches)

Course : Web Technologies through PHP

Course Code : CSEG2011

No. of credits : 3

Semester : 4th

Session : Jan 2019- June 2019

Batch : 2017-21

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P.O. Bidholi, , Dehradun

**COURSE PLAN**

1. **PREREQUISITE:**
   1. Basic Knowledge of HTML.
   2. Basic Knowledge of SQL.
2. **PROGRAM OUTCOMES (POs) and PROGRAM SPECIFIC OUTCOMES (PSOs) for B.Tech CSE with specialization in ………:**

**B1. PROGRAM OUTCOMES (POs)**

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**B2. Program Specific Outcomes (PSOs)**

1. Perform system and application programming using computer system concepts, concepts of Data Structures, algorithm development, problem solving and optimizing techniques,
2. Apply software development and project management methodologies using concepts of front-end and back-end development and emerging technologies and platforms.
3. ------------------to be made for each vertical----------------------
4. **COURSE OUTCOMES FOR OPEN SOURCE & OPEN STANDARDS: At the end of this course student should be able to**

CO1: Demonstrates a working knowledge of Dynamic Web Site Design and Publishing

CO2: Learn to apply control structures and understand the scope of variable to apply in projects and use functions, function calls, and parameter passing options and applying string functions on programs.

CO3: Apply concept of array & file handling while writing client-server programs.

CO4: Understand flexibility and modularity provided by OOPS.

CO5: Analyze the principles of database design in web pages using PHP & MySQL and to create dynamic Web sites that allow for database interactions such as the storing, gathering, and updating of information.

CO6: Learn to setup PHP development on Eclipse and creating & debugging PHP projects.

**Table: Correlation of POs and PSOs v/s COs**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PO/CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| CO1 | 1 | 1 | - | - | - | - | - | - | - |  |  |  | - | - | - |
| CO2 | - | - | 1 | - | - | 2 | - | - | - |  |  |  | - | - | - |
| CO3 | - | - | - | - | - | 1 | 1 | - | - |  |  |  | - | - | - |
| CO4 | - | - | - | - | - | - | - | - | - |  |  |  | 1 | 1 | - |
| CO5 |  |  |  |  |  |  |  | - |  |  |  |  | 2 | 2 | - |
| CO6 |  |  |  |  |  |  |  |  |  |  |  |  | 2 | 2 |  |

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

1. **COURSE OUTLINE**

|  |
| --- |
| Unit I: HTML & PHP Basics |
| Unit II: Control Structures & Functions |
| Unit III: Array & File Handling |
| Unit IV: Object oriented programming & PHP, exception handling, JAVA Script |
| Unit V: Using MySQL database database with PHP and advance PHP |
| Unit VI: Introduction to Advance PHP, Setup PHP development on Eclipse, Creating & debugging PHP Projects |

1. **PEDAGOGY**

* **Presentation,**
* **flipped classroom session,**
* **Blackboard**

1. **COURSE COMPLETION PLAN**

|  |  |
| --- | --- |
| **Total Class room sessions** | 36 |
| **Total Quizzes** | 02 |
| **Total Class Test** | 01 |
| **Total Assignment** | 02 |

One Session =60 minutes

1. **EVALUATION & GRADING**

Students will be evaluated based on the following 3 stages.

* 1. Internal Assessment - 30%

5.2 Mid-term Examination - 20%

* 1. End term Examination - 50%

**F1. INTERNAL ASSESSMENT: WEIGHTAGE – 30%**

Internal Assessment shall be done based on the following:

|  |  |  |
| --- | --- | --- |
| Sl. No. | Description | % of Weightage out of 30% |
| 1 | Class Tests and Quizzes | 60% |
| 2 | Assignments (Problems/Presentations) | 20% |
| 3 | Attendance and performance in the class and blackboard | 20% |

**F2*. Internal Assessment Record Sheet (including Mid Term Examination marks)*** *will be displayed online at the end of semester i.e. last week of regular classroom teaching.*

**F3. CLASS TESTS/QUIZZES:** One class Tests based on descriptive type theoretical questions and Two Quizzes based on objective type questions will be held; One quiz at least ten days before the Mid Term Examination and class test and second quiz at least ten days before the End Term Examination. Those who do not appear in Viva-Voce and quiz examinations shall lose their marks.

*The marks obtained by the students will be displayed on Blackboard a week before the start of Mid Term and End Term Examinations respectively.*

**F4. ASSIGNMENTS:** After completion of each unit or in the mid of the unit, there will be home assignments based on theory and numerical problems. Those who fail to submit the assignments by the due date shall lose their marks.

**F5. GENERAL DISCIPLINE:** Based on student’s regularity, punctuality, sincerity and participation in the interactions.

*The marks obtained by the students will be displayed offline at the end of semester.*

**F6. MID TERM EXAMINATION: WEIGHTAGE – 20%**

Mid Term examination in online mode will be of 1 hours duration and shall be a combination of objective and true-false type questions.

**F7. END TERM EXAMINATION: WEIGHTAGE – 50%**

End Term Examination shall be Three Hours duration and shall be a combination of Short and Long theory/numerical Questions.

**F8. GRADING:**

The overall marks obtained at the end of the semester comprising all the above three mentioned shall be converted to a grade.

1. **COURSE DELIVERY PLAN**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **TOPICS/SUB TOPICS** | **NO. OF SESSION** | **Course Outcomes Addressed** | **Assignment(s)/Quizzes/ Tests** | | |
| **UNIT - I**  **HTML & PHP Basics** | 07 | CO1 |  | | |
| Introduction to HTML,  HTML Basics: document, elements, attributes, heading, paragraph, link, formatting, images, tables, list | 01 |  | | |
| HTML forms: form elements, input elements, input type: text, radio, checkbox, submit button, select, option, textarea, button, datalist, action attributes, method attribute etc.. | 01 |  | | |
| Frames | 01 |  | | |
| Client-Server Architecture  Web Server, Web Browser  Why PHP?  Working with PHP  Introduction to PHP,  Support for Database  HTTP Request/Response | 01 |  | | |
| Basic Syntax of PHP: PHP statement terminator & case insensitivity,  Comments, Variables, Assigning value to a variable  constants, Managing variables | 01 |  | | |
| Using PHP with HTML forms: embedding PHP in HTML | 01 |  | Assignment – 01 | | |
| Operators: Arithmetic, bitwise, comparison, logical, concatenation, increment/decrement, ternary operator  Operator precedence | 01 |  |  | | |
| **UNIT – 2**  **Control Structures & Functions** | 08 |  |  | | |
| Conditional control structures: if statement, if-else statement, if-else if statement, | 01 | CO2 |  | | |
| nested if,  Switch statement,  looping control structures: for, while, | 01 |  | | |
| do…while, for…each  loop Control: Break, continue | 01 |  |  | | |
| Functions: User defined, function definition, function call, function with arguments, | 01 |  |  | | |
| function with return value, call by value & call by reference | 01 |  |  | | |
| Creating and accessing String,  String Manipulation: strtoupper(), strtolower(), ucfirst(), ucwords(), strcmp(), strlen(), substr(), trim()  Built in functions in PHP | 01 |  |  | | |
| Understanding variable scope: global variables, static variables,  include & require | 01 | CO3 |  | | |
| **UNIT- 3**  **Array & File Handling** | 07 |  | | |
| Introduction to array, Array in PHP  Creating array,  accessing elements of an array  Printing an array in readable way. | 01 |  | | |
| Modifying elements of an array, finding the size of an array  Iterating array elements  modifying array while iteration  removing elements from an array | 01 |  | | |
| Iterating array with numeric index  Array sorting | 01 | Quiz-01 | | |
| Multidimensional Array  accessing elements of a multidimensional array Iterating multidimensional array | 01 |  | | |
| converting an array to string, converting string to an array | 01 |  |  | | |
| File handling introduction(Using PHP with HTML forms)  File open  File creation  closing a file  Writing to files | 01 |  |  | | |
| Reading from files  Searching a record from file  Coping, renaming and deleting a file | 01 |  |  | | |
| **UNIT- 4**  **Object Oriented Programming & PHP, Exception Handling, JAVA Script** | 07 | CO4 |  | | |
| Introduction: Object, class  defining class in PHP  Object in PHP | 01 |  | | |
| Use of $this variable  Constructor  Constructor with parameters | 01 |  | | |
| Introduction to Exception  Exception handling mechanism Creating custom exceptions using JavaScript | 01 |  |  | | |
| Multiple catch blocks  Exception propagation  Error handling in PHP | 01 |  |  | | |
| Java script Introduction  Java script basics | 01 |  |  | | |
| Introducing Event handler: Windows event handler, Mouse & keyboard event handler | 01 |  |  | | |
| PHP form handling, form Validation using JavaScript | 01 |  |  | | |
| **UNIT 5: Using MySQL database base with PHP** | 05 |  |  | | |
| MYSQL/MYSQLi  PHP Connect to MySQL  Creating MYSQL database, | 01 | CO5 |  | | |
| Insertion and deletion of records using PHP  Select data from tables using PHP | 01 |  | | |
| Select cont.., replace & update data in tables using PHP | 01 |  | | |
| Cookies, Session & Server variables | 01 |  | | |
| PHP functions related to database handling | 01 | Assignment-02 | | |
| **CLASS TEST** | 01 |  | | |
| **Unit - VI**  **Introduction to Advance PHP, Setup PHP development on Eclipse, Creating & debugging PHP Projects** | 04 | CO6 | |  |
| Advanced function in PHP | 01 |  | Quiz 2 | | |
| Serializing data for persistence  Pattern matching with PHP | 01 |  | | |
| **PHP frameworks - Cake PHP, Symfony & Zend framework**  **Manage pear modules** | 02 |  |  | | |

1. **SUGGESTED READINGS:**

**H1. TEXT BOOK:**

1. Steven Holzner, “The Complete Reference, PHP”, McGraw Hill Education (India) Edition 2008.

**H2. REFERENCE BOOKS:**

1. W. Jason Gilmor, “Beginning PHP & MySQL, from Novice to Professional”, Apress, 4th Edition.
2. Web Application server and Advanced PHP, McGraw Hill
3. Brian P. Hogan, “HTML5 & CSS3”, The pragmatic bookshelf
4. Glenn Johnson “Programming in HTML5 with JavaScript & CSS3 – Training Guide”, Microsoft Press.

**H3. ONLINE LINKS:**

1. <http://www.w3schools.com/php/default.asp>
2. <https://www.tutorialspoint.com/php/>
3. http://www.w3schools.com/html/default.asp
4. http://www.w3schools.com/css/
5. http://www.w3schools.com/js/default.asp
6. **GUIDELINES**

***Cell Phones and other Electronic Communication Devices*:** Cell phones and other electronic communication devices (such as Blackberries/Laptops) are not permitted in classes during Tests or the Mid/Final Examination. Such devices MUST be turned off in the class room.

***E-Mail and online learning tool:*** Each student in the class should have an e-mail id and a pass word to access the Blackboard system regularly. Regularly, important information – Date of conducting class tests, guest lectures, via online learning tool. The best way to arrange meetings with us or ask specific questions is by email and prior appointment. All the assignments preferably should be uploaded on online learning tool. Various research papers/reference material will be mailed/uploaded on online learning platform time to time.

***Attendance:*** Students are required to have **minimum attendance of 75%** in each subject. Students with less than said percentage shall **NOT** be allowed to appear in the end semester examination.

***Passing criterion:*** Student has to secure minimum 30%/40% marks of the “highest marks in the class scored by a student in that subject (in that class/group class)” individually in both the ‘End-Semester examination’ and ‘Total Marks’ in order to pass in that paper.

* Passing Criterion for B. Tech: Minimum 30% and 40% of the highest marks in the class applicable to the students admitted before July 2015 and onwards July 2015 respectively.
* Passing Criterion for M. Tech: minimum 40% of the highest marks in the class

1. **Course outcome assessment**

To assess the fulfilment of course outcomes two different approaches have been decided. Degree of fulfillment of course outcomes will be assessed in different ways through direct assessment and indirect assessment. In Direct Assessment, it is measured through quizzes, tests, assignment, Mid-term and/or End-term examinations. It is suggested that each examination is designed in such a way that it can address one or two outcomes (depending upon the course completion). Indirect assessment is done through the student survey which needs to be designed by the faculty (sample format is given below) and it shall be conducted towards the end of course completion. The evaluation of the achievement of the Course Outcomes shall be done by analyzing the inputs received through Direct and Indirect Assessments and then corrective actions suggested for further improvement.

**Sample format for Indirect Assessment of Course outcomes**

|  |
| --- |
| NAME: |
| ENROLLMENT NO: |
| SAP ID: |
| COURSE: |
| PROGRAM: |

Please rate the following aspects of course outcomes of Open Source and open standards.

Use the scale 1-4\*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sl. No. |  | 1 | 2 | 3 | 4 |
| 1 | CO1: Demonstrates a working knowledge of Dynamic Web Site Design and Publishing |  |  |  |  |
| 2 | CO2: Learn to apply control structures and understand the scope of variable to apply in projects and use functions, function calls, and parameter passing options and applying string functions on programs. |  |  |  |  |
| 3 | CO3: Apply concept of array & file handling while writing client-server programs. |  |  |  |  |
| 4 | CO4: Understand flexibility and modularity provided by OOPS. |  |  |  |  |
| 5 | CO5: Analyze the principles of database design in web pages using PHP & MySQL and to create dynamic Web sites that allow for database interactions such as the storing, gathering, and updating of information. |  |  |  |  |
| 6. | CO6: Learn to setup PHP development on Eclipse and creating & debugging PHP projects |  |  |  |  |

3

Below Average

Good

1

**\***

Very Good

Average

4

2