Subject Code: 01IT0701

Subject Name: Advance Web Technology

B.Tech. Year - IV

Objective: The increasing practice of MVC architecture in Web based applications, this course focuses on Advanced PHP concepts and Laravel Framework along with Node.js. This subject will attempt to give basic understanding of cURL methods, MVC Framework, Unit Testing, Web Services, API, Node Servers and routing.

Credits Earned: 4 Credits

Course Outcomes: After completion of this course, students will be able to

- Apply Object Oriented concepts in developing PHP applications (Apply)
- Use various third party APIs and advance concepts of PHP to develop Applications (Apply)
- Create and deploy scalable web based system using Laravel (Create)
- Develop server side web applications using Node.js (Create)

Pre-requisite of course: Programming Fundamentals, Web Technology

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	Mid Sem (M)	Internal (I)	Viva (V)	Term work (TW)	
3	0	2	4	50	30	20	25	25	150

Contents:

Unit	Topics	Contact Hours
1	**Object Oriented PHP:** Object Oriented Programming with PHP – Classes, Properties, Methods, Magic Methods: Constructor, Destructor, Getter and Setter, Encapsulation, Inheritance, Data Abstraction, Polymorphism.	6
2	**Advance PHP:** Web Scraping using cURL, Regular Expression, Mail function, Web Services & APIs	6
3	**PHP MVC Framework - Laravel:** Introduction to Laravel and MVC, Environment Setup, Routes, Namespaces, Controllers, Views, Request Response, Redirections, Forms, Session, Cookie, Database Connectivity and CRUD operations	20
4	**Node.js** Introduction to Node.js, Node Package Manager, REPL Terminal, Node.js Webserver – Server and Clients, Creating a simple server, Rendering HTML, Rendering JSON Data, Routing	10
	Total Hours	**42**

References:

1. PHP: The Complete Reference, By Steven Holzner. Publisher: Tata McGraw Hill
2. Laravel: Up and Running, By Matt Stauffer. Publisher: O'Reilly Media
3. Node.js in Action, By Mike Cantelon, Marc Harter, T.J. Holowaychuk, and Nathan Rajlich. Publisher: Manning publications

Suggested Theory distribution:

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyse	Evaluate	Create
10%	10%	30%	10%	10%	30%

List of Experiments:

1. Develop a web application in PHP using various concepts of object oriented programming like Class, Object, Inheritance, Function, Overloading, Constructor and Destructor.
2. Develop a web scraper to mine structured data from any website according to given application.
3. Develop a web application in PHP to demonstrate the use of third party APIs like weather, sports, stock market, etc.
4. Develop a small project using Laravel framework.
5. Develop a small project in Node.js.

Instructional Method:

a) The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, also need to use ICT tools and facilities.
b) The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.
c) Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Supplementary Resources:

Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.

a) https://learninglaravel.net/
b) https://www.tutorialspoint.com/laravel/
c) https://laravel.com/
d) https://nodejs.org/en/
e) https://www.w3schools.com/nodejs/