

**Free and Open Source Programming (FOSP)****BEG 275CO****Year: II****Semester: II**

Teaching Schedule Hours/Week	Examination Scheme						
Theory	Tutorial	Practical	Internal Assessment		Final		Total
			Theory Marks	Practical Marks*	Theory Marks**	Practical Marks	
3	1	3	20	50	80	-	

\* Continuous

\*\* Duration: 3 hours

**Course Objective:** To provide basic concept of ‘Free and Open Source Programming’ and its applications.

**1. Free and Open Source Software (FOSS) an Overview (5 Hrs.)**

- 1.1 Introduction
- 1.2 The FOSS Philosophy
- 1.3 History and Evolution of FOSS
- 1.4 Design Logic, Source Code, Binary Code
- 1.5 Examples of Open Source Software Products
- 1.6 Emerging Applications of FOSS Philosophy in Various Sectors.

**2. Classification of Free and Open Source Software (5 Hrs.)**

- 2.1 Free Software
- 2.1 Open Source Software
- 2.3 Proprietary Software
- 2.4 Other Existing Software Models
- 2.5 Open Standards
- 2.6 Open Content
- 2.7 Benefits and Shortcoming of FOSS
- 2.8 Strengths and Weakness of FOSS
- 2.9 Comparison of FOSS and Proprietary Software

**3. Licensing (4 Hrs.)**

- 3.1 Types of Licensing
- 3.2 Commercial License versus Open Source License
- 3.3 Open Source Software Licensing, Types of OSS Licenses, OSS Licensing Strategies

**4. Web Basics (3 Hrs.)**

- 4.1 Web Browsers
- 4.2 Web Servers
- 4.3 Types of Web Pages & its Processing in WWW
- 4.4 HTTP, HTTPS
- 4.5 HTTP Transaction
- 4.6 FTP & its Types.

**5. Web Development with HTML & DHTML (6 Hrs.)**

- 5.1 Introduction to HTML
- 5.2 HTML Assistants, Editors, Convertors, Images and Multimedia, Linking Documents, Tables, Frames, Image Maps, Forms, CSS

**6. Introduction to JavaScript (4 Hrs.)**

- 6.1 Basic Introduction
- 6.2 Functions
- 6.3 Error Handling
- 6.4 Dialog Box
- 6.5 Form Validation

**7. Open Source Programming with PHP (10 Hrs.)**

- 7.1 Introduction
  - a. Syntax
  - b. Operators
  - c. Variables
  - d. Constants
  - e. Control Structures
  - f. Language Constructs and Functions
- 7.2 Arrays
  - a. Enumerated Arrays
  - b. Associative Arrays
  - c. Array Iteration
  - d. Multi-Dimensional Arrays
  - e. Array Functions
- 7.3 Functions
  - a. Syntax
  - b. Arguments
  - c. Variables
  - d. References

e. Returns

f. Variable Scope

**7.4 File Handling**

a. Files

b. Reading

c. Writing

d. File System Functions

**8. Databases Connectivity in PHP (4 Hrs.)**

8.1 SQL

8.2 Basic SQL Queries (CRUD)

8.3 Database Connectivity

**9. Session and Cookies (4 Hrs.)**

9.1 Introduction to Session

9.2 Create Session

8.3 Destroy Session

9.4 Cookies

**Laboratory**

There shall be lab exercises to cover all the theoretical concept of the Free & Open Source Programming.

**References:**

1. HTML, DHTML, JavaScript & PHP, Ivan Bayross (New Edition)
2. **Free and Open Source Software - A general Introduction** by Kenneth Wong and Phet Sayo, Published by IOSN APDIP.
3. The Cathedral and the Bazaar; Musings on Linux and Open Source by an Accidental Revolutionary by Eric S. Raymond.
4. Beginning of PHP, WROX , PHI Publishing House
5. Professional PHP Programming, Jesus M. Castagnetto, Harish Rawat,

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### **Evaluation Scheme**

There will be questions covering all the chapters in the syllabus. The evaluation scheme for the question will be as indicated in the table below:

<b>Chapter</b>	<b>Hours</b>	<b>Mark Distribution*</b>
1	5	7
2	5	10
3	4	6
4	3	4
5	6	10
6	4	10
7	10	20
8	4	7
9	4	6
<b>Total</b>	<b>45</b>	<b>80</b>

\* There may be minor deviation in marks distribution.