# Free and Open Source Programming (FOSP)

## BEG ***CO

**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 | - | 150 |

* 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,

**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:

| Chapter | Hours | Mark Distribution* |
|---|---|---|
| 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 |
| **Total** | **45** | **80** |

* There may be minor deviation in marks distribution.