LOYOLA COLLEGE (AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE
BACHELOR OF SCIENCE in COMPUTER SCIENCE
(Effective from the Academic year 2012 -2013 onwards)

ELECTIVE GENERAL – 1

SEMESTER III

1. NUMERICAL METHODS AND C LANGUAGE
2. CIPHER SECURITY AND CYBER LAWS
3. COMPUTER FUNDAMENTALS AND OFFICE AUTOMATION

ELECTIVE GENERAL – II

SEMESTER IV

1. WEB PROGRAMMING
2. DESIGN AND ANIMATION THROUGH FLASH
3. DATABASE MANAGEMENT SYSTEMS
**Objectives:**
1. To understand the fundamentals of numerical methods.
2. Learn the basic concepts of programming and solve the numerical methods problems through C language

**UNIT I**
Interpolation: Newton’s – Langrage’s interpolating polynomials.

**UNIT II**
Matrices: Jacobi’s method of determining eigen values and eigen vectors of a real symmetric matrix.
Curve fitting: The linear law – weighted least squares – fitting straight line.

**UNIT III**

**UNIT IV**
Arrays: one, two and multi dimensional arrays – initialization of arrays.

**UNIT V**
Functions: form of functions \ actual and formal arguments RETURN statement – calling a function – non integer functions – functions with arrays – local and global variables.

**Text Books**

**Reference Books**
2. B.Thiyagarajan, “C for you”, MJP publishers,2010
Objectives:
1. To provide the awareness of hacking and unauthorised accessing.
2. To give the basics of security in internet.
3. To give awareness of safe transactions through internet and cyber laws.

UNIT I

UNIT II

UNIT III
Phishing - Recognizing a Phishing Trip - Online Shopping Basics - Shopping Problems - Ensuring Safe Shopping - Cookies - Choosing your browser - Understanding the plug-in predicament

UNIT IV

UNIT V

Text Books:
1. McCarthy Linda, Weldon-Siviy Denise, "Own Your Space - Keep Yourself and Your Stuff Safe Online, Microsoft press

Reference Books:
1. Brown C. Bruce , 2011, " How to stop E-mail Spam, Spyware. Malware, Computer Viruses and Hackers from running your Computer or Network: The complete guide for your home and work", Atlantic Publishing group.

Web References:
Objectives:

1. To give the basics of computers and processing.
2. To give document editing and data manipulation and presentation through MS-Office tools including Ms-Word, Ms-Excel and Ms-Power point.
3. To know the features of internet and mailing.

UNIT I

UNIT II

UNIT III
Microsoft Excel: Understanding Basics- Menus- Creating Worksheet – Formulas- Functions-Creating Chart and Graph.

UNIT IV

UNIT V

Text Book:
Maidasani Dinesh ,”Learning Computer Fundamentals, MS-Office and Internet and Web Technology”, 2005 Firewall Media, 1st Edition,

Reference Books:
Objectives:

1. To learn the programming environment for the Internet
2. To that will gradually build a web site using HTML.
3. To create an interactive and validated web site using Java Script.

UNIT I

UNIT II

UNIT III

UNIT IV
Forms used by Web site: The form object-Other Built-in Objects in Java Script-User Defined objects-Cookies.

UNIT V

Text Book:

Reference Books:
2. Schafer(Steren M),HTML CSS Javascript part python and PHP web standards programmings Reference,Edition 1, 2005
Objectives:

1. To draw and manage pictures, changing the colors, animation and different tweening options.
2. To acquire skill in writing action scripts to automate the animation in easy steps.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

Text Books:

Reference Books:
Semester: IV
Category: EG

Credits: 1
No. of Hrs/week: 3

DATABASE MANAGEMENT SYSTEMS

Objectives:

1. To know the fundamentals of Database systems and file systems.
2. To know the organization of data in cost effective manner
3. To experience the basic SQL functionalities

UNIT I
File management systems - Database management systems - Comparison of both-an overview of database management - brief introduction of structured query languages - Embedded SQL - Dynamic SQL

UNIT II
DBMS Models - The Hierarchical model - Network model - Relational model - Database system architecture.
Relational database primer - Relational database characteristics -

UNIT III
Database integrity - keys - entity and referential integrity - views - Functional dependency - Normalisation - First normal form - Second normal form - Third normal form.

UNIT IV
Creating - dropping and altering tables - DML operations - simple queries - operators - Sub queries joining tables.

UNIT V
Character functions - number functions - date functions - conversion functions - Group Functions - creating views - dropping and altering views - creating indexes.

Text Books:

Reference Books: