E.G.S. PILLAY ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai Accredited by NAAC with "A" Grade | Accredited by NBA (CSE, EEE, MECH, IT, CIVIL, ECE)

NAGAPATTINAM – 611 002

B.Tech. Information Technology

Full Time Curriculum and Syllabus

First Year – First Semester

Course Code	Course Name	L	T	P	C	Maximum Marks		
						CA	ES	Total
Theory Course								
1701MA101	Engineering Mathematics - I	3	2	0	4	40	60	100
1701PH101	Applied Physics for Engineers	3	0	0	3	40	60	100
1701EN101	Technical English	3	0	0	3	100	0	100
1701CH101	Applied Chemistry in Informatics	3	0	0	3	40	60	100
1701GEX01	Basic Electrical and Electronics Engineering	3	0	0	3	40	60	100
1701GEX02	Engineering Graphics	2	2	0	3	50	50	100
1701GEX03	Programming in C	3	0	0	3	40	60	100
Laboratory Course								
1701HS151	Physics and Chemistry Lab – I	0	0	2	1	50	50	100
1701GEX51	Programming in C Lab	0	0	2	1	50	50	100
1701GEX52	Communication Skills Lab	0	0	2	1	50	50	100
	Total	20	4	6	25	500	500	1000

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appropriate scale to fit solution within A3 size.

1701GEX03	PROGRAMMING IN C (Common to all B.E. / B.Tech Degree Programmes)	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES:

1. To prepare students to comprehend the fundamental concepts
2. To demonstrate fine grained operations in number system
3. To gain exposure in programming language using C
4. To develop programming skills using the fundamentals and basics of C Language

UNIT I BASIC CONCEPTS **8 Hours**

Organization and Classifications of Computer- Generations of Computers- Number System- Problem Solving Techniques – Algorithm Design – Flowchart–Pseudocode

UNIT II INTRODUCTION TO C LANGUAGE **10 Hours**

Overview of C - Constants, Variables and Data Types- Compilation and Linking - Operators and Expressions- Decision Making and Branching – Looping statements

UNIT III ARRAYS AND STRINGS **9 Hours**

Arrays-One Dimensional Array- Declaration and Initialization-Two Dimensional Array-Declaration and Initialization- Programs using Arrays- Strings- String Handling Functions, Programs using Strings- Managing I/O Operations

UNIT IV FUNCTIONS & STRUCTURES **10 Hours**

Functions-Function Prototypes-Declaring, Defining and Calling Functions-Call by value and Call by Reference-Recursive Functions-Structures- Declaration and Definition -Accessing Structure Members-Arrays of Structures-Unions- Programs using Structures and Unions

UNIT V POINTERS & FILES **8 Hours**

Pointers-Dynamic Memory Allocation-Arithmetic Operations using Pointers, Files – File Manipulation-I/O Operations, Preprocessor Directives, Storage Classes

TOTAL: 45 HOURS

FURTHER READING:

Object Oriented Programming Approach.

COURSE OUTCOMES:

On the successful completion of the course, students will be able to

CO1: Describe basic concepts of computers
CO2: Paraphrase the operations of number system
CO3: Describe about basic concepts of C-Language
CO4: Understand the code reusability with the help of user defined functions
CO5: Analyze the structure concept, union, file management and preprocessor in C language

REFERENCES:

1. E. Balagurusamy,"Programming in ANSI C", McGraw Hill Education India Private Limited; Seventh Edition, 2017.

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B.Tech. Information Technology

Full Time Curriculum and Syllabus

First Year – Second Semester

Course Code	Course Name	L	T	P	C	Maximum Marks		
						CA	ES	Total
Theory Course								
1701MA201	Engineering Mathematics - II	3	2	0	4	40	60	100
1701PH201	Physics of Engineering Materials	3	0	0	3	40	60	100
1701CH201	Environmental Studies	3	0	0	3	40	60	100
1701GE201	Basic Civil and Mechanical Engineering	3	0	0	3	40	60	100
1702CS201	Programming in C++	3	0	0	3	40	60	100
1701LE201 / 1701LE202	Communicative English / Communicative Hindi	3	0	0	3	100	-	100
Laboratory Course								
1701GEX53	Workshop Practice	0	0	2	1	50	50	100
1701HS251	Physics and Chemistry Lab - II	0	0	2	1	50	50	100
1702CS251	Programming in C++ Lab	0	0	2	1	50	50	100
	Total	18	2	6	22	450	450	900

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1702CS201

PROGRAMMING IN C++

(Common to B.E. CSE & B.Tech. IT Programmes)

L	T	P	C
3	0	0	3

COURSE OBJECTIVES:

1. To understand the concepts of Object Oriented Programming.
2. To execute the Object oriented concepts to solve problems using C++
3. To develop programs using files and templates.

UNIT I BASIC CONCEPTS **8 Hours**

Object Oriented Paradigm – Elements of Object Oriented Programming – Merits and Demerits of Object oriented Methodology – C++ fundamentals – Data types, Operators and Expressions, Control flow, Arrays – Implementing ADT in the base language.

UNIT II CLASS AND OBJECTS **10 Hours**

Classes and Objects – Passing objects as arguments – returning objects – Friend functions – Static data and member functions – Constructors – Parameterized Constructor – Destructor – Copy constructor – Array of objects – pointer to object members.

UNIT III POLYMORPHISM AND INHERITANCE **9 Hours**

Polymorphism – Function overloading – Unary operator overloading – Binary operator overloading – Data conversion – Overloading with Friend Functions. Inheritance – Derived Class – Abstract Classes – Types of Inheritance – Iterators and Containers.

UNIT IV VIRTUAL FUNCTIONS AND TEMPLATES **10 Hours**

Virtual functions – Pure virtual functions – Virtual Destructors – RTTI – Typeid – Dynamic casting – Cross casting – Down casting – Template – Class template, Function Template, Generic programming, Standard Template Library.

UNIT V FILES AND EXCEPTION HANDLING **8 Hours**

C++ streams – console streams – console stream classes – formatted and unformatted console I/O operations – Manipulators File streams classes – File modes – File pointers and Manipulations – File I/O – Exception Handling – Try-Catch-Throw Paradigm – Exception specifications – Terminate and unexpected functions – Uncaught Exception.

FURTHER READING: **TOTAL: 45 HOURS**

Object Oriented Approach in Java Programming

COURSE OUTCOMES:

On the Successful completion of the course, Students will be able to

CO1: Explore the concept of classes and objects.
CO2: Develop programs using arrays and strings.
CO3: Implement the various types of inheritance.
CO4: Exemplify the concepts of functions and streams.
CO5: Develop programs using files, templates and exception handling.

REFERENCES:

1. K.R.Venugopal, Rajkumar Buyya, and T.Ravishankar, "Mastering C++", MaGraw Hill Education, 2nd Edition, 2017.
2. Bjarne Stroustrup, "The C++ programming language", Addison Wesley, fourth edition, 2013
3. E.Balagurusamy, "Object Oriented Programming with C++", MaGraw Hill Education, 5th Edition, 2017.
4. Robert Lafore, "Object Oriented Programming in C++", Galgotia Publications Pvt. Ltd., Third Edition, 1999.
5. Ira Pohl, "Object oriented programming using C++", 2nd Edition, Pearson Education, Reprint 2004.
6. http://nptel.ac.in/

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B.TECH INFORMATION TECHNOLOGY

Fourth Year – Seventh Semester

Course Code	Course Name	L	T	P	C	Maximum Marks		
						CA	ES	Total
Theory Course								
1701MGX01	Professional Ethics	3	0	0	3	40	60	100
1702IT701	Data Analytics	3	2	0	4	40	60	100
1702IT702	Security in Computing	3	0	2	4	50	50	100
1702IT703	Cloud Infrastructure and Computing	3	0	2	4	50	50	100
1703IT015	Information Management (Elective 5)	3	0	0	3	40	60	100
1703ED001 / 1703ME027 / 1703CE035	Open Elective (Elective 6): Start Up Entrepreneurship / Universal Human Values and Ethics / Industrial Pollution, Prevention and Control	3	0	0	3	40	60	100
Laboratory Course								
1704IT751	Software Development (Mini Project III)	0	0	2	1	50	50	100
1704GE751	Life Skills: Competitive Exam Preparation	2	0	0	2	100	-	100
1704IT752	In Plant / Internship Training Presentation	0	0	0	1	100	0	100
	Total	20	2	6	25	510	390	900

L – Lecture | T – Tutorial | P – Practical | CA – Continuous Assessment | ES – End Semester

	DEEP LEARNING	L	T	P	C
		3	0	0	3

AIM: To study the concepts of Deep Learning process and analytics procedures

PREREQUISITE: Data Warehousing And Data Mining, Artificial Intelligence

COURSE OBJECTIVES:

1. Teach the concepts of deep learning process
2. Study the deep learning Strategies 1 and 2
3. Study of various learning and classification techniques
4. Study of various real time case studies of deep learning process

UNIT I	INTRODUCTION	9 Hours

Review of Artificial Intelligence – Neural Networks – Supervised Learning – Back Propagations

UNIT II	DEEP LEARNING STRATEGIES - 1	9 Hours

Properties of CNN representations: inevitability, stability, invariance – Localization – Regression - RNNs

UNIT III	DEEP LEARNING STRATEGIES - 2	9 Hours

Deep Unsupervised Learning – Auto encoders (standard, de-noising, contractive, etc etc) - Variation Auto encoders - Adversarial Generative Networks - Maximum Entropy Distributions

UNIT IV	LEARNING AND CLASSIFICATION	9 Hours

Reinforced Learning — Learning Agents – Binary Classification – Multi Class Classification - CNN Classification – Deep Belief – Computer Vision

UNIT V	CASE STUDY	9 Hours

Medical Imaging – Natural Language Processing - Speech Processing – Secure Online Processing – Fraud Detection – Cyber Forensics

	TOTAL:	45 Hours

COURSE OUTCOMES:

At the end of this course, students will be able to,

CO1: Understand the concept of deep learning
CO2: Explain different representation and strategies of deep learning
CO3: Explain various unsupervised deep learning techniques and networks
CO4: Understand learning and classification techniques
CO5: Demonstrate various case studies of deep learning applications

REFERENCES:

1. Daniel Graupe, "Deep Learning Neural Networks and Case Studies", World Scientific Publishing Co. Pt. Ltd, 2016
2. Ian Goodfellow, Yoshua Bengio, Aaron Courville, "Deep Learning (Adaptive Computation and Machine Learning series)", MIT Press, 2017
3. Nikhil Buduma, Nicholas Locascio Fundamentals of Deep Learning: Designing Next-Generation Machine Intelligence Algorithms, O'Reilly Media; 1 edition, 2017
4. Aurélien Géron, Hands-On Machine Learning with Scikit-Learn and Tensor Flow: Concepts, Tools, and Techniques to Build Intelligent Systems, O'Reilly Media; 1 edition, 2017
5. Russell Reed (Author), Robert J Marks II, Neural Smithing: Supervised