

Programme	Name of the course	L	T	P	C
B.Tech IT	VALUE ADDED COURSE – 2023-2024 PYTHON PROGRAMMING AND PRACTICES Batch : 2022-2026	2	1	1	2

Course Objective

- To equip students with advanced proficiency in Python programming, covering topics such as decorators, design patterns, web development, data science, machine learning, testing, concurrency, and deployment, fostering expertise in building robust and scalable applications.

Module	Description	Instructional Hours
1	Advanced Python Language Features and Functional Programming in Python <ul style="list-style-type: none"> Decorators and Metaclasses-Understanding decorators ,Creating custom decorators , Metaclasses and their applications Context Managers-Writing context managers using with statement, implementing context managers with contextlib module. Functional Programming Concepts-First-class functions, Higher-order functions, Pure functions and immutability Lambda Functions and Closures-Writing and using lambda functions, Understanding closures and their applications 	06
2	Asynchronous Programming and Design Patterns in Python <ul style="list-style-type: none"> Introduction to Asynchronous ProgrammingUnderstanding asynchronous vs synchronous code, Asyncio module and event loop Coroutines-Writing asynchronous functions (coroutines),Managing coroutines using asyncio Creational Design Patterns-Singleton,Factory Method, Abstract Factory Structural Design Patterns-Adapter, Decorator, Composite Behavioral Design Patterns-Observer, Strategy, Command 	06
3	Web Development with Flask/Django and Data Science and Machine Learning with Python <ul style="list-style-type: none"> Flask or Django Introduction- Setting up a basic web application,Routing and views ORM (Object-Relational Mapping)- SQLAlchemy (Flask) or Django ORM, Database models and migrations NumPy and Pandas-Advanced data manipulation with NumPy and Pandas Scikit-learn-Introduction to machine learning algorithms 	06
4	Testing in Python and Concurrency and Parallelism <ul style="list-style-type: none"> Unit testing with unittest or pytest, Test fixtures and parameterized tests, Mocking and test-driven development Multiprocessing vs multithreading, Python's concurrent. futures module, Parallelism with multiprocessing and threading 	06
5	Advanced File Handling and Advanced Web Development <ul style="list-style-type: none"> Working with binary files, Reading and writing JSON, CSV, and other formats, Serialization and deserialization. RESTful APIs- Design principles, Building RESTful APIs in Flask/Django Authentication and Authorization-Token-based authentication, Role-based access control 	06

6 **Advanced Python Libraries and DevOps and Deployment**

- **Advanced NumPy and Pandas**-Memory optimization techniques, Advanced data manipulation tasks
- **Deep Learning with TensorFlow/Keras**-Introduction to neural networks, Building and training deep learning models
- **Containerization with Docker**- Docker basics, Containerizing a Python application
- **Deployment Strategies**- Deploying to cloud platforms (e.g., AWS, Heroku), Continuous Integration and Continuous Deployment (CI/CD)

06

Total Instructional Hours

36 Hours

Course Outcomes:

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

- Understand the Master decorators, metaclasses, and context managers for advanced Python programming.
- Apply creational, structural, and behavioral design patterns to enhance software design.
- Understand the Build web applications with Flask/Django, including routing, views, and ORM integration.
- Analyze data using NumPy and Pandas, implement machine learning algorithms, and optimize models.
- Understand concurrency, and deploy applications using advanced strategies.
- Understand the python libraries and the applications on it.


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Dean Academics

Course Code
19VACH01

Course Name
Advanced Database Technology

Credits
2

Course Objective:


- To equip students with the knowledge and skills to proficiently design, implement, and optimize PL/SQL programs, covering essential concepts such as variables, control structures, cursors, procedures, functions, triggers, dynamic SQL, and performance optimization.

Module No	Heading	Subheading	Hours
Module 1	Introduction to PL/SQL	<ul style="list-style-type: none">Overview of PL/SQLPL/SQL ArchitecturePL/SQL Variables and ConstantsControl Structures and Loops	6
Module 2	Cursors in PL/SQL and Exception Handling	<ul style="list-style-type: none">Cursor attributes and operationsException typesException handling techniques	6
Module 3	PL/SQL procedures and functions	<ul style="list-style-type: none">Procedures and overloadingFunctions and overloading	6
Module 4	PL/SQL Packages	<ul style="list-style-type: none">Creating and using packagesPackage initialization and finalization	6
Module 5	Triggers in PL/SQL	<ul style="list-style-type: none">Trigger execution timingUsing triggers	6
Module 6	Dynamic SQL and Optimization	<ul style="list-style-type: none">Dynamic SQL with DBMS_SQLPerformance optimization techniques	6
Total Contact Hours			36 Hours

Course Outcomes:

At the end of the course the students will able to

- Demonstrate a strong understanding of PL/SQL, including the ability to declare variables, use control structures, and implement cursors for data retrieval and processing.
- Design and implement modular and efficient PL/SQL programs, including procedures, functions, and triggers, while adhering to best practices for code organization and readability.
- Utilize dynamic SQL for flexible query execution and implement performance optimization techniques, such as bulk processing, to enhance the efficiency of PL/SQL programs

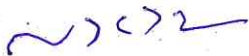

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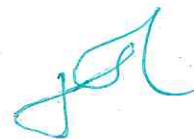

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Program B.Tech IT	Name of the course VALUE ADDED COURSE – Advanced C Programming II year III sem – Academic year - 2023-2024 2022-2026 Batch	
Course code 22VACH01	<ol style="list-style-type: none"> 1. Develop a deep understanding of advanced C language features, focusing on pointers, memory management, and complex data structures. 2. Equip students with skills in file I/O operations, process/thread management, and inter-process communication. 3. Introduce students to low-level programming and optimization techniques for embedded systems and hardware interactions. 4. Enable students to build network applications and implement concurrency control mechanisms effectively. 5. Familiarize students with debugging, profiling, and best practices in coding, emphasizing the latest C standards and tools. 	
Course Objective		
Module	Description	Instructional Hours
I	<p>Unit 1: Advanced Language Features and Memory Management</p> <p>In-Depth Pointers and Memory Management - Advanced pointer techniques (pointer to pointer, function pointers) Memory management strategies (smart pointers, memory pools) Complex Data Structures - Implementing advanced data structures: graphs, tries, and self-balancing trees, Exploring memory layout implications on data structures. Advanced Algorithms - Analysis of sorting and searching algorithms (complexity considerations), Implementing graph algorithms: Dijkstra's, A*, etc. Callbacks and Function Pointers - Deep dive into function pointers and their applications in callback mechanisms, Implementing event-driven programming using callbacks</p>	6
II	<p>Unit 2: System-Level Programming</p> <p>File and I/O Operations - Advanced I/O: Non-blocking I/O, memory-mapped files, File system interaction and performance optimization. Process and Thread Management - Advanced process management: Daemon processes and job control, Thread safety and concurrency in shared resources. Inter-process Communication (IPC) - Implementing and optimizing different IPC mechanisms, Synchronization issues and solutions in IPC. Signals and Process Management - Advanced signal handling techniques and implications in system programming</p>	6

III	<p>Unit 3: Low-Level Programming and Embedded Systems</p> <p>Memory Layout and Performance Optimization - Understanding C's memory model: stack, heap, and static memory, Profiling memory usage and optimizing algorithms for performance. Embedded Systems Fundamentals - Introduction to hardware interfaces and device drivers, Writing low-level code for microcontrollers and hardware interaction, Bitwise Operations and Algorithm Implementation - Advanced use of bitwise operators in performance-critical applications, Implementing data compression and encryption algorithms using bit manipulation</p>	6
IV	<p>Unit 4: Networking and Concurrency</p> <p>Network Programming Essentials - Socket programming: Advanced techniques for TCP/IP and UDP, Understanding and implementing RESTful APIs in C. Concurrency and Synchronization Mechanisms - Advanced threading models and their implementation, Lock-free programming techniques and their use cases. Handling Race Conditions and Deadlocks - Analyzing and resolving concurrency issues in multithreaded environments.</p>	6
V	<p>Unit 5: Modern C Practices and Tools</p> <p>Debugging Techniques and Best Practices - Utilizing tools like GDB and Valgrind for memory debugging, Advanced debugging strategies: Core dumps and post-mortem analysis. Code Quality and Maintenance - Best practices for writing maintainable and portable C code Implementing static analysis tools and coding standards, Modern C Standards and Enhancements - Exploring features of C11 and C18 (multithreading, atomics, etc.). Adapting legacy code to modern C practices and standards.</p>	6
Total Instructional Hours		30
<p>Course Outcomes</p> <ul style="list-style-type: none"> • Students will be able to implement complex data structures and algorithms efficiently using advanced C features. • To demonstrate competence in system-level programming and manage concurrency in multi-threaded applications. • To produce maintainable and optimized code, utilizing modern tools and adhering to industry standards. 		



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DEAN ACADEMICS

Programme	Name of the course VALUE ADDED COURSE – 2022-2023	L	T	P	C
B.Tech IT	INTRODUCTION TO PYTHON PROGRAMMING 2021-2025 Batch	2	1	1	0
Course Objective	The student should be able				
	1	To know the basics of algorithmic problem solving.			
	2	To read and write simple Python programs.			
	3	To develop Python programs with conditionals and loops and to define Python functions and call them.			
	4	To use Python data structures -- lists, tuples, dictionaries.			
	5	To do input/output with files in Python.			
	6	To develop python Programs using String and Functions.			
Module	Description	Instructional Hours			
I	INTRODUCTION Introduction to Python, Features of Python, Install Python and Environment Setup, Python Identifiers, Keywords and Indentation, Comments , Python Data Types, Variables, Getting User Input, Simple input & Output, Simple Output Formatting, Operators in Python.	6			
II	CONTROL STATEMENTS Introduction to Control Statements : if-else, if-elif-else, while loop , for loop , break , continue, assert ,pass and Simple Programs.	6			
III	LIST Introduction to lists, List Methods an Operations , Accessing Values in Lists , Updating Lists, Delete List Elements, Basic List Operations, Indexing, Slicing, and Matrixes, Built-in List Functions & Methods.	6			
IV	TUPLE Tuple Operations and Methods :Accessing Values in Tuples, Updating Tuples, Delete Tuple Elements, Basic Tuples Operations, Indexing, Slicing, and Matrixes, Built-in Tuple Functions.	6			
V	SET AND DICTIONARY Creating a set, Adding items to the set, Python Set Operations, Python Built-in set methods, Accessing Values in Dictionary, Updating Dictionary, Delete Dictionary Elements, Built-in Dictionary Functions & Methods.	6			
VI	STRINGS AND FUNCTIONS Creating String , Indexing and splitting, Deleting, String Operators, Python String Formatting, Python String functions, Functions- Defining a function, Calling a Function, return statement.	6			
Total Instructional Hours					36

Course Outcome	CO1	Develop algorithmic solutions to simple computational problems
	CO2	Read, write, execute by hand simple Python programs
	CO3	Structure simple Python programs for solving problems and Decompose a Python program into functions
	CO4	Represent compound data using Python lists, tuples, dictionaries
	CO5	Read and write data from/to files in Python Programs.
	CO6	Read and write data using string and functions.
TEXT BOOK:		
T1	Guido van Rossum and Fred L. Drake Jr, An Introduction to Python – Revised and updated for Python 3.6.2, Shroff Publishers, First edition (2017).	
T2	S. Annadurai, S.Shakar, I.Jasmine, M.Revathi, Fundamentals of Python Programming, Mc-Graw Hill Education (India) Private Ltd, 2019	

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DEAN ACADEMICS

DEPARTMENT OF AERONAUTICAL ENGINEERING

VALUE ADDED COURSE- DESIGN AND DRAFTING USING SOLID WORKS

SYLLABUS

SEMESTER :III (ODD)

DURATION :42 HRS

Course Code	Name of the Course	Course Duration
21VAAE01	Design and drafting using solid works	42

Course Objective

- The course aims to give students and professionals the essentials that is needed to become a known SOLIDWORKS associate.
- It will help individuals use the software with confidence and design/draft the next innovative thing.
- Skill to Build, control, and analyze assemblies for fit and function.
- Able to compete the industrial standards with known subject knowledge.

Sl. No.	Module	Details of Module	No. of Hours
1.	Introduction to Solid Works	<ul style="list-style-type: none"> ➤ SolidWorks Graphical User Interface ➤ Feature manager design tree, Callouts, Handles ➤ Confirmation corner, mouse buttons, keyboard shortcuts, Command Manager, ➤ Hardware and Software requirements, ➤ SolidWorks Task Scheduler 	5
2.	SKETCHER	<ul style="list-style-type: none"> ➤ Sketch Entities, Sketch Tools ➤ Blocks – Make block, Edit block, Insert block, Add/Remove Entities, Rebuild, Save, Explode ➤ Relations - Adding Sketch Relation, Automatic relations, ➤ Dimensioning - Smart, Horizontal, Vertical, Ordinate, Horizontal ordinate, Vertical ordinate, Align ordinate, fully define sketch. ➤ Sketch Diagnosis, Sketch Expert , 3D Sketching, Rapid Sketch 	6
3.	PART MODELING	<ul style="list-style-type: none"> ➤ Part Modeling Tools ➤ Creating reference planes ➤ Creating Extrude features, Revolve features 	6

Sl. No.	Module	Details of Module	No. of Hours
		<ul style="list-style-type: none"> ➤ Creating Swept features, Loft features ➤ Creating curves, Fillet features, Hole types ➤ Creating Chamfer, Shell, Rib, Pattern ➤ Advanced Modeling Tools ➤ Inserting Fastening features 	
4.	ASSEMBLY	<ul style="list-style-type: none"> ➤ Assembly Modeling Tools ➤ Introduction to Assembly, Modeling & Approaches ➤ Applying Standard Mates, Applying Smart mates ➤ Applying Mate reference ➤ Manipulating Components ➤ Creating Pattern, Explode Views ➤ Top Down Design 	6
5.	SURFACE MODELING	<ul style="list-style-type: none"> ➤ Creating Extrude, Revolve, Swept, loft, Boundary surface. ➤ Inserting Planar Surface, Offset Surface, Radiate Surface. 	2
6.	DRAFTING	<ul style="list-style-type: none"> ➤ Generating Drawing Views ➤ Introduction To Angle Of Projection ➤ Generating Views ➤ Creating Dimensions ➤ Inserting Annotations 	3
7.	SHEET METAL	<ul style="list-style-type: none"> ➤ Sheet Metal Design ➤ Working with import data 	2
8.	WELDMENT DESIGN & MOLD DESIGN	<ul style="list-style-type: none"> ➤ Introduction to Weldment, 3D sketch ➤ Introduction of Mold, type of mold design, how to used draft analysis ➤ Introduction to CAE/CDM 	3
9.	GD & T	<ul style="list-style-type: none"> ➤ Features and Rules of GD&T ➤ Datum's Control ➤ Adding GD&T to a Drawing/Design ➤ Form Tolerances, Orientation Tolerances, Profile Tolerances ➤ Location Tolerances, Runout Tolerances 	4
10.	PRODUCT DATA MANAGEMENT	<ul style="list-style-type: none"> ➤ Introduction to PDM, LAN, WAN, Server, client, user, administrator ➤ Creating new project, Check In/Check Out of a new document, viewing the configurations. ➤ Archive/Restore a document, Delete/Rollback a document 	3

Sl. No.	Module	Details of Module	No. of Hours
11.	DATA MIGRATION	<ul style="list-style-type: none">➤ Build and analyze for fit and function Discussion➤ Detailing	2

TOTAL: 42 HRS

Course Outcome: The student will be able to

1. Demonstrate competency with multiple drawing and modification commands in SolidWorks.
2. Create three-dimensional assemblies incorporating multiple solid models.
3. Apply industry standards in the preparation of technical mechanical drawings.
4. SolidWorks has advanced skills and the students can chose carrier in many sectors dealing with product design, validation, manufacturing, etc.


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DEPARTMENT OF MECHANICAL ENGINEERING

SYLLABUS

Training on Thermal Cutting Process, 3D Printer, CMM and Hi-Racing Lab

Course Objective:


- To Know the oxy-fuel cutting, plasma cutting and laser cutting processes.
- To learn the faster and more efficient prototyping of the object.
- To create patterns in wood like round off, work top edges, etc.
- To learn the basic concepts in Coordinate measuring machine.
- To gain knowledge about design and fabrication of future concept vehicles.

Sl. No.	Module	Details of Module	No. of Hours
1.	Introduction on thermal cutting process	<ul style="list-style-type: none"> ➤ Basics of thermal cutting process ➤ Basics of oxy fuel cutting process ➤ Plasma cutting process ➤ Laser cutting process 	6
2.	Demonstration of thermal Cutting process	<ul style="list-style-type: none"> ➤ Demonstration by virtual mode on thermal cutting process ➤ Demonstration virtually on oxy-fuel cutting process ➤ Demonstration virtually on plasma cutting process ➤ Demonstration virtually on laser cutting process 	6
3.	Assessment on thermal cutting process	<ul style="list-style-type: none"> ➤ Objective type test on thermal cutting process ➤ Oxy-fuel cutting process ➤ Plasma cutting process ➤ Laser cutting process 	6
4.	3D Printer and Wood router	<ul style="list-style-type: none"> ➤ Introduction -3D printer and types ➤ Wood router ➤ Stereolithography ➤ Selective Laser Sintering ➤ Digital Light Process ➤ Multi Jet Fusion ➤ PolyJet ➤ Direct Metal Laser Sintering ➤ Electron Beam Melting ➤ Hands on training on Fused Deposition Modeling 	6

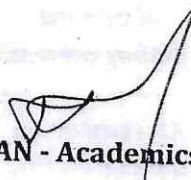
Sl. No.	Module	Details of Module	No. of Hours
5.	Co-ordinate Measuring Machine	<ul style="list-style-type: none"> ➤ Introduction – Coordinate measuring machine ➤ Types of Coordinate measuring machine ➤ Basic principles of CMM ➤ Uses of CMM in Industry ➤ Need of CMM 	6
6.	Design and fabrication of future concept vehicles	<ul style="list-style-type: none"> ➤ Design and fabrication of future concept vehicles ➤ Design Concepts in e-vehicles ➤ Solar powered vehicles 	6
Total Hours			36

Course Outcome:

- To know the various modern welding cutting process like oxy-fuel, plasma and laser etc.
- To create complex three-dimensional prototype models.
- To achieve the carving out the complex shapes from the wood.
- To understand coordinate measuring machine concepts.
- To demonstrate the basic concepts of design and fabrication of vehicles


Faculty In-charge


HOD/MECH


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DEPARTMENT OF MECHANICAL ENGINEERING

SYLLABUS

Solid Works

Course Objective:

The course aims to give students and professionals the essentials that is needed to become a known SOLIDWORKS associate.

It will help individuals use the software with confidence and design/draft the next innovative thing.

Sl. No.	Module	Details of Module	No. of Hours
1.	Introduction to Solid Works	<ul style="list-style-type: none"> ➤ SolidWorks Graphical User Interface ➤ Feature manager design tree, Callouts, Handles ➤ Confirmation corner, mouse buttons, keyboard shortcuts, Command Manager, ➤ Hardware and Software requirements, ➤ SolidWorks Task Scheduler 	6
2.	SKETCHER	<ul style="list-style-type: none"> ➤ Sketch Entities, Sketch Tools ➤ Blocks - Make block, Edit block, Insert block, Add/Remove Entities, Rebuild, Save, Explode ➤ Relations - Adding Sketch Relation, Automatic relations, ➤ Dimensioning - Smart, Horizontal, Vertical, Ordinate, Horizontal ordinate, Vertical ordinate, Align ordinate, fully define sketch. ➤ Sketch Diagnosis, Sketch Expert, 3D Sketching, Rapid Sketch 	6
3.	PART MODELING	<ul style="list-style-type: none"> ➤ Part Modeling Tools ➤ Creating reference planes ➤ Creating Extrude features, Revolve features ➤ Creating Swept features, Loft features 	6
4.	PART MODELING	<ul style="list-style-type: none"> ➤ Creating curves, Fillet features, Hole types ➤ Creating Chamfer, Shell, Rib, Pattern ➤ Advanced Modeling Tools ➤ Inserting Fastening features 	6


Sl. No.	Module	Details of Module	No. of Hours
5.	ASSEMBLY	<ul style="list-style-type: none"> ➤ Assembly Modeling Tools ➤ Introduction to Assembly, Modeling & Approaches ➤ Applying Standard Mates, Applying Smart mates ➤ Applying Mate reference ➤ Manipulating Components ➤ Creating Pattern, Explode Views ➤ Top Down Design 	6
6.	SURFACE MODELING	<ul style="list-style-type: none"> ➤ Creating Extrude, Revolve, Swept, loft, Boundary surface. ➤ Inserting Planar Surface, Offset Surface, Radiate Surface. 	6
Total Hours			36

Course Outcome:

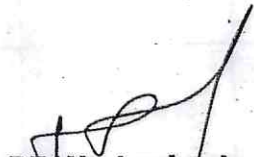
- To demonstrate competency with multiple drawing and modification commands in SolidWorks.
- To create three-dimensional assemblies incorporating multiple solid models.
- To apply industry standards in the preparation of technical mechanical drawings.



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DEAN - Academics



DEPARTMENT OF MECHANICAL ENGINEERING

SYLLABUS

Solid Works

Course Objective:

The course aims to give students and professionals the essentials that is needed to become a known SOLIDWORKS associate.

It will help individuals use the software with confidence and design/draft the next innovative thing.

Sl. No.	Module	Details of Module	No. of Hours
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5.	ASSEMBLY	<ul style="list-style-type: none"> ➤ Assembly Modeling Tools 	6

Sl. No.	Module	Details of Module	No. of Hours
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Total Hours			36

Course Outcome:

- To demonstrate competency with multiple drawing and modification commands in SolidWorks.
- To create three-dimensional assemblies incorporating multiple solid models.
- To apply industry standards in the preparation of technical mechanical drawings.



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DEPARTMENT OF MECHANICAL ENGINEERING

SYLLABUS

Training on Thermal Cutting Process, 3D Printer, CMM and Hi-Racing Lab

Course Objective:

- To Know the oxy-fuel cutting, plasma cutting and laser cutting processes.
- To learn the faster and more efficient prototyping of the object.
- To create patterns in wood like round off, work top edges, etc.
- To learn the basic concepts in Coordinate measuring machine.
- To gain knowledge about design and fabrication of future concept vehicles.

Sl. No.	Module	Details of Module	No. of Hours
1.	Introduction on thermal cutting process	<ul style="list-style-type: none"> ➤ Basics of thermal cutting process ➤ Basics of oxy fuel cutting process ➤ Plasma cutting process ➤ Laser cutting process 	6
2.	Demonstration of thermal Cutting process	<ul style="list-style-type: none"> ➤ Demonstration by virtual mode on thermal cutting process ➤ Demonstration virtually on oxy-fuel cutting process ➤ Demonstration virtually on plasma cutting process ➤ Demonstration virtually on laser cutting process 	6
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4.	3D Printer and Wood router	<ul style="list-style-type: none"> ➤ Introduction -3D printer and types ➤ Wood router ➤ Stereolithography ➤ Selective Laser Sintering ➤ Digital Light Process ➤ Multi Jet Fusion ➤ PolyJet ➤ Direct Metal Laser Sintering ➤ Electron Beam Melting ➤ Hands on training on Fused Deposition Modeling 	6

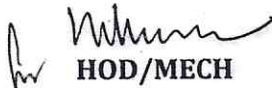
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5.	Co-ordinate Measuring Machine	<ul style="list-style-type: none"> ➤ Introduction - Coordinate measuring machine ➤ Types of Coordinate measuring machine ➤ Basic principles of CMM ➤ Uses of CMM in Industry ➤ Need of CMM 	6
6.	Design and fabrication of future concept vehicles	<ul style="list-style-type: none"> ➤ Design and fabrication of future concept vehicles ➤ Design Concepts in e-vehicles ➤ Solar powered vehicles 	6
Total Hours			36

Course Outcome:

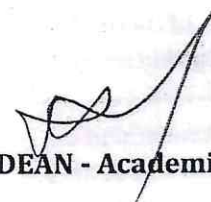
- To know the various modern welding cutting process like oxy-fuel, plasma and laser etc.
- To create complex three-dimensional prototype models.
- To achieve the carving out the complex shapes from the wood.
- To understand coordinate measuring machine concepts.
- To demonstrate the basic concepts of design and fabrication of vehicles



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VALUE ADDED COURSE -SYLLABUS

Academic Year	2023 -2024	Period of Batch	2021- 2025
Course Code	21CSVC06	Semester	VI
Name of the Value added Course	ADVANCED JAVA PROGRAMMING		
Faculty Coordinator	Mr.K.Ravikumar		
Date(s)	05.01.2024 to 11.01.2024		
Hours	36 hrs		

Course Objectives:

- Explore and understand advanced topic of Java programming for solving problems
- Design and develop GUI applications using Swings
- Designing Enterprise based applications by encapsulating an application's business logic.

Module	Description	Instructional Hours
1	Basic Syntax: Structure of a Java program-Data types, variables, and constants- Comments and documentation-Example Programs Control Statements: Conditional statements (if, else, if, else)-Switch-case statements- Looping statements (for, while, do-while)- Example Programs Object-Oriented Programming (OOP): Concepts of objects and classes-Inheritance, polymorphism, encapsulation, and abstraction-Constructors and destructors- Example programs Exception Handling: Understanding exceptions and errors, Try-catch blocks. Custom exception handling, Example programs	6
2	Applets and Swing: Basics of GUI programming with AWT and Swing-Designing and implementing graphical interfaces-Example programs Introduction to Java API: Working with Java standard libraries-Utilizing predefined classes and methods-Example programs	6
3	Java Database Connectivity (JDBC): Overview of JDBC-JDBC architecture - JDBC drivers Connecting to Databases : Establishing database connections - Connection pooling - Example programs Executing SQL Queries: Prepared Statement and Callable Statement - Batch processing - Example programs	6
4	Java Servlets : Introduction to Servlets - Servlet life cycle - Servlet containers Servlet Configurations and Parameters : Initialization parameters- Context parameters Handling Form Data : GET and POST methods - HTML forms and servlets	6
5	Mini project : Airline reservation system - Electricity billing system - Stock management system	6
6	Mini project : Data visualization software - Library management system - Clinic management system	6
TOTAL INSTRUCTIONAL HOURS		36

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Course Outcome:

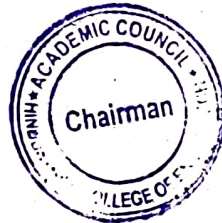
At the end of this course, the students will be able to

1. Explore and understand the advanced concepts of Java Technology.
2. Students learn skills to develop real time applications.
3. Map Java classes and object associations to relational database tables

Reference Books

1. E. Balagurusamy, "Programming with Java", TataMc-Graw Hill, 5th Edition.
2. Sagayaraj, Denis, Karthick and Gajalakshmi, "Java Programming for Core and advanced learners", Universities Press (INDIA) Private Limited 2018.
3. Herbert Schildt, "The complete reference Java", TataMc-Graw Hill, 7 th Edition.


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Chairman - BoS
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING & ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

VALUE ADDED COURSE -SYLLABUS

Academic Year	2023 -2024	Period of Batch	2022- 2026
Course Code	22CSV04	Semester	IV
Name of the Value added Course	HTML & CSS		
Faculty Coordinator	Mr.K.Ravikumar		
Date(s)	29.01.2024 to 03.02.2024		
Hours	36 hrs		

Course Objectives:

- To introduce the fundamentals of Internet, and the principles of web design.
- To construct basic websites using HTML and Cascading Style Sheets.
- To build dynamic web pages with validation using Java Script objects and by applying different event handling mechanisms.

Module	Description	Instructional Hours
1	HTML5,CSS and Hyberlinks Headers Para a hs,CSS Introduction- Selectors – Structuring Text in HTML – Text Formatting, Inline vs Internal vs External Styling – Lists, Images, Hyperlinks,Tables- CSS Display – CSS Backgrounds, Borders, Margins, Padding – CSS Font Styling – Styling Lists – Styling Tables, Forms – Anchor Tags – Divs	6
2	HTML Forms and Styling Forms – Form attributes, styling – Form Elements – Input Types – Input Atributes – Input Form Attributes	6
3	CSS 3 Animations Transitions, Transformations, Animations – Box Sizing – Flex – Animation & Transformation, Positioning	6
4	Introduction to JavaScript Introduction – Variables, Scoping, Datatypes - Strings and Numbers – Operators and Loops – Functions	6
5	Web Performance Optimization: Importance of web performance and loading speed, Techniques for optimizing images, CSS, and JavaScript Lazy loading and deferred loading strategies Introduction to Content Delivery Networks (CDNs) and caching	6
6	Project and Recap Assigning a Small project that integrates the learned concepts (e.g web page with database connectivity and dynamic content) – Project development and implementation – Recap of key topics and review any difficult areas	6
TOTAL INSTRUCTIONAL HOURS		36



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Course Outcome:

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

1. Describe the concepts of World Wide Web, and the requirements of effective web design.
2. Develop web pages using the HTML and CSS features with different layouts as per need of applications.
3. Use the JavaScript to develop the dynamic web pages.

Reference Books

1. Responsive Web Design with HTML5 and CSS by Ben Frain , TataMc-Graw Hill, 5th Edition.
2. HTML, CSS, and JavaScript All in One, Meloni and Kyrin's, TataMc-Graw Hill, 3 rd Edition.


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VALUE ADDED COURSE -SYLLABUS

Academic Year	2023-2024	Period of Batch	2022-2026
Course Code	22CSVC03	Semester	III
Name of the Value added Course	C AND C++		
Faculty Coordinator	Mr.K.Ravikumar		
Date(s)	04.09.2023 to 9.09.2023		
Hours	36 hrs		

Course Objectives:

- Gain a deep understanding of advanced programming concepts in C and C++.
- Develop skills in software design, implementation, and debugging.
- Explore practical applications of C and C++ in systems programming, game development, and more.

Module	Description	Instructional Hours
1	C++ Basics and Object-Oriented Programming: Introduction to C++: classes, objects, and inheritance Polymorphism and virtual functions Operator overloading and templates Exception handling and error management.	6
2	Advanced C Programming: Pointers and memory management Function pointers and callbacks Dynamic memory allocation and deallocation Advanced data structures: linked lists, trees, and graphs . Advanced C++ Features: Standard Template Library (STL): containers, algorithms, and iterators Smart pointers and memory management Lambda expressions and functional programming in C++ Move semantics and rvalue references.	6
3	Software Design Principles: Design patterns: creational, structural, and behavioral patterns Object-oriented design principles: SOLID principles Code refactoring and optimization techniques Debugging strategies and tools. Application Development with C/C++: Systems programming with C/C++: file I/O, processes, and threads Network programming and socket programming Introduction to game development with C/C++ Developing cross-platform applications with C/C++.	6
4	Security and Best Practices: Common security vulnerabilities in C/C++ programs Secure coding practices and defensive programming Memory safety and buffer overflow prevention Code reviews and static code analysis tools. Project Development: Group project: Design and develop a C/C++ application from scratch Apply concepts learned throughout the course Collaborate with team members to implement features and functionality Present the final project to the class.	6

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5	Mini project : Customer billing system, Bank management system, Student Record system.	6
6	Mini project : Sales management system, Payroll management system.	6
TOTAL INSTRUCTIONAL HOURS		36

Course Outcome:

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

1. Students will develop a strong proficiency in programming using the C and C++ languages, including understanding the syntax, semantics, and core concepts of each language.
2. Students will learn software design principles and best practices for developing efficient, maintainable, and scalable C and C++ programs.
3. Students will develop skills in debugging and troubleshooting C and C++ programs, including diagnosing runtime errors, memory leaks, and logical errors, using debugging tools and techniques.

Reference Books

1. "C Programming Absolute Beginner's Guide" by Greg Perry and Dean Miller
2. "C++ Primer" by Stanley B. Lippman, Josée Lajoie, and Barbara E. Moo
3. "Accelerated C++: Practical Programming by Example" by Andrew Koenig and Barbara E. Moo


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Department of Computer Science and Engineering

VALUE ADDED COURSE -SYLLABUS

Academic Year	2023 -2024	Period of Batch	2021- 2025
Course Code	21CSVC05	Semester	V
Name of the Value added Course	Interactive Web Designing		
Faculty Coordinator	Mr.K.Ravikumar		
Date(s)	16.08.2023 to 22.08.2023		
Hours	36 hrs		

Interactive Web Designing

Course Objectives:

- To introduce the fundamentals of Internet, and the principles of web design.
- To construct basic websites using HTML and Cascading Style Sheets.
- To build dynamic web pages with validation using Java Script objects and by applying different event handling mechanisms.

Module	Description	Instructional Hours
1	HTML5,CSS and Hyberlinks Headers Para a hs,CSS Introduction- Selectors – Structuring Text in HTML – Text Formatting, Inline vs Internal vs External Styling – Lists, Images, Hyperlinks,Tables- CSS Display – CSS Backgrounds, Borders, Margins, Padding – CSS Font Styling – Styling Lists – Styling Tables, Forms – Anchor Tags - Divs	6
2	HTML Forms and Styling Forms – Form attributes, styling – Form Elements – Input Types – Input Attributes – Input Form Attributes	6
3	CSS 3 Animations Transitions, Transformations, Animations – Box Sizing – Flex – Animation & Transformation, Positioning	6
4	Introduction to JavaScript Introduction – Variables, Scoping, Datatypes - Strings and Numbers – Operators and Loops - Functions	6
5	DOM and BOM DOM – BOM – Developers Tools in Web Browsers	6
6	Project and Recap Assigning a Small project that integrates the learned concepts (e.g web page with database connectivity and dynamic content) – Project development and implementation – Recap of key topics and review any difficult areas	6
TOTAL INSTRUCTIONAL HOURS		36



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1. Describe the concepts of World Wide Web, and the requirements of effective web design.
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