MADHAV INSTITUTE OF TECHNOLOGY AND SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous& NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Finishing School Program (Online Internship)-2020

Name of Department	**Department of CSE/ IT**
Module Name	**Applied Computational Skills**
Module Coordinators	**1. Dr. R.S. Jadon** **2. Dr. Anshu Chaturvedi** **3. Prof. Prabhakar Sharma** **4. Prof. Parul Saxena**
Module Objective	Computational skills are required almost in all type of engineering applications. The objective of this module to make students student aware of various programming paradigms. Various modules of the programme are designed on workshop philosophy to provide hands-on practice sessions for participants.
Module Content	Four important programming skills are included in the course. Concepts of structured query language(SQL) will be demonstrated through My-SQL. Java programming and .NET programming will be illustrated through their respective frameworks along with the database connectivity and web-based application development. IoT i.e Internet of Things will be illustrated through Aurdino IDE and Ardino Controller. Artificial Intelligence and machile learning will cover Python programming using Numpy and Panda's library.
Module Methodology	The Programme will cover mostly the applied aspects of programming. Throughout the execution of programme various styles of programming, firstly the theoretical aspects of programming will be discussed and then the hands-on programming will be done. The participants need to install My-SQL, JDK and .NET, Aurdino, Pycharm and Python.
Module Outcome/ Impact	● Understand the basic philosophy of various programming styles. ● Understand the syntax and semantics of various programming languages. ● Understanding the process customizing and configuring various programming tools and techniques. ● Able to develop classical programs using various programming languages..

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Duration	**4 Weeks (20 days)**

Day Wise Schedule

	Date	Day	Module Contents to be covered/Interactive Session/Assignment/Quiz/Exercises/Daily practice sheets (DPP)/Tutorial/Project etc (10:00 AM onward, 2-4 Hrs/ Day)	Faculty
Week 1	**19/05/2020**	**Tue**	**Introduction of DBMS, various view of data, data independence, schema and sub-schema.**	**Prof. Parul Saxena**
	20/05/2020	**Wed**	**ER model: basic concepts, design issues, mapping constraint, keys, ER diagram, weak and strong entity sets.**	**Prof. Parul Saxena**
	21/05/2020	**Thu**	**Domains, Relations and Keys: domains, relations, kind of relations, relational database, various types of keys, candidate, primary, alternate and foreign keys.**	**Prof. Parul Saxena**
	22/05/2020	**Fri**	**Relational Algebra & SQL: basic structure of SQL, set operations, aggregate functions, null values, nested sub queries, derived relations, views, modification of Database, join relations, DDL in SQL.**	**Prof. Parul Saxena**
	23/05/2020	**Sat**	**Functional Dependencies and Normalization and hand on for SQL and DBMS Connectivity**	**Prof. Parul Saxena**
Week 2	**25/05/2020**	**Mon**	**Introduction: Basics of .NET framework, Application execution in the .net framework, Exploring Visual Studio. Net and its IDE, error handling and debugging.**	**Prof. Prabhakar Sharma**
	26/05/2020	**Tue**	**Visual C#.NET:: Basics, arrays, classes, their properties, methods and events, indexers, Inheritance**	**Prof. Prabhakar Sharma**
	27/05/2020	**Wed**	**Creating Window Applications in Visual C#.NET:Basics of window applications, various controls and classes, their properties, methods**	**Prof. Prabhakar Sharma**

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			and events, CommonDialog Class, Window Services-Basic, life cycle, type of services, creating, installing and administering.	
	28/05/2020	Thu	ASP.NET: Introduction to web-programming, creating simple web form application using ASP.NET, working with web objects, creating user interfaces, storing and retrieving data with ADO.NET.	Prof. Prabhakar Sharma
	29/05/2020	Fri	Introduction: Basics of .NET framework, Application execution in the .net framework, Exploring Visual Studio. Net and its IDE, error handling and debugging	Prof. Prabhakar Sharma
Week 3	01/06/2020	Mon	Introduction to IOT-Characteristics, Evolution, Applications, Baseline technologies	Dr. Anshu Chaturvedi
	02/06/2020	Tue	IOT Connecting technologies, IOT Components, Sensors, Types of sensors, Actuators etc. IOT Categories, IOT Networking, , Interdependencies, IOT SOA,	Dr. Anshu Chaturvedi
	03/06/2020	Wed	Connectivity, Protocols and technologies:AMQP,MQTT,COAP,XMPP, wireless HART, NFC Zigbee, 6LowPAN, Routing	Dr. Anshu Chaturvedi
	04/06/2020	Thu	Introduction to python programming, Introduction to Raspberry Pi	Dr. Anshu Chaturvedi
	05/06/2020	Frit	Various Implementation of IoT with Raspberry Pi, Case Studies.	Dr. Anshu Chaturvedi
Week 4	08/06/2020	Mon	Introduction to Artificial Intelligence, Production Systems and control Strategies	Dr. R.S. Jadon
	09/06/2020	Tue	Knowledge representation, Predicate calculus and Inferencing, Basics of Python Programming with Hands-on session	Dr. R.S. Jadon
	10/06/2020	Wed	Soft computing techniques, fuzzy logic, neural networks and genetic algorithms, usge of python libraries numpy and panda	Dr. R.S. Jadon
	11/06/2020	Thu	Machine learning, Supervised learning, Unsupervised learning and reinforcement learning , Implementation in python	Dr. R.S. Jadon
	12/06/2020	Fri	Case studies for machine learning for various standard datasets.	Dr. R.S. Jadon
Module Coordinators			1. 1) Dr. R.S. Jadon: rsjadon@mitsgwalior.in, 9425122675 2. Dr. Anshu Chaturvedi: anshu_chaturvedi@mitsgwalior.in, 9425337699	

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Email Id and Mobile Number	3. **Prof. Prabhakar Sharma: psharma70@mitsgwalior.in, 9425339330** 4. **Prof. Parul Saxena: gaurparul2007@mitsgwalior.in, 7999365547**

Eligibility and Important Instructions :-

1. The Online Finishing School Program (Online training/Internship) is designed only for Pre-final & Final Year students of Electrical Engineering Department.

2. The students may apply online.

3. The Online Finishing School Program/ Summer Internship Program is free for the participants of Pre-final & Final year students of MITS, Gwalior.

4. The participants outside the Institute may also join the Program on payment basis.

5. This online module will be conducted under the Finishing School Program which will be considered equivalent to Online Internship of Pre-final year students who could not get any Internship during this situation.

6. Duration of this program will be of four weeks which is equivalent to summer Internship period as per AICTE and our Institute policy. Daily no. of hours of online training may be flexible.

7. Certificates will be issued to candidates who have attendance 75% or more and also score more than 60% in the test.