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

Finishing School Program (Online Internship)-2021

Name of Department	**Department of Computer Science and Engineering**
Module Name	**Applied and Intelligent Computational Skills**
Module Coordinators	**1. Dr. R.S. Jadon** **2. Dr. Anshu Chaturvedi**
Module Objective	Computational skills are required in almost all types of engineering applications. The objective of this module is to make students 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	Two important applied and intelligent computing skills are included in the course: Artificial intelligence and machine learning and IoT(Internet of Things). Artificial Intelligence and machine learning will cover Python programming using Numpy and Panda's library. IoT i.e Internet of Things will be illustrated through Aurdino IDE and Ardino Controller.
Module Methodology	Intelligent computing is based on artificial intelligence while Iot is based on connectivity and sensors. Throughout the execution of the program various applied aspects of intelligent and Iot programming will be taught in illustrative manner. Firstly the theoretical aspects of programming will be discussed and then the hands-on programming will be done. The participants need to install Aurdino, Pycharm and Python.
Module Outcome/ Impact	● Understand the basic philosophy of intelligent computing using knowledge based systems.. ● Understand the syntax and semantics of python programming language. ● Understanding the process customizing and configuring various programming tools and techniques. ● Able to develop classical programs using the acquired concepts..
Duration	**3 Weeks (15 days)**

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Day Wise Schedule				
	Date	**Day**	**Module Contents to be covered/Interactive Session/Assignment/Quiz/Exercises/Daily practice sheets (DPP)/Tutorial/Project etc (3.00 to 5.00PM)**	**Faculty**
Week 1	**14/05/2021 3.00-5.00PM**		**Introduction to Artificial Intelligence, Production Systems and control Strategies**	**Dr. R.S. Jadon Dr. Anshu Chaturvedi**
	15/05/2021 3.00-5.00PM		**Knowledge representation, Predicate calculus and Inferencing, Basics of Python Programming with Hands-on session**	**Dr. R.S. Jadon**
	16/05/2021 3.00-5.00PM		**Soft computing techniques, fuzzy logic, neural networks and genetic algorithms, Python Programming hands on and usage of python libraries numpy and panda**	**Dr. R.S. Jadon**
	17/05/2021 3.00-5.00PM	**Mon**	**Hybrid Soft Computing with illustration for computer vision and image processing. hands on python using various libraries.**	**Dr. R.S. Jadon**
	18/05/2021 3.00-5.00PM	**Tue**	**Introduction to Machine learning, Supervised learning illustration in python, Unsupervised learning and reinforcement learning , Implementation in python**	**Dr. R.S. Jadon**
Week 2	**19/05/2021 3.00-5.00PM**	**Wed**	**clustering and Unsupervised learning illustration in python, hands on in python.**	**Dr. R.S. Jadon**
	20//05/20213.00 -5.00PM	**Thu**	**Reinforcement learning and illustration in python.**	**Dr. R.S. Jadon**
	21//05/2021 3.00-5.00PM	**Fri**	**Hands on in machine learning using python using various standard datasets.**	**Dr. R.S. Jadon**
	22/05/2021 3:00-5:00 PM	**Sat**		**Dr. R.S. Jadon**
	23/05/2021 3:00-5:00 PM	**Sun**	**Introduction to IOT-Characteristics, Evolution, Applications, Baseline technologies**	**Dr. Anshu Chaturvedi**
	24/05/2021 3:00-5:00 PM	**Mon**	**IOT Connecting technologies, IOT Components, Sensors, Types of sensors, Actuators etc.**	**Dr. Anshu Chaturvedi**

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Week 3	**25/05/2021 3:00-5:00 PM**	**Tue**	**IOT Categories, IOT Networking, , Interdependencies, IOT SOA,**	**Dr. Anshu Chaturvedi**
	26/05/2021 3:00-5:00 PM	**Wed**	**Connectivity, Protocols and technologies:AMQP,MQTT,COAP,XMPP,**	**Dr. Anshu Chaturvedi**
	27/05/2021 3:00-5:00 PM	**Thu**	**wireless HART, NFC Zigbee, 6LowPAN, Routing**	**Dr. Anshu Chaturvedi**
	28/5/2021 3:00-5:00 PM	**Fri**	**Introduction to python programming, Introduction to Raspberry Pi**	**Dr. Anshu Chaturvedi**
	29/5/2021 3:00-5:00 PM	**Sat**	**Various Implementation of IoT with Raspberry Pi,**	**Dr. Anshu Chaturvedi**
	30/5/2021 3:00-5:00 PM	**Sun**	**Case Studies.**	**Dr. Anshu Chaturvedi**
Module Coordinators Email Id and Mobile Number			**1. 1) Dr. R.S. Jadon: rsjadon@mitsgwalior.in, 9425122675** **2. Dr. Anshu Chaturvedi: anshu_chaturvedi@mitsgwalior.in, 9425337699**	

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