

**Dr. A.P.J. Abdul Kalam Technical University,
Uttar Pradesh, Lucknow**



SYLLABUS

FOR

M.TECH. (Automation and Robotics)

[Effective from the Session:2016-17]

Dr. A.P.J. Abdul Kalam Technical University, Lucknow, Uttar Pradesh

**Study and Evaluation Scheme
M.Tech- Automation and Robotics**

(Effective from session 2016-17)

SEMESTER-I

S.No	Subject Code	Name of Subject	Periods			Credits	Evaluation Schemes					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTAR 101	Industrial Automation	3	0	0	3	20	10	70	...	...	100
2	MTAR 102	Robotics : Analysis & Systems	3	0	0	3	20	10	70	...	...	100
3		Departmental Elective- I	3	0	0	3	20	10	70	...	...	100
4		Departmental Elective- II	3	0	0	3	20	10	70	...	...	100
5		Research Process & Methodology	3	0	0	3	20	10	70	...	...	100
6	MTAR 151	Lab - I	..	..	3	2	...	...	...	20	30	50
7	MTAR 152	Lab - II	..	..	2	1	...	...	...	20	30	50
		Total				18						600

Departmental Elective-1:

MTAR 011: Introduction to Mechanical Engineering

MTAR 012: Introduction to Electronics & Electrical Engineering

Departmental Elective-II:

MTAR 021: Sensors Application in Manufacturing

MTAR 022: Microprocessor & Microcontroller

MTAR 023: Mechatronics

MTME 011: CAD/ CAM

SEMESTER-II

S.No	Subject Code	Name of Subject	Periods			Credits	Evaluation Schemes					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTAR 201	Drives & Control system for Automation	3	0	0	3	20	10	70	...	...	100
2	MTAR 202	Advance Computer Concept for Automation	3	0	0	3	20	10	70	...	...	100
3		Departmental Elective- III	3	0	0	3	20	10	70	...	...	100
4		Departmental Elective- IV	3	0	0	3	20	10	70	...	...	100
5		Departmental Elective- V	3	0	0	3	20	10	70	...	...	100
6	MTAR 251	Lab - III	..	..	3	2	...	...	...	20	30	50
7	MTAR 252	Seminar - I	..	..	2	1	...	...	...	50	...	50
		Total				18						600

Departmental Elective– III:

MTAR 031: Virtual Instrumentation

MTAR 032: Artificial Intelligence & Expert System in Automation

MTAR 033: Robotics & Control

MTAR 034: Simulation, Modeling & Analysis

Departmental Elective-IV:

MTAR 041: Pneumatic & Hydraulic Control

MTAR 042: Process Control & Automation

MTAR 043: Design of Mechanisms and Manipulators

MTME 041: Optimization Techniques & Design of Experiments

Departmental Elective-V:

MTAR 051: Numerical Methods & Computer Programming

MTME 051: Flexible Manufacturing Systems

MTME 052: Machine Vision

MTME 053: Additive Manufacturing & Tooling

SEMESTER - III

Semester- III												
S.No	Subject Code	Name of Subject	Periods			Credits	Evaluation Schemes					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTAR 351	Seminar-II	0	0	6	3	...	...	...	100	...	100
2	MTAR 352	Dissertation	0	0	30	15	...	...	...	200	300	500
		Total				18						600

SEMESTER - IV

Semester- IV												
S.No	Subject Code	Name of Subject	Periods			Credits	Evaluation Schemes					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTAR 451	Dissertation(Final)	0	0	36	18	...	...	...	200	400	600
		Total				18						600

Note: The Dissertation Work for M.Tech consists of Dissertation Work – I and Dissertation Work– II. Students are required to undertake research work related to latest developments in the field of Automation & Robotics with multidisciplinary background and innovative concept. For students desirous of seeking career in industry, may take up industry sponsored projects or application oriented project i. e. developing a complex application which does not already exist, or by enhancing some existing application or method to improve its functionality, performance for immediate use of industry, as equivalent to the theoretical research work towards M.Tech dissertation