



**Bharath**  
INSTITUTE OF HIGHER EDUCATION AND RESEARCH  
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

Date: 05.08.2019

**Department of Mechatronics**

**Circular**

The Department of Mechatronics, BIHER is glad to conduct a 5 - days Value Added Program on “**Course on Robot Grasping**” dated from 12.08.2019 to 17.08.2019 for a period of 30 hours. Those who are interested to participate do register your name with the program coordinator mentioned below.

**Resource persons:**

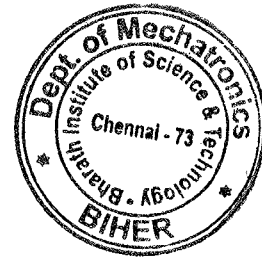
**Dr.P. Sengottuvel,**  
HOD & Professor,  
BIHER

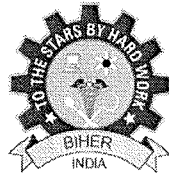
**Mr.Alagar,**  
Asst Engineer,  
443, Anna Salai, Teynampet,  
Chennai, Tamil Nadu 600018  
Maximum No. of registration Allowed – 60

**\*First come first serve basis.**

**Program Coordinator:**

Mr.M.Chandra Mohan  
Assistant Professor  
Mrs.G.Vasumathi  
Assistant Professor,  
**E-Mail: vasumathi.mt@bharathuniv.ac.in**  
**Mobile: 9788644964**





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## Department of Mechatronics

### Course on Robot Grasping

#### OBJECTIVES:

The objective of this course to introduce the basic concepts and components of robotics .To learn the Robot Grasping and machine vision concepts based on Image Processing Techniques

#### [DAY:1] MODULE I

(6 Hrs)

Robotics – Introduction–Basic Structure– Classification of robot and Robotic systems robot motions – work space, precision of movement. Drives and control systems: Hydraulic systems, power supply – servo valve – sump – hydraulic motor – DC servo motors – stepper motors – operation.

#### [DAY: 2] MODULE II

(6 Hrs)

Mechanical Components of Robots: Power transmission systems: Gear transmission. Belt drives, cables, Roller Chains, Link – Road Systems, Rotary to linear motion conversion, Rack and pinion drives, ball bearing screws, speed reducers, Harmonic drives.

#### [DAY: 3] MODULE III

(6 Hrs)

Introduction, Matrix Representation, Homogeneous transformation, forward and inverse Kinematics, Inverse Kinematics Programming, Degeneracy, dexterity, velocity and static forces, velocity transformation force control systems, Basics of Trajectory planning.

#### [DAY: 4] MODULE IV

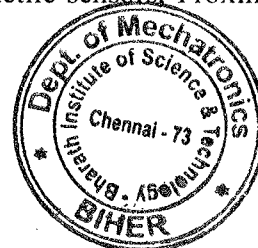
(6 Hrs)

Types of end effectors – Mechanical grippers – Types of Gripper mechanisms – Grippers force analysis – Other types of Grippers – Vacuum cups – Magnetic Grippers – Adhesive Grippers – Robot end effector interface.






#### [DAY: 5] MODULE V:

(6 Hrs)

Sensors: Position sensors – Potentiometers, encoders – LVDT, Velocity sensors, Acceleration Sensors, Force, Pressure and Torque sensors, Touch and Tactile sensors, Proximity, Range and sniff sensors, RCC, VOICE recognition and synthesizers.



# Model Certificate

			<b>Bharath</b>		
<small>INSTITUTE OF HIGHER EDUCATION AND RESEARCH</small>					
<b>BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY</b>					

**CERTIFICATE OF PARTICIPATION**

*This is to certify that*

*Prof./Dr./Mr./Ms. ....*

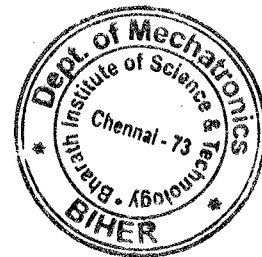
*of*

**BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY, BIHER, CHENNAI.**

*He /She has Participated in a Value Added Program on "Course on Robot Grasping" organized by the School of Mechanical Sciences, Department of Mechatronics, on 12<sup>th</sup> to 18<sup>th</sup> August 2019.*

**BIHER INDIA**

<b>Coordinator</b> Mr.M.Chandra Mohan	<b>Convener</b> Dr.P.Sengottuvel	<b>Dean-Engineering</b> Dr.J.Hameed Hussain
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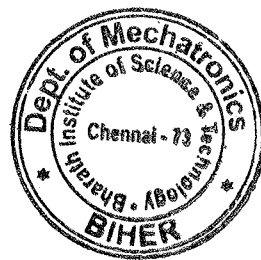
### Value Added Course - Course on Robot Grasping

#### Participants List

S.No	Reg.No	Name	Department
1.	U17MT023	PRAVEEN R	Mechatronics
2.	U17MT024	MANIKANDAN V	Mechatronics
3.	U17MT026	MADUGULA BALACHANDRA	Mechatronics
4.	U17MT027	ALEX ANTO	Mechatronics
5.	U17MT028	HEMALATHA G	Mechatronics
6.	U17MT029	PRAKASH RAJ S	Mechatronics
7.	U17MT031	SYED SAMSUDEEN I	Mechatronics
8.	U17MT032	LAKKIREDDY PAVAN KALYAN REDDY	Mechatronics
9.	U17MT033	KARTHIK Y M	Mechatronics
10.	U17MT034	JONNALAGADDA GOPALA KRISHNA MOHAN RAO	Mechatronics
11.	U17MT035	HARIHARAN E	Mechatronics
12.	U17MT036	SUSHIL KUMAR PASAWAN	Mechatronics
13.	U17MT037	DINESH N	Mechatronics
14.	U17MT038	DHARANIDHARAN J	Mechatronics
15.	U17MT039	SAGADEVAN G	Mechatronics
16.	U17MT040	NIZAMUDEEN A	Mechatronics

17.	U17MT042	METHIL KRISHNAN A H	Mechatronics
18.	U17MT044	BADDITI YESOBU	Mechatronics
19.	U17MT045	ABDUL RAHAMAN S	Mechatronics
20.	U17MT046	VIGNESHWARAN V	Mechatronics
21.	U17MT048	PALANIYAPPAN S	Mechatronics
22.	U17MT049	NIKHILANTONY K J	Mechatronics
23.	U17MT050	THIRUMURUGAN G	Mechatronics
24.	U17MT051	BOLLEDDU RAVI TEJA .	Mechatronics
25.	U17MT052	SATHISH KUMAR S	Mechatronics
26.	U17MT053	GOKULAKRISHNAN U	Mechatronics
27.	U17MT054	VASANTH S	Mechatronics
28.	U17MT055	YOKESH RAJ V	Mechatronics
29.	U17MT056	SURYA PRAKASH N	Mechatronics
30.	U17MT057	SREE MUKESH R V	Mechatronics
31.	U17MT058	NAGARAJ P	Mechatronics
32.	U17MT059	RAKKESH ARAVIND G	Mechatronics
33.	U17MT060	DINESHKUMAR S	Mechatronics
34.	U17MT061	MOHAMMED ABBAS A	Mechatronics
35.	U17MT501	ADITHIYA M	Mechatronics
36.	U17MT502	MUTHU VIJAY RAJA V	Mechatronics
37.	U17MT503	DISHAN ASIR RAJ R	Mechatronics
38.	U17MT504	ARAVIND K	Mechatronics
39.	U17MT701	KEERTHIVASAN G	Mechatronics
40.	U17MT703	KOLLATI NAGA SIVA .	Mechatronics

41.	U18MT020	DOSURI VENKATA NAGA RAMA NIRMAL .	Mechatronics
42.	U18MT021	M LAKHAN PUROHIT .	Mechatronics
43.	U18MT022	JITENDER SUTHAR .	Mechatronics
44.	U18MT023	SHAIK AMEER .	Mechatronics
45.	U18MT024	KOTELLA PRATHAP REDDY .	Mechatronics
46.	U18MT025	SANGAL DHARUV ALOK .	Mechatronics
47.	U18MT026	BALA MURUGAN P	Mechatronics
48.	U18MT028	S AKASH .	Mechatronics
49.	U18MT029	GARAPATI NAGA VEERA VENKATA DURGA PRASAD	Mechatronics
50.	U18MT030	CHILUKURI V D R SURYA CHOWDARY .	Mechatronics
51.	U18MT031	SENGUTTUVAN A .	Mechatronics
52.	U18MT032	ASLAM HAMEED N .	Mechatronics
53.	U18MT033	MOHAMED NAFIL B	Mechatronics
54.	U18MT034	ROHITH JOSEPH S .	Mechatronics
55.	U18MT501	VIGNESH S	Mechatronics
56.	U18MT701	KARTHIKEYAN M	Mechatronics
57.	U18MT702	AJITH S	Mechatronics
58.	U18MT703	JAINUL AHAMEDSHA A	Mechatronics
59.	U18MT704	MOHAMMAD RIYAZ M	Mechatronics
60.	U18MT705	SHALISHWARAN T	Mechatronics





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Value added course on Course on Robot Grasping

