



Indra Ganesan

COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION – 1

CURRICULAR ASPECTS

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL

INDRA GANESAN COLLEGE OF ENGINEERING





DEPARTMENT OF ELECTRICAL AND ELECTRIC ENGINEERING

ACADEMIC YEAR 2019-2020 / ODD SEMESTER

1.2 Academic Flexibility (30)

1.2.1 Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)

AND

1.2.2 Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years

| | | | | | |
|------------------------------|---|------------------|-------------------|------------------------------------|-----------------|
| VAC Title: | AUTOMATION AND ROBOTICS | | | | |
| Resource Person: | Dr.M.ABBAS, DESIGN ENGINEER, SRI SAI SOFTWARE. | | | | |
| Date of conduct from: | 09.12.2019 | To: | 13.12.2019 | Duration: | 30 Hours |
| Organized Department: | ELECTRICAL AND ELECTRIC ENGINEERING | | | | |
| Participant Year: | EEE- IV, III, II | Semester: | ODD | No. of Students Registered: | 63 |
| Venue: | EEE- III Year Class Room,IGCE | | | | |

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Indra Ganesan

COLLEGE OF ENGINEERING
Madurai Main Road (NH-45B), Manikandam, Trichy-12.
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Department of Electrical and Electronics Engineering
Academic Year 2019-2020 –Odd Semester

04.12.2019

DEPARTMENT CIRCULAR

Department of Electrical and Electronics Engineering and IQAC of IGCE in association with Sri Sai Software is going to organize Value Added Course for all Second, Third and Final year students on “Automation and Robotics” from 09.12.2019 to 13.12.2019. Certificates will be issued to the eligible participants at the end of the Course. This training is to be provided in our campus.

| | |
|------------------------|---|
| Resource Person Detail | 1. Dr.M.Abbas, Design Engineer, Sri Sai Software. |
| Venue | EEE III yr Classroom, IGCE |

G. Ma Lathi

HOD/EEE

[Signature]
PRINCIPAL

Cc:

- Principal office
- IQAC Co-Ordinator
- Class In charges - II, III & IV-Year
- II, III & IV-Year EEE Students
- Office File
- Notice Board

[Signature]
Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.



Value Added Course


“Automation and Robotics”

SYLLABUS

| S.NO | TOPIC COVERED | DURATION (in hours) | DATE |
|-------------------------------------|-------------------------------------|------------------------|------------|
| 1 | Introduction to robots and robotics | 3 | 09.12.2019 |
| 2 | Robots kinematics | 3 | 09.12.2019 |
| 3 | Robots kinematics | 3 | 10.12.2019 |
| 4 | Trajectory planning | 3 | 10.12.2019 |
| 5 | Singularity checking | 3 | 11.12.2019 |
| 6 | Robots dynamics | 3 | 11.12.2019 |
| 7 | Control scheme, Sensors | 3 | 12.12.2019 |
| 8 | Robot vision | 3 | 12.12.2019 |
| 9 | Robot motion planning | 3 | 13.12.2019 |
| 10 | Intelligent robot and Automation | 3 | 13.12.2019 |
| 11 | Exam | 1 | 13.12.2019 |
| Total Hours (Excluding Test) | | 30 | - |


VAC Coordinator


HOD/EEE


Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.



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Value Added Course

“Automation and Robotics”

STUDENTS PARTICIPATION LIST

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal

Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

| S.NO | REG NO | STUDENTS NAME | YEAR/ BRANCH |
|------|--------------|-------------------|-----------------|
| 1 | 811216105001 | ATTCHAYA A K | IV/EEE |
| 2 | 811216105003 | BENAZIR M | IV/EEE |
| 3 | 811216105004 | GUNA SEELAN D | IV/EEE |
| 4 | 811216105005 | HARI GOWTHAM M | IV/EEE |
| 5 | 811216105006 | HARIHARAN B | IV/EEE |
| 6 | 811216105007 | ISWARYA K | IV/EEE |
| 7 | 811216105008 | KALISTA P | IV/EEE |
| 8 | 811216105009 | KHAJAMOINUDEEN S | IV/EEE |
| 9 | 811216105010 | KIRUTHIKA B | IV/EEE |
| 10 | 811216105011 | LOURDHU MARY D | IV/EEE |
| 11 | 811216105012 | MARIA SHOBANA J | IV/EEE |
| 12 | 811216105014 | MERLIN REETA P | IV/EEE |
| 13 | 811216105015 | NIROSHINI R | IV/EEE |
| 14 | 811216105016 | NITHING A | IV/EEE |
| 15 | 811216105017 | PAVENTHAN A | IV/EEE |
| 16 | 811216105018 | PRAVEEN KUMAR M | IV/EEE |
| 17 | 811216105019 | PRISILLA PRIYANKA | IV/EEE |
| 18 | 811216105020 | RAJA V | IV/EEE |
| 19 | 811216105021 | RATHINA RAJ R | IV/EEE |
| 20 | 811216105023 | RESHMI D | IV/EEE |



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| S.NO | REG NO | STUDENTS NAME | YEAR/ BRANCH |
|------|--------------|------------------|-----------------|
| 21 | 811216105024 | ROOBINI S | IV/EEE |
| 22 | 811216105025 | SURESH K | IV/EEE |
| 23 | 811216105026 | SURIYA PRAKASH K | IV/EEE |
| 24 | 811216105027 | TAMILARASAN M | IV/EEE |
| 25 | 811216105028 | TAMILAZHAGAN M | IV/EEE |
| 26 | 811216105029 | VINOTH R | IV/EEE |
| 27 | 811216105302 | PARKAVI S | IV/EEE |
| 28 | 811217105005 | ARUL JOY ASHA A | III/EEE |
| 29 | 811217105006 | ARUN SEBASTIN P | III/EEE |
| 30 | 811217105007 | BHARTHASARATHI M | III/EEE |
| 31 | 811217105008 | CHITHRA P | III/EEE |
| 32 | 811217105009 | DEEPIKA G | III/EEE |
| 33 | 811217105010 | EZHUMALAI A | III/EEE |
| 34 | 811217105011 | GAYATHRI K | III/EEE |
| 35 | 811217105012 | GAYATHRI S | III/EEE |
| 36 | 811217105013 | KANIMOZHI S | III/EEE |
| 37 | 811217105014 | KEERTHANA S | III/EEE |
| 38 | 811217105015 | KUMARIVALLI T | III/EEE |
| 39 | 811217105016 | MADHUMITHA S | III/EEE |
| 40 | 811217105017 | MANO K | III/EEE |
| 41 | 811217105018 | MEKALA M | III/EEE |
| 42 | 811217105020 | PAVITHRA S | III/EEE |
| 43 | 811217105021 | PRAVEEN RAJ R | III/EEE |
| 44 | 811217105022 | RAJASEKAR.N V | III/EEE |


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| S.NO | REG NO | STUDENTS NAME | YEAR/ BRANCH |
|------|--------------|--------------------|-----------------|
| 45 | 811217105023 | REVATHI P | III/EEE |
| 46 | 811217105024 | RISHON GURU M | III/EEE |
| 47 | 811217105026 | SANTHOSH K | III/EEE |
| 48 | 811217105027 | SRIKUMAR M S | III/EEE |
| 49 | 811217105028 | SRI LOGESH C | III/EEE |
| 50 | 811217105029 | SUBHA T | III/EEE |
| 51 | 811217105031 | VALARMATHI C C | III/EEE |
| 52 | 811217105032 | VISWANATH R | III/EEE |
| 53 | 811217105301 | SANJEEV KUMAR R | III/EEE |
| 54 | 811218105001 | ARUN PRAVEEN RAJ A | II/EEE |
| 55 | 811218105002 | HARIHARAN M | II/EEE |
| 56 | 811218105003 | INBARAJ A | II/EEE |
| 57 | 811218105004 | JEYA STEPHEN S | II/EEE |
| 58 | 811218105005 | MANIKANDAN N | II/EEE |
| 59 | 811218105006 | PADMANABAN A | II/EEE |
| 60 | 811218105007 | SASIKUMAR R | II/EEE |
| 61 | 811218105008 | SIVAKUMAR P | II/EEE |
| 62 | 811218105009 | VEERA RAGAVAN A | II/EEE |
| 63 | 811218105010 | YUVARAJ S | II/EEE |


VAC Coordinator




HOD/EEE

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Department of Electrical and Electronics Engineering

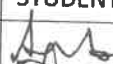
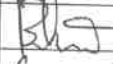
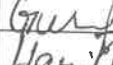
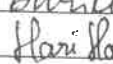
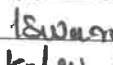
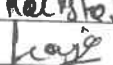
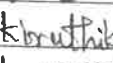
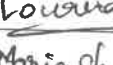
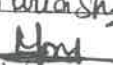
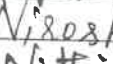
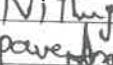


Academic Year 2019-2020 – Odd Semester

STUDENTS ATTENDANCE LIST

Value Added Course

“Automation and Robotics”


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|------|--------------|------------------|-----------------|------------|----|------------|----|------------|----|------------|----|------------|----|-------------------------------|---|
| | | | | FN | AN | FN | AN | FN | AN | FN | AN | FN | AN | | |
| 1 | 811216105001 | ATTCHAYA K | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 |  |
| 2 | 811216105003 | BENAZIR M | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 |  |
| 3 | 811216105004 | GUNA SEELAN D | IV/EEE | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 |  |
| 4 | 811216105005 | HARI GOWTHAM M | IV/EEE | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | 9 |  |
| 5 | 811216105006 | HARIHARAN B | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | a | a | ✓ | ✓ | 9 |  |
| 6 | 811216105007 | ISWARYA K | IV/EEE | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 8 |  |
| 7 | 811216105008 | KALISTA P | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 |  |
| 8 | 811216105009 | KHAJAMOINUDEEN S | IV/EEE | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 |  |
| 9 | 811216105010 | KIRUTHIKA B | IV/EEE | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 |  |
| 10 | 811216105011 | LOURDHU MARY D | IV/EEE | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 |  |
| 11 | 811216105012 | MARIA SHOBANA J | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 |  |
| 12 | 811216105014 | MERLIN REETA P | IV/EEE | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 |  |
| 13 | 811216105015 | NIROSHINI R | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 |  |
| 14 | 811216105016 | NITHING A | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | |
| 15 | 811216105017 | PAVENTHAN A | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | 9 | |

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|------|--------------|-------------------|-----------------|------------|----|------------|----|------------|----|------------|----|------------|----|-------------------------------|---------------------------|
| | | | | FN | AN | FN | AN | FN | AN | FN | AN | FN | AN | | |
| 16 | 811216105018 | PRAVEEN KUMAR M | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Praveen K |
| 17 | 811216105019 | PRISILLA PRIYANKA | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Prisilla Priyanka |
| 18 | 811216105020 | RAJA V | IV/EEE | ✓ | ✓ | a | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 8 | Raja V |
| 19 | 811216105021 | RATHINA RAJ R | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Rathina Raj |
| 20 | 811216105023 | RESHMI D | IV/EEE | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | Reshmi D |
| 21 | 811216105024 | ROOBINI S | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Roobini S |
| 22 | 811216105025 | SURESH K | IV/EEE | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | Suresh K |
| 23 | 811216105026 | SURIYA PRAKASH K | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | K. Surya Prakash |
| 24 | 811216105027 | TAMILARASAN M | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | M. Tamilarasan |
| 25 | 811216105028 | TAMILAZHAGAN M | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | M. Tamilazhagan |
| 26 | 811216105029 | VINOTH R | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | R. Vinoth |
| 27 | 811216105302 | PARKAVI S | IV/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | 9 | S. Parkavi |
| 28 | 811217105005 | ARUL JOY ASHA A | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | a | a | ✓ | ✓ | 8 | A. Asha |
| 29 | 811217105006 | ARUN SEBASTIN P | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | 9 | P. Arun |
| 30 | 811217105007 | BHARTHASARATHI M | III/EEE | a | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 8 | M. Bharthasathi |
| 31 | 811217105008 | CHITHRA P | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Chithra P |
| 32 | 811217105009 | DEEPIKA G | III/EEE | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | G. Deepika |
| 33 | 811217105010 | EZHUMALAI A | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Eshumalai A |
| 34 | 811217105011 | GAYATHRI K | III/EEE | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | K. Gayathri |
| 35 | 811217105012 | GAYATHRI S | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | S. Gayathri |
| 36 | 811217105013 | KANIMOZHI S | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | 9 | S. Kanimozhi |

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|------|--------------|--------------------|-----------------|------------|----|------------|----|------------|----|------------|----|------------|----|-------------------------------|---------------------------|
| | | | | FN | AN | FN | AN | FN | AN | FN | AN | FN | AN | | |
| 37 | 811217105014 | KEERTHANA S | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Spl... |
| 38 | 811217105015 | KUMARIVALLI T | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Kumarivalli T |
| 39 | 811217105016 | MADHUMITHA S | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Madhumitha S |
| 40 | 811217105017 | MANO K | III/EEE | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | Mano K |
| 41 | 811217105018 | MEKALA M | III/EEE | ✓ | ✓ | ✓ | ✓ | a | a | ✓ | ✓ | ✓ | ✓ | 8 | Mekala M |
| 42 | 811217105020 | PAVITHRA S | III/EEE | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | Pavithra S |
| 43 | 811217105021 | PRAVEEN RAJ R | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Praveen Raj R |
| 44 | 811217105022 | RAJASEKAR.N V | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | 9 | Rajasekar N V |
| 45 | 811217105023 | REVATHI P | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Revathi P |
| 46 | 811217105024 | RISHON GURU M | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Rishon Guru M |
| 47 | 811217105026 | SANTHOSH K | III/EEE | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | Santhosh K |
| 48 | 811217105027 | SRIKUMAR M S | III/EEE | ✓ | ✓ | a | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 8 | Srikumar M S |
| 49 | 811217105028 | SRI LOGESH C | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | a | a | ✓ | ✓ | 8 | Sri Logesh C |
| 50 | 811217105029 | SUBHA T | III/EEE | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | Subha T |
| 51 | 811217105031 | VALARMATHI C | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Valarmathi C |
| 52 | 811217105032 | VISWANATH R | III/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | 9 | Viswanath R |
| 53 | 811217105301 | SANJEEV KUMAR R | III/EEE | a | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 8 | Sanjeev Kumar R |
| 54 | 811218105001 | ARUN PRAVEEN RAJ A | II/EEE | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | Arun Praveen Raj A |
| 55 | 811218105002 | HARIHARAN M | II/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | M. Hariharan |
| 56 | 811218105003 | INBARAJ A | II/EEE | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | Inbaraj A |
| 57 | 811218105004 | JEYA STEPHEN S | II/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Jeya Stephen S |




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|------|--------------|-----------------|-----------------|------------|----|------------|----|------------|----|------------|----|------------|----|-------------------------------|----------------------------|
| | | | | FN | AN | FN | AN | FN | AN | FN | AN | FN | AN | | |
| 58 | 811218105005 | MANIKANDAN N | II/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Manikandan N |
| 59 | 811218105006 | PADMANABAN A | II/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Padmanaban A |
| 60 | 811218105007 | SASIKUMAR R | II/EEE | ✓ | ✓ | ✓ | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 | Sasikumar R |
| 61 | 811218105008 | SIVAKUMAR P | II/EEE | ✓ | ✓ | ✓ | ✓ | a | a | ✓ | ✓ | ✓ | ✓ | 8 | Sivakumar P |
| 62 | 811218105009 | VEERA RAGAVAN A | II/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | a | ✓ | ✓ | 9 | Veera Ragavan A |
| 63 | 811218105010 | YUVARAJ S | II/EEE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | Yuvaraj S |


VAC Coordinator


Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.


HoD/EEE



Indra Ganesan

COLLEGE OF ENGINEERING
Madurai Main Road (NH-45B), Manikandam, Trichy-12.
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Name of the Student:

Year/Sem:

AU Register Number:

Value Added Course

“Automation and Robotics”

MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

1. A place where power, information, or a result leaves a system
 1. Chassis
 2. Output
 3. Sensor
 4. Troubleshooting
2. Which of the following describes the a use of technology or machinery, specifically Involving gases?
 1. Pneumatics
 2. Hydraulics
 3. Actuation
 4. Carbonation
3. The position or alignment relative to points of the compass or other specific Directions.
 1. Loops
 2. Sensor
 3. Chassis
 4. Orientation
4. A mechanism having its motive power so concealed that it appears to move Spontaneously
 1. Automatic
 2. Clock Jack
 3. Robot
 4. Automata
5. The the branch of technology that deals with dimensions of microscopic proportion, is Known as?
 1. Nannytechnology
 2. Nanotechnology
 3. Microtechnology
 4. Micromachinery
6. Which of the following is not an advantage of Robots?
 1. They can assist humans with disabilities
 2. They can replace jobs
 3. They can be used in dangerous environment
 4. They don't get tired or require a break
7. The Hummingbird _____ require extra power to be able to work.
 1. Sensors
 2. LEDs
 3. Motors
 4. Tri-Color LEDs
8. The branch of technology that deals with the design, construction, operation, and Application of robots _____
 1. Levers
 2. Robotics
 3. Creative power
 4. Science CSF


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 3. Socialize with other group members and don't help your group
 4. Stay on task and work with other group members appropriately
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1. Exoskeleton
 2. Armor
 3. Endoskeleton
 4. Hardware
11. The 3rd law of robotics Spirit Isaac Asimov first announced the 3 laws of robotics in 1942.
1. A robot may not injure a human being or, through inaction, allow a human being to come to harm
 2. A robot can't go to school
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 4. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law
12. How many systems does a robot have?
1. 2
 2. 6
 3. 4
 4. 3
13. Engines and joints belong to what system?
1. Digestive system
 2. Sensory system
 3. Electric system
 4. Mechanic system
14. How many types of robots are there?
1. 7
 2. 10
 3. 6
 4. 8
15. What are the components of the electric system?
1. Electric joints and cables
 2. Batteries and electric wiring
 3. Engines and joints
 4. Thunder and lightning
16. How many components does the control system have?
1. 4
 2. 1
 3. 2
 4. 5
17. The processor belongs to the _____
1. Sensory system
 2. Mechanic system
 3. Electric system
 4. Control system
18. One of these is NOT a type of robot _____
1. Medical
 2. Industrial
 3. Household
 4. Apologetic

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19. The small mobile robot base used in the Robot Educator. This robot is able to perform some but not all of the tasks in the Robotics Engineering activities _____

1. Light sensor
2. Lego Mind storms Education Software
3. Robot
4. Robot Educator Model (REM)

20. A block is the basic unit of programming in the NXT programming Software. Blocks perform their operations in order along the Sequence Beam _____

1. Touch Sensor
2. Block (programming)
3. Ports
4. Behaviors

21. The primary source of physical motion in the Mind storms NXT system.

1. Interactive Servo Motor
2. Behaviors
3. Light Sensor
4. Touch Sensor

22. A machine that is able to interact with and respond to its environment characterized by three central capabilities: the ability to Sense, the ability to Plan, and the ability to Act _____

1. Code
2. Taskbot
3. Robots
4. Ports

23. The three characteristic capabilities that define a robot _____

1. Comment
2. Sensor
3. Sense-Plan-Act
4. NXT Brick

24. When working in a group for robotics, student's should _____

1. Socialize instead of work and then work alone
2. Stay on task and don't work with your group
3. Work alone and don't socialize with group members
4. Stay on task and work with group members appropriately

25. General term for any command or group of commands in a program. In the NXT Programming Software, this is one or more blocks _____

1. Comment
2. Code
3. Ports
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Manikandam, Trichy-620 012.




Value Added Course
“Automation and Robotics”

ANSWER KEY

| | | | | | | | | | |
|---|---|----|---|----|---|----|---|----|---|
| 1 | 2 | 6 | 2 | 11 | 3 | 16 | 2 | 21 | 1 |
| 2 | 1 | 7 | 3 | 12 | 3 | 17 | 4 | 22 | 3 |
| 3 | 4 | 8 | 2 | 13 | 3 | 18 | 4 | 23 | 3 |
| 4 | 4 | 9 | 4 | 14 | 4 | 19 | 4 | 24 | 4 |
| 5 | 2 | 10 | 3 | 15 | 2 | 20 | 2 | 25 | 2 |


VAC Coordinator


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Name of the Student: B. Kiruthika

Year/Sem: IV / VII

AU Register Number: 811216105010

Value Added Course

"Automation and Robotics"

MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

19/25

- A place where power, information, or a result leaves a system
 - Chassis
 - Output
 - Sensor
 - Troubleshooting
- Which of the following describes the a use of technology or machinery, specifically Involving gases?
 - Pneumatics
 - Hydraulics
 - Actuation
 - Carbonation
- The position or alignment relative to points of the compass or other specific Directions.
 - Loops
 - Sensor
 - Chassis
 - Orientation
- A mechanism having its motive power so concealed that it appears to move Spontaneously
 - Automatic
 - Clock Jack
 - Robot
 - Automata
- The the branch of technology that deals with dimensions of microscopic proportion, is Known as?
 - Nannytechnology
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 - Nanotechnology
 - Microtechnology
 -
- Which of the following is not an advantage of Robots?
 - They can assist humans with disabilities
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 - They don't get tired or require a break
- The Hummingbird _____ require extra power to be able to work.
 - Sensors
 - LEDs
 - Motors
 - Tri-Color LEDs
- The branch of technology that deals with the design, construction, operation, and Application of robots _____
 - Levers
 - Robotics
 - Creative power
 - Science CSF

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1. Exoskeleton
2. Armor
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2. 6
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13. Engines and joints belong to what system?

1. Digestive system
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3. Electric system
4. Mechanic

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15. What are the components of the electric system?

1. Electric joints and cables
2. Batteries and electric wiring
3. Engines and joints
4. Thunder and lightning

16. How many components does the control system have?

1. 4
2. 1
3. 2
4. 5

17. The processor belongs to the _____

1. Sensory system
2. Mechanic system
3. Electric system
4. Control system

18. One of these is NOT a type of robot _____

1. Medical
2. Industrial
3. Household
4. Apologetic

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Name of the Student: Crayathis . K

Year/Sem: III / V

AU Register Number: 811217105011

Value Added Course


"Automation and Robotics"

MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

20

2.5

1. A place where power, information, or a result leaves a system
1. Chassis 2. Output 3. Sensor 4. Troubleshooting
2. Which of the following describes the a use of technology or machinery, specifically Involving gases?
 1. Pneumatics 2. Hydraulics 3. Actuation 4. Carbonation
3. The position or alignment relative to points of the compass or other specific Directions.
1. Loops 2. Sensor 3. Chassis 4. Orientation
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7. The Hummingbird _____ require extra power to be able to work.
1. Sensors 2. LEDs 3. Motors 4. Tri-Color LEDs
8. The branch of technology that deals with the design, construction, operation, and Application of robots _____
1. Levers 2. Robotics 3. Creative power 4. Science CSF


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3. Engines and joints
4. Thunder and lightning

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1. 4
2. 7
3. 2
4. 5

17. The processor belongs to the _____

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4. Apologetic


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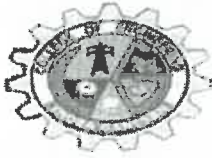


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Name of the Student: *N. Manikandam* Year/Sem: *II/III*

AU Register Number: *811218105005*

Value Added Course

"Automation and Robotics"

20/25

MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

- 1. A place where power, information, or a result leaves a system**
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STUDENTS PARTICIPATION LIST

Department of Electrical and Electronics Engineering

Academic Year 2019-2020 – Odd Semester

VALUE ADDED COURSE ASSESMENT SHEET

“Automation and Robotics”



Dr. G. Balakrishnan, M.E., Ph.D.,
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IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

| S.NO | REG NO | STUDENTS NAME | YEAR/ BRANC H | Attendance Details | | VAC-MCQ TEST | | OVERALL MARK(100) (50% of A + 50% of B) |
|------|--------------|------------------|---------------------|-----------------------------|--------------------------------|-----------------------------|-------------------------|--|
| | | | | No. of Hours Attended | Attendance Mark(100) (A) | No of Correct Answers | MCQ Mark(100) (B) | |
| 1 | 811216105001 | ATTCHAYA K | IV/EEE | 30 | 100 | 20 | 80 | 90 |
| 2 | 811216105003 | BENAZIR M | IV/EEE | 30 | 100 | 19 | 76 | 88 |
| 3 | 811216105004 | GUNA SEELAN D | IV/EEE | 27 | 90 | 19 | 76 | 83 |
| 4 | 811216105005 | HARI GOWTHAM M | IV/EEE | 27 | 90 | 21 | 84 | 87 |
| 5 | 811216105006 | HARIHARAN B | IV/EEE | 24 | 80 | 20 | 80 | 80 |
| 6 | 811216105007 | ISWARYA K | IV/EEE | 27 | 90 | 19 | 76 | 83 |
| 7 | 811216105008 | KALISTA P | IV/EEE | 30 | 100 | 20 | 80 | 90 |
| 8 | 811216105009 | KHAJAMOINUDEEN S | IV/EEE | 27 | 90 | 19 | 76 | 83 |
| 9 | 811216105010 | KIRUTHIKA B | IV/EEE | 27 | 90 | 19 | 76 | 83 |
| 10 | 811216105011 | LOURDHU MARY D | IV/EEE | 27 | 90 | 19 | 76 | 83 |
| 11 | 811216105012 | MARIA SHOBANA J | IV/EEE | 30 | 100 | 21 | 84 | 92 |
| 12 | 811216105014 | MERLIN REETA P | IV/EEE | 27 | 90 | 20 | 80 | 85 |
| 13 | 811216105015 | NIROSHINI R | IV/EEE | 30 | 100 | 21 | 84 | 92 |
| 14 | 811216105016 | NITHING A | IV/EEE | 30 | 100 | 19 | 76 | 88 |



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IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

| S.NO | REG NO | STUDENTS NAME | YEAR/ BRANC H | Attendance Details | | VAC-MCQ TEST | | OVERALL MARK(100) (50% of A + 50% of B) |
|------|--------------|-------------------|---------------------|-----------------------------|--------------------------------|-----------------------------|-------------------------|--|
| | | | | No. of Hours Attended | Attendance Mark(100) (A) | No of Correct Answers | MCQ Mark(100) (B) | |
| 15 | 811216105017 | PAVENTHAN A | IV/EEE | 27 | 90 | 19 | 76 | 83 |
| 16 | 811216105018 | PRAVEEN KUMAR M | IV/EEE | 30 | 100 | 20 | 80 | 90 |
| 17 | 811216105019 | PRISILLA PRIYANKA | IV/EEE | 30 | 100 | 21 | 84 | 92 |
| 18 | 811216105020 | RAJA V | IV/EEE | 24 | 80 | 22 | 88 | 84 |
| 19 | 811216105021 | RATHINA RAJ R | IV/EEE | 30 | 100 | 20 | 80 | 90 |
| 20 | 811216105023 | RESHMI D | IV/EEE | 27 | 90 | 21 | 84 | 87 |
| 21 | 811216105024 | ROOBINI S | IV/EEE | 30 | 100 | 20 | 80 | 90 |
| 22 | 811216105025 | SURESH K | IV/EEE | 27 | 90 | 21 | 84 | 87 |
| 23 | 811216105026 | SURIYA PRAKASH K | IV/EEE | 30 | 100 | 20 | 80 | 90 |
| 24 | 811216105027 | TAMILARASAN M | IV/EEE | 30 | 100 | 19 | 76 | 88 |
| 25 | 811216105028 | TAMILAZHAGAN M | IV/EEE | 30 | 100 | 20 | 80 | 90 |
| 26 | 811216105029 | VINOTH R | IV/EEE | 30 | 100 | 21 | 84 | 92 |
| 27 | 811216105302 | PARKAVI S | IV/EEE | 27 | 90 | 20 | 80 | 85 |
| 28 | 811217105005 | ARUL JOY ASHA A | III/EEE | 24 | 80 | 19 | 76 | 78 |
| 29 | 811217105006 | ARUN SEBASTIN P | III/EEE | 27 | 90 | 19 | 76 | 83 |
| 30 | 811217105007 | BHARTHASARATHI M | III/EEE | 24 | 80 | 19 | 76 | 78 |
| 31 | 811217105008 | CHITHRA P | III/EEE | 30 | 100 | 20 | 80 | 90 |
| 32 | 811217105009 | DEEPIKA G | III/EEE | 27 | 90 | 19 | 76 | 83 |
| 33 | 811217105010 | EZHUMALAI A | III/EEE | 30 | 100 | 21 | 84 | 92 |
| 34 | 811217105011 | GAYATHRI K | III/EEE | 27 | 90 | 20 | 80 | 85 |



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Principal

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IG Valley, Madurai Main Road

Manikandam, Trichy-620 012.

| S.NO | REG NO | STUDENTS NAME | YEAR/ BRANC H | Attendance Details | | VAC-MCQ TEST | | OVERALL MARK(100) (50% of A + 50% of B) |
|------|--------------|--------------------|---------------------|-----------------------------|--------------------------------|-----------------------------|-------------------------|--|
| | | | | No. of Hours Attended | Attendance Mark(100) (A) | No of Correct Answers | MCQ Mark(100) (B) | |
| 35 | 811217105012 | GAYATHRI S | III/EEE | 30 | 100 | 21 | 84 | 92 |
| 36 | 811217105013 | KANIMOZHI S | III/EEE | 27 | 90 | 20 | 80 | 85 |
| 37 | 811217105014 | KEERTHANA S | III/EEE | 30 | 100 | 19 | 76 | 88 |
| 38 | 811217105015 | KUMARIVALLI T | III/EEE | 30 | 100 | 21 | 84 | 92 |
| 39 | 811217105016 | MADHUMITHA S | III/EEE | 30 | 100 | 21 | 84 | 92 |
| 40 | 811217105017 | MANO K | III/EEE | 27 | 90 | 21 | 84 | 87 |
| 41 | 811217105018 | MEKALA M | III/EEE | 24 | 80 | 20 | 80 | 80 |
| 42 | 811217105020 | PAVITHRA S | III/EEE | 27 | 90 | 21 | 84 | 87 |
| 43 | 811217105021 | PRAVEEN RAJ R | III/EEE | 30 | 100 | 20 | 80 | 90 |
| 44 | 811217105022 | RAJASEKAR.N V | III/EEE | 27 | 90 | 19 | 76 | 83 |
| 45 | 811217105023 | REVATHI P | III/EEE | 30 | 100 | 22 | 88 | 94 |
| 46 | 811217105024 | RISHON GURU M | III/EEE | 30 | 100 | 21 | 84 | 92 |
| 47 | 811217105026 | SANTHOSH K | III/EEE | 27 | 90 | 22 | 88 | 89 |
| 48 | 811217105027 | SRIKUMAR M S | III/EEE | 24 | 80 | 20 | 80 | 80 |
| 49 | 811217105028 | SRI LOGESH C | III/EEE | 24 | 80 | 20 | 80 | 80 |
| 50 | 811217105029 | SUBHA T | III/EEE | 27 | 90 | 23 | 92 | 91 |
| 51 | 811217105031 | VALARMATHI C | III/EEE | 30 | 100 | 22 | 88 | 94 |
| 52 | 811217105032 | VISWANATH R | III/EEE | 27 | 90 | 19 | 76 | 83 |
| 53 | 811217105301 | SANJEEV KUMAR R | III/EEE | 24 | 80 | 21 | 84 | 82 |
| 54 | 811218105001 | ARUN PRAVEEN RAJ A | II/EEE | 27 | 90 | 20 | 80 | 85 |



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| S.NO | REG NO | STUDENTS NAME | YEAR/ BRANC H | Attendance Details | | VAC-MCQ TEST | | OVERALL MARK(100) (50% of A + 50% of B) |
|------|--------------|-----------------|---------------------|-----------------------------|--------------------------------|-----------------------------|-------------------------|--|
| | | | | No. of Hours Attended | Attendance Mark(100) (A) | No of Correct Answers | MCQ Mark(100) (B) | |
| 55 | 811218105002 | HARIHARAN M | II/EEE | 30 | 100 | 21 | 84 | 92 |
| 56 | 811218105003 | INBARAJ A | II/EEE | 27 | 90 | 19 | 76 | 83 |
| 57 | 811218105004 | JEYA STEPHEN S | II/EEE | 30 | 100 | 19 | 76 | 88 |
| 58 | 811218105005 | MANIKANDAN N | II/EEE | 30 | 100 | 20 | 80 | 90 |
| 59 | 811218105006 | PADMANABAN A | II/EEE | 30 | 100 | 21 | 84 | 92 |
| 60 | 811218105007 | SASIKUMAR R | II/EEE | 27 | 90 | 21 | 84 | 87 |
| 61 | 811218105008 | SIVAKUMAR P | II/EEE | 24 | 80 | 20 | 80 | 80 |
| 62 | 811218105009 | VEERA RAGAVAN A | II/EEE | 27 | 90 | 21 | 84 | 87 |
| 63 | 811218105010 | YUVARAJ S | II/EEE | 30 | 100 | 20 | 80 | 90 |


VAC Coordinator





HoD/EEE


Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.



| Report on Value Added Course | | | |
|--|--|--|------------|
| Title: | "Automation and Robotics" | | |
| Resource Person: | Dr.M.Abbas, Design Engineer, Sri Sai Software | | |
| Date of conduct from : | 09.12.2019 | To: | 13.12.2019 |
| | | Duration: | 30 Hours |
| Organized Department : | Electrical and Electronics Engineering | | |
| Participant Year: | 2,3,4 | No. of Students Registered : | 63 |
| Venue: | EEE III yr Classroom | | |
| Outcome of Value Added Course (VAC): At the end of the Course, Students can able to | | | |
| <ul style="list-style-type: none">● Understand basic components of robotics, classification of robots and their applications.● Know on types of robot grippers, their usage and design considerations.● Understand about various types of sensory devices their working and applications.● Apply basic transformations related to the movement of manipulator.● Design a robot mechanism to meet kinematics requirements and to write simple programs. | | | |
| Assessment Process | | | |
| <ul style="list-style-type: none">● Students, who are securing more than 70% on total score and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted● Total Score = (0.5 *Attendance in VAC out of 100 percentage + 0.5 *Test mark in VAC out of 100 marks) | | | |
|  VAC Coordinator |  HOD/EEE |  Principal | |


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Sample Photos of Value Added Course

| | | | | | |
|------------------------|---|------------------------------|------------|-----------|----------|
| Title: | "Automation and Robotics" | | | | |
| Resource Person: | Dr.M.Abbas, Design Engineer, Sri Sai Software | | | | |
| Date of conduct from : | 09.12.2019 | To: | 13.12.2019 | Duration: | 30 Hours |
| Organized Department : | Electrical and Electronics Engineering | | | | |
| Participant Year: | 2,3,4 | No. of Students Registered : | 63 | | |
| Venue: | EEE III yr Classroom | | | | |

Sample Photos



Manikandam, Tamil Nadu, India
PJRQ+H4F, Trichy - Melur Rd, Manikandam, Panjappur, Tamil Nadu 620012, India
Lat 10.741419°
Long 78.6376°
10/12/19 09:37 AM GMT +05:30


VAC Coordinator


HOD/EEE


Principal

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012,



CERTIFICATE OF PARTICIPATION

This is to certify that Ms. BENAZIR M, IV Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

Sri Sai Software
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Manikandam, Trichy-620 012.

Principal
IGCE



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This is to certify that Ms. ISWARYA K, IV Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Ms. MERLIN REETA P, IV Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Ms. PRISILLA PRIYANKA, IV Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. SURESH K, IV Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. VINOTH R, IV Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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CERTIFICATE OF PARTICIPATION

This is to certify that Mr. ARUN SEBASTIN P, III Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. BHARTHASARATHI M, III Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Ms. DEEPIKA G, III Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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CERTIFICATE OF PARTICIPATION

This is to certify that Ms. MEKALA M, III Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. RISHON GURU M, III Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. SANTHOSH K, III Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. VEERA RAGAVAN A, II Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. HARIHARAN M, II Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. VISWANATH R, II Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. PADMANABAN A, II Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. YUVARAJ S, II Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. INBARAJ A, II Year, EEE has successfully completed the Value Added Course on “Automation and Robotics” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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