



APPLIED ROBOT CONTROL (ARC) LABORATORY



(Indo-European Skilling Center for Mechatronics & Industrial Robotics)

The Andhra Pradesh State Skill Development Corporation (APSSDC) in association with the European Center for Mechatronics (ECM) took an initiative to develop the *Mechatronics Eco System* in India which supports the industrial requirements from academic level. Indo Euro Synchronization team along with APS, GmbH, ITA, RWTH Aachen University and German Center for Advanced Engineering Studies are also part of this programme. In this context, one of its kind initiatives of the Government of Andhra Pradesh through APSSDC in collaboration with ECM, Germany established **Applied Robot Control (ARC)** labs in engineering colleges across Andhra Pradesh. Sree Vidyanikethan Engineering College became a part of this program and established ARC lab in the Department of Mechanical Engineering under the guidance of Dr. K. C. Varaprasad, Professor and HoD.

Objectives:

- This is the first kind of MoU facilitated with State of Andhra Pradesh to develop the skill of the students in the area of Automation and Industrial Robotics.
- 40 Engineering Colleges across AP will be selected as Indo-European Skilling Centers for Mechatronics and Industrial Robotics and Applied Robot Control (ARC) Labs will be set up in partnership with ECM and respective colleges.
- Members of faculty, who will be delivering this programme to the students, will be given intensive training in Germany and through online workshops by experts from ECM and its partners.
- Students will be trained to meet the highest global standards in the fields of industrial robotics and manufacturing automation with hands on experience at industrial production sites.
- Improve the students' skill in the field of automaton and increase their employability opportunities.



Fig.1 ARC offline training to the members of faculty

Training to Students:

The students pursuing IV-B. Tech in ECE, EEE, ME, and EIE streams of the college will be trained in ARC 1.0, ARC 2.0 and ARC 3.0 courses. Each course lasts for three months. The APSSDC and the ECM jointly sponsor 90 percent of the course fee. It's a one of high-end robotics skills courses offered to the students at a very marginal cost.

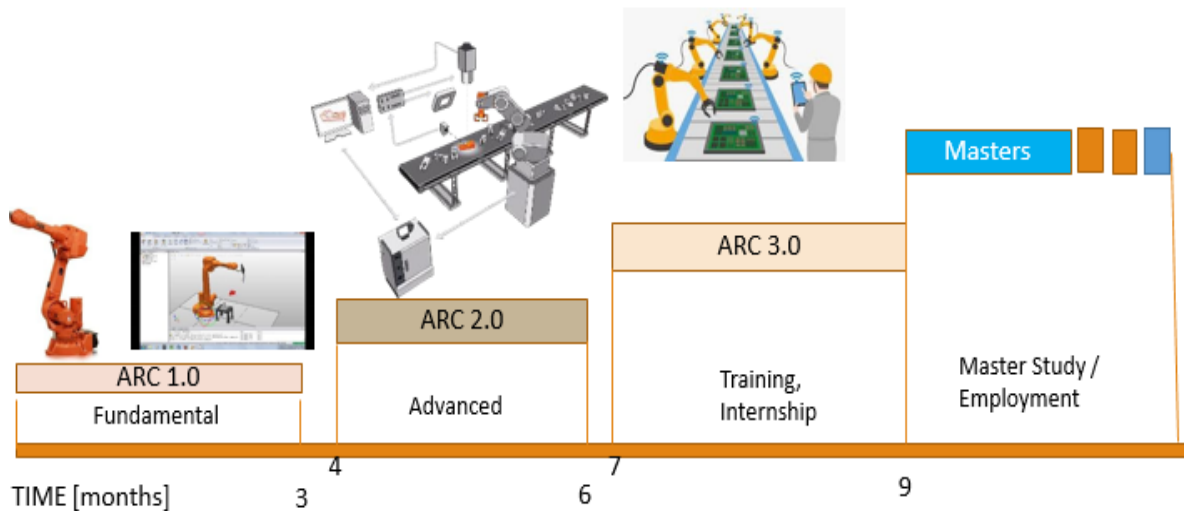


Fig2. Students participating in ARC1.0 online sessions

Online sessions are offered by German faculty, whereas offline sessions and hands on training on Robots are dealt by the college faculty who were trained already by the APSSDC.

Training Methodology:

ARC training is carried out in three phases as specified below. Starting from basics in phase 1, the training progresses giving the advanced and hands on practice in the later phases. After successful completion of ARC 3.0, the students are offered internships in industries.



Course Details:

| | ARC 1.0 | ARC 2.0 | ARC 3.0 |
|------------------------|--|--|--|
| Eligibility | 6th Semester | 7th Semester | 8th Semester |
| | Mechanical/ECE/EEE/Automobile/Instrumentation Engineering | | |
| Activity | 12 weeks course/ crash course | 12 weeks Training + Bachelor project | 6 weeks course with job assistance |
| Course contents | Topics of Mechatronics, Manufacturing, Industrial Automation and Robotics | VR in Automation and Robotics. Bachelor project on Industry scale application | Hands on experience on Industry scale robots in an industrial setup |
| Location | ARC Labs | ARC labs | ECMM, India/Germany |
| Hours | 120 | 120 | 6 weeks |
| | (50% - Teaching/Labs 50% Self learning and Implementation work) | | |

Benefits to Students:

- Exposure to high end technologies, international collaborations and innovations at Bachelor's Degree level, making them stand out from their peers.
- Training from highly qualified and experienced faculty from network colleges and research institutions in Germany.
- Certification from reputed German Universities, on successful completion of the courses.
- Best performing students will be invited to join international exchange programmes to Europe, workshops and factory visits to reputed manufacturing and robotics factories.

- Opportunity to join masters' programmes in reputed universities in Europe with possible scholarships. Participate in *Job Melas* organized by European Center for Mechatronics and APSSDC.

Facilities in ARC lab

- 1. IGUS Robots – 5 axis – 2 Nos**
- 2. CProg Software**
- 3. RobotStudio Simulation Software**

Specifications of Robot:

| | | |
|-------------|---|---|
| Model | : | ROBO robolink® RL-DCi |
| Axes | : | 5 |
| Reach | : | 680 mm |
| Payload | : | 500g |
| I/O Modules | : | 1 Digital in/out module with 4 inputs, 4 outputs on 24 V level, can be increased to 3 modules |



STUDENT REGISTRATION FORM

| | |
|--|---|
| Office use only Batch No: _____ Admission No: _____ ARC Phase: _____ Joining Date: <u>DD/MM/YEAR</u> | Affix recent passport size photo here |
|--|---|

Name of the student : _____

Roll No : _____

Branch : _____

Aadhar No : _____

Email ID : _____

Contact No : _____

Academic CGPA : _____

Name of the father/mother : _____

Parent's contact No : _____

Address : _____

Pincode: _____