

304196 Employability Skills and Mini Project**Credits: TH-02 PR-01****Teaching Scheme:****Lecture : 02 hr/week****Practical : 02 hr/week****Examination Scheme:****Oral : 50 Marks****Course Objectives:**

- To understand the “Product Development Process“ including budgeting through Mini Project.
- To plan for various activities of the project and distribute the work amongst team members.
- To inculcate electronic hardware implementation skills by -
- Learning PCB artwork design using an appropriate EDA tool.
- Imbibing good soldering and effective trouble-shooting practices.
- Following correct grounding and shielding practices.
- To develop student’s abilities to transmit technical information clearly and test the same by delivery of Seminar based on the Mini Project.
- To understand the importance of document design by compiling Technical Report on the Mini Project work carried out.

Course Outcomes:

On completion of the course, student will be able to

1. Understand, plan and execute a Mini Project with team.
2. Implement electronic hardware by learning PCB artwork design, soldering techniques, testing and troubleshooting etc.
3. Prepare a technical report based on the Mini project.
4. Deliver technical seminar based on the Mini Project work carried out.

Course Contents**Execution of Mini Project**

- Project group shall consist of **not more than 3** students per group.
 - Mini Project Work should be carried out in the Design / Projects Laboratory.
 - Project designs ideas can be necessarily adapted from recent issues of electronic design magazines
- Application notes from well known device manufacturers may also be referred.

Faculty of Engineering

- Use of Hardware devices/components is mandatory.
- Layout versus schematic verification is mandatory.
- Bare board test report shall be generated.
- Assembly of components and enclosure design is mandatory.

B: Selection: Domains for projects may be from the following, but not limited to:

- Instrumentation and Control Systems
 - Electronic Communication Systems
 - Biomedical Electronics
 - Power Electronics
 - Audio , Video Systems
 - Embedded Systems
 - Mechatronic Systems
- Microcontroller based projects should preferably use Microchip PIC controllers/ATmega controller/AVR microcontrollers.

C. Monitoring: (for students and teachers both)

Suggested Plan for various activities to be monitored by the teacher.

Week 1 & 2: Formation of groups, Finalization of Mini project & Distribution of work.

Week 3 & 4: PCB artwork design using an appropriate EDA tool, Simulation.

Week 5 to 8: PCB manufacturing through vendor/at lab, Hardware assembly, programming (if required) Testing, Enclosure Design, Fabrication etc

Week 9 & 10: Testing of final product, Preparation, Checking & Correcting of the Draft Copy of Report

Week 11 & 12: Demonstration and Group presentations.

Log book for all these activities shall be maintained and shall be produced at the time of examination.

D. Report writing

- A project report with following contents shall be prepared:
 - Title
 - Specifications
 - Block diagram
 - Circuit diagram
 - Selection of components, calculations

- Simulation results
- PCB artwork
- Layout versus schematic verification report
- Testing procedures
- Enclosure design
- Test results
- Conclusion
- References

Text Books:

1. Thomas C Hayes, Paul Horowitz,, “The Art of Electronics”,Newens Publication
2. Analog Circuit Design: Art, Science and Personalities, by Jim Williams (Editor) , EDN series for Design Engineers,
3. M Ashraf Rizvi,“ Effective Technical Communication“, Tata McGraw Hill Education Pvt. Ltd.

Reference Books:

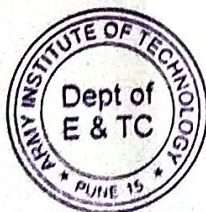
1. . Robert Boylested, “ Essentials of Circuit Analysis”, PHI Puublications
2. Meenakshi Raman, Sangeeta Sharma,“ Technical Communication, Principles and Practice“, Oxford University Press
3. A.E. Ward, Angus, “ Electronic Product Design”, Stanley thornes Publishers, UK.
4. C Muralikrishna, Sunita Mishra,“ Communication Skills for Engineers“, Pearson

Army Institute of Technology
Mini Project & Seminar
Class TE-Div-A
Project Titles & Batches (2017-18)

No. of Groups	Roll no	Exam Seat No.	Name of students	Titles
Group 1	133B	T15022304B	KASHI VINAY KUMAR	POMODORO Study and Focus Assistant
	1313	T15022301B	ARPII DHANKAR	
Group 2	1305	T150223010	ABHIBHEK YADAV	Multiple City Load Shedding
	1317	T150223022	AVDESH BINGH GURJAR	
	1326	T150223032	DIVYA JYOTI MANDAL	
Group 3	1330	T150223040	GUNNA BAI RAM REDDY	Power Consumption & Device Monitoring System
	1331	T150223041	GURPARKAR	
	1333	T150223043	JABTEJ BINGH LOTAY	
Group 4	1319	T150223024	AYUBH CHAUHAN	Positioning Clock Formars
	1322	T150223027	BRIHAM PRAKASHI	
	1327	T150223035	GAUTAM KUMAR	
Group 5	1320	T150223025	BIKASH CHANDRA BAHOO	Anti Mine System
	132B	T15022303B	GOKUL BINGH	
	1329	T150223039	GUNJAN PANDEY	
Group 6	1301	T150223005	AABHISH KUMAR BHUKLA	Driver Management System
	1309	T150223014	ANANDHU R NAIR	
	1315	T150223020	ARVIND RANA	
Group 7	1302	T150223006	ABHINANDAN BINGH	Health Monitoring System
	1323	T150223033	D BHARATH KUMAR	
	1341	T150223052	MANISH KUMAR	
Group 8	1339	T150223100	KEBHAV BUKAL	Smart stick for blind People
	1342	T150223053	MANISH KUMAR	
	1354	T150223098	BIPUL KUMAR	
Group 9	1347	T150223060	NIKHIL PARMAR	Density Based Traffic System
	1349	T150223049	KOBHIK RAJ KARWA	
	1357	T150223110	VIDEH RAJ BINGH	
Group 10	1316	T150223021	ABHWIN ARYA	Smart Windows
	1336	T150223046	JYOTSNA BINGH	
	1346	T150223059	NIKHIL KAPOOR	
Group 11	1312	T150223017	APARNA CHOUDHURI	Smart Taser for womens Security
	1314	T150223019	ARPIITA GUHA	
	1348	T150223116	VRINDA SHAH	

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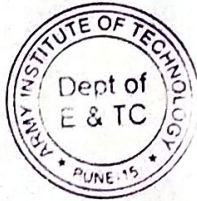
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No. of Groups	Roll no	Exam Seat No.	Name of students	Titles
Group 12	1324	T150223028	DEEPAK SINGH	Smart Street Lighting
	1325	T150223030	DHARMENDER SINGH	
	1356	T150223037	AKSHAY DEORAM GHODKE	
Group 13	1321	T150223028	BOORELA ARVIND KAUSHIK	IOT based Garbage Monitoring System
	1351	T150223001	ASHISH KUMAR	
	1352	T150223078	RAVINDER SINGH	
Group 15	1304	T150223009	ABHISHEK TIWARI	Acrobot Smart Farming
	1307	T150223012	AKASH TOMAR	
	1308	T150223013	AMBUJ TRIPATHI	
Group 16	1332	T150223042	HARI SINGH	Shuttle Run Counter
	1337	T150223047	KAMESH TIWARI	
	1340	T150223051	MAHENDER SINGH GODARA	
Group 17	1303	T150223007	ABHISHEK KUMAR	Monitoring of Air pollution
	1306	T150223011	AJAY KUMAR PANDIRI	
	1311	T150223064	ANURUDH PALLA	
Group 18	1334	T150223044	JEEVAN BENIWAL	Performance monitoring system of Industries
	1335	T150223045	JITENDER SINGH RAGHAV	
	1345	T150223058	NAVEEN KUMAR	
Group 19	1344	T150223056	MUNAGALA SRINIVAS REDDY	Digital storage Oscilloscope using Personal Computer
	1350	T150223016	ANMOL PORWAL	
	1353	T150223050	ROUNAK KUMAR	

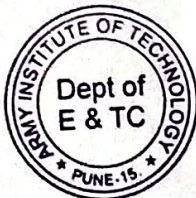
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Army Institute of Technology
Mini Project & Seminar
Class TE-Div-B
Project Titles & Batches (2017-10)

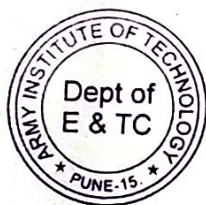
Group 1	5314	T150223075	RAKSHANDA SINGH	Alcohol Detection & Vehicle Blocking
	5315	T150223076	RAMENDRA SINGH YADAV	
	5339	T150223103	SUNIL KUMAR	
Group 2	5322	T150223084	S PAVITHRA	Smart Storage Center
	5324	T150223087	SADHIKA PARASHAR	
	5328	T150223091	SAUMYA BHAGWAT	
Group 3	5333	T150223003	SHUBHAM PRINTE	Mobile Controlled Wheelchair
	5349	T150223036	GESSO GEORGE	
Group 4	5313	T150223074	RAJENDRA PAL SINGH	Voice Recognition system using MATLAB
	5323	T150223086	SACHIN KARWASRA	
	5337	T150223004	SUMIT KUMAR	
Group 5	5331	T150223057	SHRIYA NAGRATH	Automatic Dough Maker
	5354	T150223101	SUMIT KUMAR SINGH	
	5355	T150223115	VIVEK RAJAN VERMA	
Group 6	5308	T150223069	PRITI KUMARI	Baggage Tracking
	5361	T150223094	SHIREEN DASH	
	5362	T150223093	BHAGYASHREE SHINDE	
Group 7	5329	T150223092	SAURABH SHARMA	Electronic Door Locking System
	5338	T150223102	SUMIT SANTOSH KADAM	
	5360	T150223117	CHANDAN KUMAR YADAV	
Group 8	5336	T150223099	SMRUTHI GS	Electronic Votting Machine
	5341	T150223105	SWATI	
Group 9	5318	T150223081	ROHIT DIMRI	Automatic Solar Street Light
	5334	T150223096	SHUBHANSHU KUSHWAH	
	5335	T150223097	SIDDHARTH DAHIYA	
Group 10	5316	T150223077	RANBIR SINGH	Smart Irrigation
	5337	T150223004	SUMIT KUMAR	
	5343	T150223109	VAIBHAV YADAV	
Group 11	5302	T150223062	NITIN SINGH RAWAT	Automatic Railway Crossing
	5348	T150223119	YOGESH MOKASHE	
	5359	T150223108	UDAY KUMAR	




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No. of Groups	Roll no	Exam Seat No.	Name of students	Titles
Group 12	5342	T150223106	TEJVENDER SINGH	Bus Transport on Demand
	5344	T150223111	VINEET KUMAR TRIPATHI	
	5358	T150223061	NITIN MISHRA	
Group 14	5320	T150223080	ROHIT SINGH BISHT	Vehicle Accident Detection & Alerting System
	5327	T150223090	SANGAM RAJU	
	5340	T150223104	SURAJ MISHRA	
Group 15	5332	T150223095	SHUBHAM DWIVEDI	Alcohol Detection and Alert in Public places
	5346	T150223114	VIVEK KUMAR	
Group 16	5301	T150223063	NITIN SINGH	Gesture Controlled Robot
	5304	T150223066	PATEL SUDHIR KUMAR	
	5345	T150223112	VISHAL	
Group 17	5321	T150223083	ROMI KULASHRI	Smart Car security system
	5325	T150223088	SANCHIT CHAUHAN	
	5347	T150223118	YASHWANT KR RANA	
Group 18	5350	T150223054	MANOJ JOSHI	RIFD Security System
	5351	T150223113	VIVEK	
	5353	T150223008	ABHISHEK PATIAL	
Group 19	5307	T150223085	PRAVEEN KUMAR S	BOAT Autopilot
	5309	T150223070	PRIYABRATA SAMANTARAY	
	5352	T150223029	DEVENDRA MISHRA	
Group 20	5303	T150223065	PARVINDER SINGH	Pollution check system
	5310	T150223071	RAHUL	
	5311	T150223072	RAHUL WALIA	
Group 21	5305	T150223067	PILLA RAVI THEJA	Wireless and Road Safety measure
	5312	T150223073	RAHUL YADAV	
	5317	T150223079	ROBIN MALIK	




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