ROBOTICS CLUB
RAJASTHAN TECHNICAL UNIVERSITY
KOTA, RAJASTHAN
WE LEARN, WE SHARE

Our Objective: "*We Learn, We Share.*"

 The robotics club of RTU, kota was established in 2012 by the students from different departments who share a common interest in the field of robotics. The main objective of the club is "*We Learn, We Share".* Each year, at the beginning of semester, classes of first year are conducted by the members of robotics club during the induction program. The initial classes include a brief introduction of club and its activities to be performed throughout the year. After then the classes of different sensors, microcontroller etc. are held. The regular classes of the fresher students start. Throughout the whole year workshops, events, trip to IIT'S, NIT'S and other state colleges are arranged. At the end of year, many events from robotics club are organised in our annual technical fest "**THAR".**

Club Activities:

1. Basic coding and electronics classes during Induction program.
2. Embedded Robotics Workshop.
3. Club competition after workshop.
4. A Visit in Techfest of IIT for technical exploration.
5. Participate in Technical Event (At IIT, NIT and state college event).
6. Organized Events and Exhibitions in Technical fest of RTU, Kota.
7. Conduct Classes Regularly in Robotics Club.

OUR ACHIVEMENTS

Sr.No.	Name of Activity	Palace	Date	Achievements
1	IGNUS 2019	IIT, Jodhpur	21/02/2019	WINNEER
2	PLINTH 2019	LMNIIT, Jaipur	18/01/2019	WINNER
3	RTU HACKATHON-II	SKIT, Jaipur	02/02/2019	2ND RUNNER UP
4	RTU HACKATHON-I	ARYA, Jaipur	22/09/2018	WINNER
5	ESYA'18	IIIT DELHI	17/08/2018	WINNER
6	TRACK_O_MANIA THAR 2K18	RTU, Kota	14/03/2018	WINNER
7	ROBO-RACE	RTU, KOTA	14/03/2018	WINNER

Responsibility of Robotics Club

Faculty Coordinator – **Dr. Deepak Bhatia** (Assistant Professor ECE Department RTU, Kota)

Coordinator	Pradeep Giri	Final Year, ECE (15/577)	9024271188
Coordinator	Ishwar Singh Solanki	Third Year, ME (16/145)	9649815625
Financial Secretory	Prakash Panwar	Third Year, P&IE (16/238)	998266195
	Kaustubh sahu	Third Year, CSE (16/458)	7597288909
Electronics Library Head	Vivek Rajotiya	Third Year, EICE (16/430)	773521856
	Balmukund Pandey	Third Year, ECE (16/349)	9798316421
Event Manager	Pritam	Third Year, ECE (16/373)	7023995999
	Pankaj Sharma	Third Year, CE (16/039)	8293336172

All Club Members

Coordinators:

S. No.	Name of Coordinator	Branch	Year of study	email	Mobile
1	Akshay Kumawat	-	2011-2015	-	-
2	Aakash Jain	-	2012-2016	-	-
3	Pradeep Chauhan	ME	2013-2017	-	-
4	Amit Singh Chauhan	ECE	2014-2018	amitSinghChauhan96@gmail.com	8440849943
5	Pradeep Giri	ECE	2015-2019	Pradeepgiri.pg123@gmail.com	9024271188

Final Year members

Pradeep Giri	ECE	15/577
Chandresh Sharma	CSE	15/088
Amit Pareek	ME	15/023
Gaytri Detwal	EIC	15/116
Garima Malav	CE	15/112
Harshit Derashree	ME	15/131

Third Year Members

Prakash Panwar	P&IE	16/238
Pritam Sharma	ECE	16/373
Ishwar Singh Solanki	ME	16/145
Balmukund Pandey	ECE	16/349
Vivek Rajotia	EIC	16/430
Kaustubh Sahu	CSE	16/458
Akshay Soni	PCE	16/557
Pankaj Sharma	CE	16/363
Manoj Kumar	ECE	16/363

Second Year Members

Tanmay Khandelwal	ECE	17/392
Shivani Agarwal	ECE	17/388
Sagar Ramlani	EIC	17/427
Pramod Kumar	IT	17/521
Prabhu Singh	EIC	17/421
Hitesh Meena	EIC	17/414
Ritul Jain	EIC	17/425
Saniya Khan	ECE	17/430
Asba Parveen	ECE	17/353
Jaimala Nagdev	EIC	17/415
Siddhant Sharma	ECE	17/390
Rajat Soni	ECE	17/378
Aakash Khandelwal	ECE	17/342
Anshul Vijay	ECE	17/350
Aditya Verma	ECE	17/344
Gautam Singh	EIC	17/412
Jivant Sharma	....	

First Year Members

Approximately 25 students from different branches.

Our Complete Year Class Programming

Topics	No. of Classes
Basic Electronics Classes	5
Basic Coding Classes(C/C++)	15
Advance Coding for Embedded Robotics	5-6
Different Sensors Classes(Bluetooth, Gas Detector, PIR, IR, Ultrasonic, Real Time Clock, DHT,LCD, LDR, GSM.....etc.	More than 15
Advance C/C++ Classes	8
Data Structure Classes	10
WiFi Module Classes	3
Web Design and Developing Classes	-

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List of activities

Sr.No.	Name of Activity	Palace	Date	Page No.
1	Techkriti'2k19	IIT, Kanpur	07/03/2019	
2	Smart Indian Heckathon	Coimbatore	02/03/2019	
3	Ignus 2019	IIT, Jodhpur	21/02/2019	
4	Plinth 2019	LMNIIT, Jaipur	18/01/2019	
5	RTU Hackathon-II	Skit, Jaipur	02/02/2019	
6	RTU Hackathon-I	Arya, Jaipur	22/09/2018	
7	ESYA'18	IIIT DELHI	17/08/2018	
8	Technex'18	IIT BHU	16/02/2018	
9	3D Printing Workshop	RTU, Kota	-	
10	Embedded Robotics Workshop	RTU, Kota	08/08/2018	
11	THAR 2K18	RTU, Kota	14/03/2018	
11	Basic Electronics and Coding Classes	RTU, Kota	01/07/2018	
12	Embedded Robotics Workshop	RTU, Kota	09/09/2017	

1. TECHKRITI' 2K19

TEAM MEMBER DETAILS –

- SAMBHAV JAIN(1ST YEAR,EE)
- PRAJJWAL SHARMA(1ST YEAR,ECE)
- SHRINIT GOYAL(1ST YEAR,CSE)
- PRIYANKA SIKARWAR(1ST YEAR,EIC)
- VIVEK JAIN(1ST YEAR,ECE)
- DIVYANSHU JASORIA((1ST YEAR,EE)
- SARMESH KANWAR(1ST YEAR,CSE)
- PRIYANKA VERMA(1ST YEAR,CSE)
- SHUBHAM SUMAN(1ST YEAR,ME)
- SAURAV KUMAR(1ST YEAR,EE)
- MUGDHA SHARMA(1ST YEAR,ECE)
- BANWARI LAL SWAMI(1ST YEAR,CSE)
- NEERAJ NAGDEV(1ST YEAR,EIC)
- AMAN MEENA(1ST YEAR,EIC)
- GAUTAM SINGH(2ND YEAR,
- PRAMOD PATIDAR(2ND YEAR,CS)
- RAJAT SONI(2ND YEAR,ECE)
- TANMAY KHANDELWAL(2ND YEAR,ECE)
- SHIVANI AGARWAL(2ND YEAR,ECE)
- SAGAR RAMLANI(2ND YEAR,EIC)
- JAIMALA NAGDEV((2ND YEAR,
- HITESH MEENA(2ND YEAR,EIC)
- SIDDHANT SHARMA2ND YEAR,ECE)
- SANIYA KHAN(2ND YEAR,ECE)
- PRABHU SINGH(2ND YEAR,EIC)
- RITUL JAIN(2ND YEAR,EIC)
- Aditya Verma (2ND YEAR, EC)

EVENT DESCRIPTION –

TechKriti is an annual inter-collegiate technical and entrepreneurship festival organized by the students of Indian Institute of Technology Kanpur. It was launched in 1995 with the aim of developing interest and encouraging innovation in technology among students. The festival is held over four days every March, attracting footfall of over 40,000 from around 1400 colleges all over the world. This year techKriti is coming back with its Silver Jubilee edition from 7th March to 10th March 2019.

IARC: - This event includes line follower, wall follower and obstacle avoider robot. The event tests your analytic and coding skills to the fullest. The path consists of two nodes true node and false node. The robot has to identify the node and then display it on the liquid crystal display along with the total number of nodes.

MANOEVURE: - This event includes two robots one with gripper and other without gripper. This event consists of two rounds. In first round the robot with gripper has to pickup the boxes in minimum time and fill in the empty spaces. In the second round the robot without gripper moves on the path and the robot with gripper has to fill the spaces in between the tracks so that robot without gripper can complete the path in minimum time.

Embedded:- In this event we have built a circuit which consists of Liquid Crystal Display which is used to display current date and time, GSM is used for turning the lights on and off by sending messages and this GSM is consist of a two way communication, DHT sensor which tell us about the temperature and humidity of the surrounding, 4 relay switch which operates on 12 DC.

Egg Drop: - Egg drop challenge is an on the spot event in which teams have to design a compact structure using different types of materials acquired by them through Auctioning. Teams have to drop the structure from a height of 40ft. The aim is to prevent the egg from cracking. The egg may be considered to be an analogical representation of some precious cargo, such as a human being, that ideally would not be harmed upon re-entry into the atmosphere from space. Egg drop challenge helps in cases where you have to drop something safe from a certain height in an emergency.

TECHNICAL TOOLS –

- ✓ ARDUINO(SOFTWARE)
- ✓ IR SENSORS, ULTRASONIC SENSOR, MOTOR SHIELD(L293D)
- ✓ ARDUINO(MICRO CONTROLLER)
- ✓ LIQUID CRYSTAL DISPLAY
- ✓ DPDT SWTICHES
- ✓ GEARED JHOSNSON MOTORS
- ✓ DHT SENSOR

REFERENCES – https://techkriti.org/home

2. SMART INDIA HACKATHON-2019

TOP 3 Finalists in All India

TEAM NAME – VOLDEMORT

TEAM LEADER – PRADEEP GIRI

TEAM MEMBER DETAILS –

- ➢ Pradeep Giri (Final Year, ECE)
- ➢ Sandeep kumar Merutha (Final Year, EIC)
- ➢ Rajendra Jajra (Final Year, CSE)
- ➢ Pradeep (Final Year,CSE)
- ➢ Ankit singhal (Final Year, ECE)
- ➢ Gaytri deytwal(Final year,EIC)

EVENT DESCRIPTION –

SIH-2019 is jointly organised by All India council of technical education(AICTE) & MHRD,i4c and Persistent Systems have come together to organise Smart India Hackathon (SIH) 2019 - a unique Open Innovation Model for identifying new and disruptive technology innovations to solve the challenges faced in our country. It's a non-stop product development competition, where problem statements are posed to technology students for innovative solutions. From all over India students from IITs, NITs and other state universities provide solution to various problems given by companies. Technical partners of the event are KPIT, DEVNET, Deloitte, Cisco build for India etc.

PROJECT DETAILS –

Organization: - MSME, DI PATNA
Problem statement: - Technology solution to improve child health and nutrition.
In rural India many PHCs have been set up under Govt. of India initiatives. But the availability of Doctors, Nurses and health counsellors are still very low. As a result, the delivery of child occurs in absence of expert leading to risk of life of the mother and child. Also, new-born / infant is not getting proper nutrition due to lack of awareness among the rural area despite presence of "Aangan Bari Kendra". Due to this the infant mortality rate in country like India is high which needs technological intervention.

The project solution:-

project having a user friendly mobile app (EMAMTA) integrated with biometric device (mfs100) for authentication & app for counsellor as well as for patient and website/webpage for Admin panel to check all process from backend.

TECHNICAL TOOLS –

- ✓ ANDROID STUDIO
- ✓ HTML, PHP, MYSQL. CSS AND JAVA SCRIPT
- ✓ BIOMETRIC DEVICE MFS100(MANTRA)

Reference: - *https://www.sih.gov.in*

3. IGNUS-2019

WINNER

TEAM NAME – MEGATRONE

TEAM LEADER – VIVEK RAJOTIA

TEAM MEMBER DETAILS –

- Vivek Rajotia (III YEAR, EIC)
- Kaustubh Sahu (III YEAR, CS)
- Ishwar Singh Solanki (III YEAR, ME)
- Aditya Shah Bajaj (II Year, ME)
- Bhavesh Bhagora (II Year, ME)
- Harsh Jain (II Year, ME)
- Ritul Jain (II Year, EIC)
- Aakash Khandelwal (II Year, ECE)
- Rajat Soni (II Year, ECE)
- Sambhav Jain (I Year, EE)
- Shrinit Goyal (I Yeaar, CS)
- Prajjwal Sharma (I Year, ECE)

EVENT DESCRIPTION –

IGNUS, the annual techno-cult-socio fest of IIT Jodhpur, over time has resorted as the breath of lads swamped in the lands of Thar. One of the biggest college fest of North-western India. IGNUS has witnessed the performances of various National and International artists. Getting absorbed in the madness, the fest too had its highs and lows but still it holds euphoric memories for the people. Whether a techie, a full-on free spirit or a social bird, all your interests are taken care of. Just step into the wormhole of the fantasy world and let your dreams unfold while getting absorbed in the ecstasy of IGNUS'19.

4. PLINTH -2019

WINNER

TEAM NAME – MEGATRONE

TEAM LEADER – VIVEK RAJOTIA

TEAM MEMBER DETAILS –

- Vivek Rajotia (III YEAR, EIC)
- Kaustubh Sahu (III YEAR,CS)
- Akshay Soni (III YEAR, PCE)
- Ishwar Singh Solanki (III YEAR,ME)
- Aditya Shah Bajaj (II Year, ME)
- Bhavesh Bhagora (II Year, ME)

EVENT DESCRIPTION –

Plinth is the annual inter college Techno-Management-Literary Festival of the LNMIIT, Jaipur. A bud when comes out of its cover, strives for the glow which could make it an attractive flower. So, here in Plinth as we celebrate the fifth year of its successful organization, we are proud to say that the bud found its glow in the enthusiasm and the confidence of its participants.

PROJECT DETAILS –

- 60KG weight category drum robot.
- 7 kg wedge sumo bot

TECHNICAL TOOLS –

- Micro-Controllers, High power relay circuit
- Mechanical work

5. RTU HACKTHON-II

2ND RUNNER UP

TEAM NAME – VOLDEMORT

TEAM LEADER – PRADEEP GIRI

TEAM MEMBER DETAILS –

- ➢ Pradeep Giri (Final Year, ECE)
- ➢ Chandresh Sharma (Final Year, CSE)
- ➢ Satyendra Borana (Final Year, ECE)
- ➢ Prakash Panwar (III Year, P&I)
- ➢ Shrinit Goyal (I Year, CSE)

EVENT DESCRIPTION –

RTU HACKATHON-II 2019 is jointly organised by Rajasthan Technical University (RTU) Kota & Department of Computer Science & Engineering and Department of Information Technology SKIT, Jaipur. There are participated 120 teams from all over Rajasthan's college approved by Rajasthan technical university. Technical partners of the event are paytm build for India, Teligenz, Metacube, NIIT Technology, Natural, Capgemini, Zebronics etc. the problem statement are given by these companies.

PROJECT DETAILS –

For the event among all the problem statements a project is designed worked like as **paytm customer credit profile** which can provide **EMI** and **cash on delivery** service based on the behaviour of the person or group of the same category depends on the some factors. This project having a website and all coding done in machine learning and artificial intelligence.

TECHNICAL TOOLS –

- ✓ HTML, PHP, MYSQL. CSS AND JAVA SCRIPT
- ✓ MACHINE LEARNING
- ✓ ARTIFICIAL INTELLIGENCE

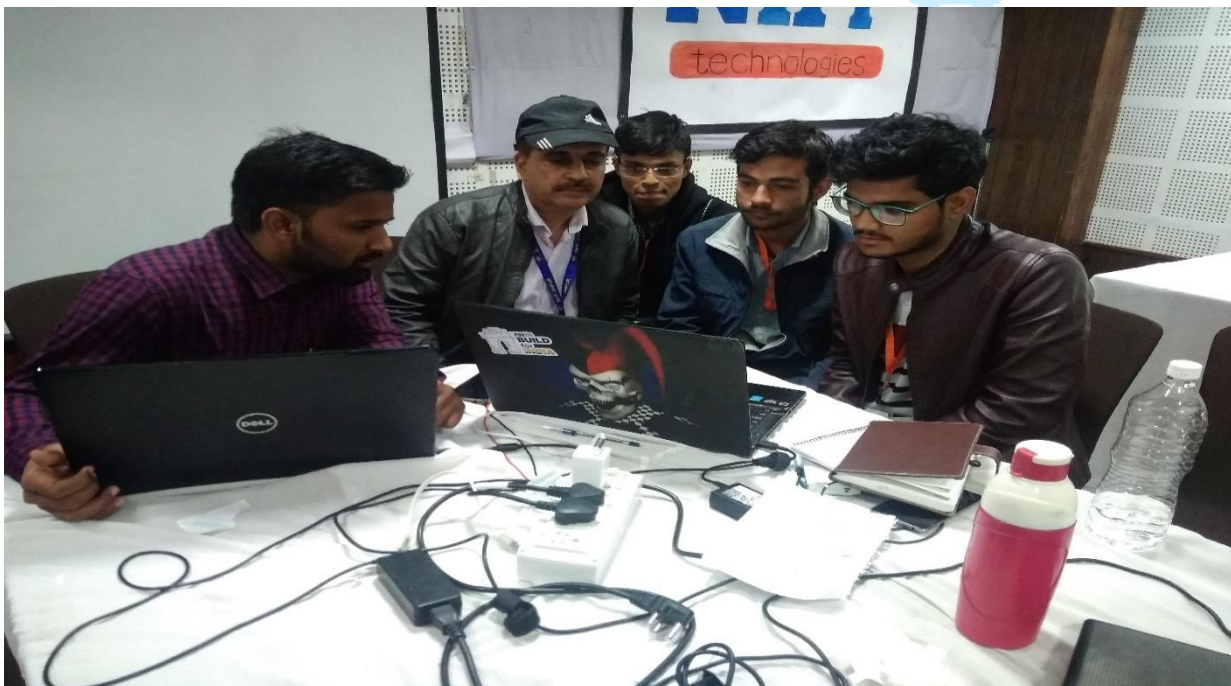Reference: skithackathon.org

6. RTU-HACKATHON-1 2018

WINNER

TEAM NAME – ROBO-WARRIORS

TEAM LEADER – Ishwar Singh Solanki

TEAM MEMBER DETAILS –

- Vivek Rajotia (III YEAR, EIC)
- Kaustubh Sahu (III YEAR,CS)
- Ishwar Singh Solanki (III YEAR,ME)
- Pankaj Sharma (III YEAR , CE)
- Pritam (III YEAR ,EC)
- Balmukund Pandey (III YEAR ,EC)

EVENT DESCRIPTION –

RTU HACKATHON-I 2018 is jointly organised by Rajasthan Technical University (RTU) Kota & Arya college of engineering , jaipur. There are participated 120 teams from all over Rajasthan's college approved by Rajasthan technical university. Technical partners of the event are indigo airlines, amazon alexa, no brocker, aries etc. the problem statement are given by these companies.

PROJECT DETAILS –

Closed loop irrigation solution for farmers: Irrigating fields plays a vital role in crop yield. However, how much and when to irrigate is still moderated by the traditional knowledge for the farmers. Knowing how much water is actually required for a given crop for a particular soil type depends majorly on soil's capacity to hold moisture. We need an IoT, AI based solution which can auto irrigate the fields for a given crop based on the soil moisture content.

TECHNICAL TOOLS –

- HTML, PHP, MYSQL. CSS AND JAVA SCRIPT
- MACHINE LEARNING
- control loops for control irrigations
- ARTIFICIAL INTELLIGENCE
- IOT
- Cloud computing
- Soil moisture content details & deep knowledge

7. ESYA'18 -2018

WINNER

TEAM NAME – MEGATRONE

TEAM LEADER – VIVEK RAJOTIA

TEAM MEMBER DETAILS –

- Vivek Rajotia (III YEAR, EIC)
- Kaustubh Sahu (III YEAR,CS)
- Akshay Soni (III YEAR, PCE)
- Ritul Jain (II Year, EIC)
- Aditya Shah Bajaj (II Year, ME)
- Bhavesh Bhagora (II Year, ME)

EVENT DESCRIPTION –

ESYA, IIIT

D(Indraprastha Institute of Information Technology, Delhi) 's Annual Techfest 2018 .

PROJECT DETAILS –

60KG weight category drum robot.

TECHNICAL TOOLS –

- Micro-Controllers, High power relay circuit
- Mechanical work

आरटीयू के स्टूडेंट्स ने ट्रिपलआईटी में दिखाया अपनी तकनीक का दम

टेक्निकल यूनिवर्सिटी के रोबोटिक्स क्लब की ओर से बनाए गए दो रोबोट

एज्युकेशन रिपोर्टर | कोटा

ट्रिपलआईटी दिल्ली में आयोजित टेक्निकल फेस्ट में राजस्थान टेक्निकल यूनिवर्सिटी के रोबोटिक्स क्लब के छात्रों ने अपनी तकनीकी का लोहा मनवाया। देश भर की 25 टीमों ने भाग लिया था। तकनीकी रूप से एडवांस इन रोबोट्स को बनाने के लिए स्टूडेंट्स को चार माह का समय लग गया है। यहां आयोजित रोबो-वार व रोबो- रेस में आरटीयू के स्टूडेंट्स ने दूसरा स्थान हासिल किया।

इस टूर्नामेंट में एनआईटी दिल्ली के साथ साथ अन्य एनआईटी, स्टेट टेक्निकल यूनिवर्सिटी के साथ साथ कंपनियों की ओर से स्पांसर स्टूडेंट्स ने भी भाग लिया। रोबो वार में आरटीयू की टीमों ने अन्य टीमों के रोबोट को परास्त किया। वहीं रोबो रेस में छात्रों ने 22 अलग अलग बाधाओं को मात्र सात मिनट में टॉस्क को पूरा कर लिया। यूनिवर्सिटी के वीसी प्रो.एनपी कौशिक, रोबोटिक्स क्लब कार्डिनेटर डॉ. दीपक भाटिया इस बड़ी उपलब्धि बताया है। यहां आने के बाद भी छात्रों ने अपना प्रजेंटेशन यूनिवर्सिटी के शिक्षकों के सामने रखा।

ट्रिपलआईटी दिल्ली में दूसरा स्थान हासिल करने वाले आरटीयू के रोबोटिक्स की टीम

इसीलिए मुश्किल था चैलेंज

आरटीयू के पास सीमित संसाधन है और फंडिंग में एनआईटी की तरह नहीं होती है। ऐसे में 60 किलो के रोबोट के मूवमेंट, अलाइनमेंट, बैलेंस, स्पीड आदि का ध्यान रखते हुए तैयार करना बड़ा चैलेंज था। एक भी तकनीकी पहलू बिगड़ने पर रोबोट इस टूर्नामेंट में लंब नहीं चल पता। इस कारण रोबोट को तैयार करने के बाद कई बद उसकी टेस्टिंग की गई। एनआईटी दिल्ली व अन्य प्रोफेशनल संस्थानों के बावजूद आरटीयू क्लब वे अच्छा परफार्म किया।

इनकी टीम को मिली सफलताः
रोबोट बनाने वाली टीम में प्रकाश फंवार, प्रीतम कुमार, विवेक, कोस्तुम व अक्षय ने मिलकर तैयार किया। यह भी छात्र किसी एक ब्रांच के नहीं होकर अलग अलग ब्रांच के थे। इंटर डिसीप्लीनरी स्टूडेंट्स ने बेहतर कोर्डिनेशन करके यह दूसरा स्थान हासिल किया।

सीनियर्स की मेंटरशिपः रोबोटिक्स में भी सीनियर्स की मेंटरशिप जूनियर्स को मिल रही है। आरटीयू का यह क्लब वी लर्न वी शेयर की पद्धति पर काम करता है। यही कारण है कि प्रतियोगिता में प्राइवेट कॉलेज के छात्र भी आरटीयू के स्टूडेंट्स से पीछे रह गए।

8. TECHNEX'18

TEAM MEMBER DETAILS –

S.NO.	NAME	ROLL NO.
1.	AAKASH KHANDELWAL	17/342
2.	AMIT NAMA	17/565
3.	ANSHUL VIJAY	17/350
4.	ARCHANA KUSHWAHA	17/567
5.	BALMUKUND PANDEY	16/349
6.	GOUTAM SINGH	17/412
7.	HIMANSHU PARIHAR	17/413
8.	HITESH MEENA	17/414
9.	ISHWAR SINGH SOLANKI	16/145
10.	KAUSTUBH SAHU	16/458
11.	PANKAJ SHARMA	16/039
12.	PARUL MEENA	17/419
13.	PRABHU SINGH	17/421
14.	PRAMOD KUMAR	17/521
15.	PRITAM	16/373
16.	RAJAT SONI	17/378
17.	RITUL JAIN	17/425
18.	SAGAR RAMLANI	17/427
19.	PRAKSH PANWAR	16/238
20.	SHIVANI AGARWAL	17/388
21.	SIDDHANT SHARMA	17/390
22.	TANMAY KHANDELWAL	17/392
23.	VIKASH KASWAN	17/398
24.	VIVEK RAJOTIA	16/430

EVENT DESCRIPTION –

Technex is the annual techno-management fest of Indian Institute of Technology (BHU), Varanasi is up with its 2k18 edition! The enthralling three days of the event will be jam-packed with a plethora of exercises. 'Think talks', as the name suggests, will intrigue the intellect with talks from people hailing from different spheres of life.

For the eccentrics and innovators, the 'Start-Up Fair' will let one manoeuvre through the corporate world and bring up visionary changes. Moreover, the 'Corporate Conclave' gives all the business enthusiasts, the chance to interact with executives point-blank and be a spectator of how the real-world functions.

Various events in which our teams participated are:

- **HURDLE MANIA: -** An endurance robotics race event. Construct a racing bot (wired/wireless) which can compete against the opponent bot while traversing through the arena full of the sharp turn, rough paths, undulation, and zig-zag paths and wedges, etc.
- **Maze explorer: -** Autonomous Grid-solving robotics. To design a fully autonomous bot which can find its own way to the final checkpoint traversing through the maze detecting the nodes.
- **Momentum: -** A water rocket event. Design and construct a water propelled rocket pressurized with air to complete against various constraints in separate rounds to encounter your opponents.

TECHNICAL TOOLS –

- ✓ ARDUINO IDE
- ✓ ARDUINO UNO R3 MICROCONTROLLER BOARD, ULTRASONIC SENSORS, INFRARED SENSORS, VOLTAGE REGULATORS
- ✓ 500 RPM JOHNSON DC GEARED MOTORS, 300 RPM DC GEARED MOTORS.

Reference: - *https://www.technex.in*

9. 3D Printing Workshop

Nowadays use of 3-D printing is gradually increasing, it makes the work very easy, reliable, fast and accurate.

Workshop of 3-D printing workshop conduct by Agani Enterprises, Kota and Robotics Club in RTU, Kota. In this workshop the students were taught the benefits, working and uses of 3D printing. In 3D printer their is a filament which melts due to high temperature and settle down according to the shape given through the software.

3D Printing is an Additive Manufacturing technique that creates a physical object from a virtual 3D CAD model by depositing successive layers of material. They work like the traditional inkjet printers, but instead of ink, a 3D printer deposits desired material to manufacture an object from its digital format. 3D printing and rapid prototyping, in general, are widely claimed to have revolutionized not only the manufacturing industry but also many other walks of life like medicine, aerospace and automotive industry.

It was really a very nice and useful workshop. About 50 students of robotics club were present there. They give us out of information regarding it and clear all the doubts. They also show some models made by 3-D printer.

10.   Organised Basic programming and Embedded Robotics class in Induction program and Also Embedded Robotics Workshop

Robotics club conducted regular classes on programming basics and Embedded robotics during the induction program held during 01-08-18 to 15-08-19 and in that period 12 classes were conducted with participation of about 200 first year students. The motive of the classes was to introduce the fresher students with the programming and basic electronics which they eventuallly had to encouter later. So the task was to make the students free of programming fear. These classes later resulted in an increase in the participation of the students in technical activities than in the previous few years.

11.   THAR 2K18

THAR, the annual techno-management fest of University Teaching Departments-Rajasthan Technical University, Kota aims to bring not only your techno-management skills under scrutiny but one's ability to survive in a competitive world.

Robotics Club Events: Robo-Race

Robo-War

Track-O-Mania

Robo-Shocker

Exhibitions

12.   Robotics Club Embedded Robotics Workshop 2018

Robotics Club presents Embedded System & Robotics with Embedded 'C' using Arduino UNO R3 microcontrollers. Arduino microcontrollers are useful for many applications. A microcontroller is essentially a tiny computer and can be programmed to do many things. Input and output are handled through the numerous pins on the microcontroller. It is possible to hook up sensors, switches, lights, motors, and many other items to the pins, which allow it a great range of uses. Thus, Arduino microcontrollers are often used for prototyping and robotics projects.

Topics Covered during the Workshop

- Basics of Electronics.
  - * Practical understanding of all major electronic Component.
  - * Working with Resistance, Diode, capacitor, LED, ZENER, Basic ICs
- Embedded System design
  - * Introduction to micro controller
  - * What is a micro controller? What's inside it?
  - * What makes it an embedded system?
  - * What are the different families of microcontroller, its derivatives and its applications in industrial projects?
  - * Why Arduino is the most widely used micro controller family?
- Introduction about Arduino
  - * Starting with embedded systems
  - * Arduino Microcontroller Programming
  - * Arduino Basics
  - * Arduino Architecture
  - * Arduino board layout.
- Programming fundamentals (C language)
- **Project 1:** Simple LED Program
- **Project 2:** LED Blinking
- **Project 3:** RGB Interfacing & Traffic Light Control
- **Project 4:** IR Sensor, DC Motor Interfacing & Automated Door Opening System
- **Project 5:** Controlling Direction of Motor (Forward, Reverse)
- **Project 6:** LCD Interfacing

- **Project 7:** Interfacing Bluetooth Module

Robot Assembling

- **Robot 1:** Line Follower Robot
- **Robot 2:** Obstacle Avoider Robot
- **Robot 3:** Android App Based Controlled Robot over Bluetooth
- **Robot 4:** Edge Avoider Robot

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