



ANNUAL REPORT 2019-2020



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DJ STRIKE

Date: 2nd August 2019 to 11th April 2020.

Response: 300 students

Conducted by: IETE-SFs committee in association with the faculty of EXTC Department

About Strike

IETE-SF's DJ Strike aims at bridging the gap between knowledge and application. The sole annual project based competition of DJSCE; DJ Strike attracts a large enthusiastic crowd from the college. Realising how imperative application based learning is, more number of students across all disciplines come forth every year to take part in the competition.

The review process is carried out in four steps. Initially, students were required to form a group and unanimously select a particular topic for the project. After zeroing on the topic, a design report was submitted in the first review, which not only included the technical aspects but also provided an overview about the cost-effectiveness and the impact the project carries on the society.

The next step is the second review where the group showed 20 percent progress of the project. This progress report is a representation of the basic structure of their chosen topic. The members were screened whereupon they were assessed by reviewers on the basis of concept clarity, efforts and research. During this process, the faculty constantly guided and motivated students to improve their project by sharing their wisdom with the teams.

Next in line is the third strike review, where the team has to demonstrate about 80 percent of their project.

The final project submission includes the exhibition of the entire project with personnel coming from outside of the college to grade the project.

The top five winners of DJ Strike qualify for DJ Spark which is a state level Competition. Winning projects will then be competing against other projects from across the state.



DJ STRIKE-FIRST REVIEW



Date of the event: 28th, 29th and 30th August, 2019.

Participants: More than 300 students.

Objectives of the activity:

- To fulfil the agenda of DJ Strike 2019 - Project to Product
- To bridge the gap between knowledge and application.
- Explore and integrate various concepts into one project.

Contents:

DJ Strike, a project-based competition organised by IETE-SF, was initiated by Head of Department, Dr. Amit A. Deshmukh, for the academic year 2019-20 with the motto: '**Project to Product**'. The main objective of DJ Strike is to provide an opportunity to the students to develop and apply technical skills. Thus, this is a great medium to encourage students to create projects worthy of being final products.



The first review of DJ Strike was conducted over the course of three days-28th, 29th and 30th August, 2019. Each team was given a particular time slot where they could come and present their documentation to the reviewer. The documentation included an abstract and block diagram about their respective topic. Students were required to explain the methodology and plan of action which they would use to execute the chosen project topic. Along with this, they had to prepare a budget of their project and give the reviewers a rough estimate of the cost of the project. Each team also had to explain the motive behind choosing their respective topic and state its relevance in today's age. A sample document had been provided to all teams for them to use it as reference.

The board of reviewers included Dr. Amit A. Deshmukh, EXTC Head of Department, Prof. Anuja Odhekar, Branch Counsellor, along with Strike Coordinators Prof. Yukti Bandi and Prof. V. Venkatramanan. Prof. Ameya Kadam, Prof. S.B. Deshmukh, Prof. Poonam Kadam, Prof. Rahul Taware, Dr. Sunil Karamchandani, Prof. Ranjushree Pal, Prof. Aarti G. Ambekar, Prof. Shivani B. , Prof. Tushar Sawant, Prof. Archana Chaudhary, Prof. Revathi AS, Prof. T.D Biradar, Prof. Mrunalini Ingle, Prof. Venkata APC, Prof. Vishakha V. Kelkar also assisted in conducting the strike review. The reviewers judged the teams on the above parameters as well as cross questioned the students on the same. Throughout the review, a lot of emphasis was given on developing application-based skills. The concept clarity of the students was also put to a test.

After presenting their topics, the faculty members gave them valuable suggestions to help them improve their projects. They also corrected any error in the methodology that would create a hindrance while implementing the project. The score given to each team by the reviewer was recorded and will be added to the final score of the project.

Outcomes:

- The students learnt how to implement concepts while working on projects.
- The students developed a systematic approach towards their respective topic.
- Indulged in a lot research in order to develop their project.



Photograph of the event:



Review for DJ Strike being conducted by Head of Department, Dr. Amit A. Deshmukh



DJ STRIKE SECOND REVIEW



Date/s of the event: 3rd, 4th, 5th October

Participants: 60+

Objectives of the activity:

- To track the progress of DJ STRIKE participants, till minimum 20% completion
- To give STRIKE participants advice and a direction to work in.
- To rectify any mistakes made in the physical interpretation of the project



Contents:

The second review of STRIKE took place on the 3rd, 4th and 5th of October, 2019. The primary objective of the first DJ STRIKE review consisted of the groups deciding and finalising of the topics and the minimum expectations that the professors had from the teams. The teams worked rigorously on the guidance provided. The board of reviewers for the second review include Dr. Amit A. Deshmukh, Head of Department EXTC, Prof. Anuja Odhekar, Branch Counsellor, along with Strike Coordinators Prof. Yukti Bandi and Prof. V. Venkatramanan as well as the faculty members of EXTC department, Prof. Ameya Kadam, Prof. S.B. Deshmukh, Prof. Poonam Kadam, Prof. Rahul Taware, Dr. Sunil Karamchandani, Prof. Ranjushree Pal, Prof. Aarti G. Ambekar, Prof. Shivani B. , Prof. Tushar Sawant, Prof. Archana Chaudhary, Prof. Revathi AS, Prof. T.D Biradar, Prof. Mrunalini Ingle, Prof. Venkata APC, Prof. Vishakha V. Kelkar. The groups were allocated different timings throughout the three days. It was expected from the groups that at least 20% of the project work should be finished with. The projects were scrutinized and/or their concepts were polished on.

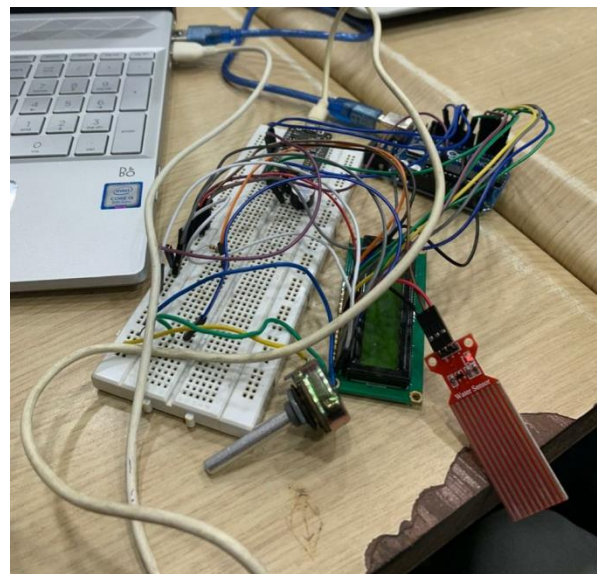
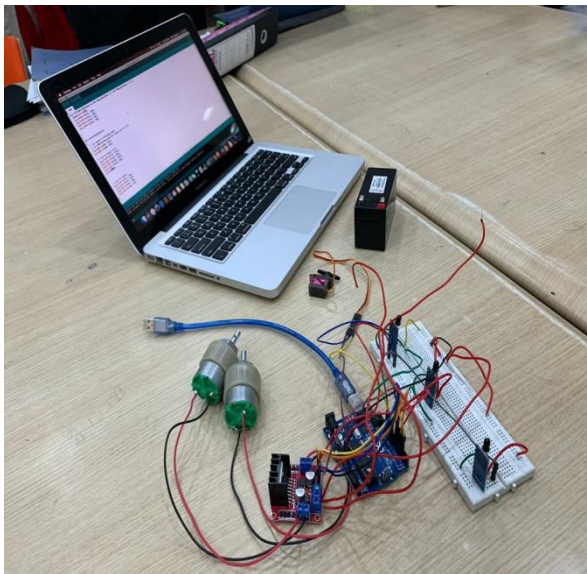
The HOD encouraged the students to complete their project by the next review.

Outcomes:

- The students' projects were verified and their confidence was boosted when they were provided help and given encouragement.
- It was easy for students to check whether they were going on the right track with respect to their projects.
- Guidance by the experts paved a way for the students to perform with maximum efficiency



Photographs:



Some of the projects in action



Students explaining the working of their project



Strike Coordinators Prof. Yukti Bandi and Prof. V Venkatramanan reviewing a project



Dr. Amit A. Deshmukh giving suggestions to a group

DJ Spark is an annual project based state level competition where students are provided with an opportunity to showcase their technical skills and compete at multiple fronts with other students from all across Maharashtra. In order to participate in DJ Spark, one has to send across a technical paper of any on-going project or any other project idea which they aim to execute. The technical paper should be in accordance with the IEEE format. After sending the technical paper at the mentioned email-address, they will be subjected to scrutiny and assessment by the faculty of the EXTC department. The short-listed teams will then be given a chance to exhibit their projects at our very own college. In addition to this, their project will also be assigned an ISBN Number, irrespective of whether the team wins the competition, which holds immense value during the course of engineering. On the contrary, those who win the competition are awarded cash prizes and other exciting prizes. DJ Spark proves to be an inspiration to budding engineering students and gives them an incentive to expand their knowledge, indulge in application based learning and flourish. It encourages students to step outside of their comfort zones and build something



Shri Vile Parle Kelavani Mandal's
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(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)



innovative, catering to an array of applications and at the same time bring about a change in the world.

Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

DJ SPARK
11th April, 2020

Email technical papers to:- djscesparkpapers@gmail.com

Cash Prizes :	1 st Prize - ₹ 12,000	Contact Info :	Bhavya - 9619098584
	2 nd Prize - ₹ 8,000		Harsh - 9892484277
	3 rd Prize - ₹ 6,000		Anuj - 8976630196

Last date for project paper submission:- 25th February, 2020

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FACILITIES PROVIDED BY IETE-SF

Book Bank

IETE-SF provides the students with a book bank facility where they can issue reference books at nominal rates for the entire semester. Students who want a better insight into the subject avail this facility as these reference books aid in developing a good understanding of the topics and enable them to consolidate their foundation of the subject

Component Bank

IETE-SF provides a component bank facility where students can borrow electronic components which they require for executing multiple projects both in and outside of the curriculum. They can utilise the facility by initially paying 50% of the cost and getting a refund of 20% on returning the components, provided that they are undamaged.



WORKSHOP ON ETHICAL HACKING



Expert:

Utsav Bheda(Day 1), Sachin Dhedia (Day 2)

Association of the experts: Founder and CEO of Skynet Secure Solutions

Date/s of the event: 25th August, 2019 and 1st September, 2019

Participants: 60+ participants

Objectives of the activity:

- To give an introduction and spark interest about ethical hacking in the minds of students
- To explain students how different systems and softwares operate in regard to ethical hacking
- To give highly interested students a direction for future ethical hacking education



Contents:

An ethical hacking workshop was conducted by IETE-SF with ICWICOM in association with Skynet secure solutions. With increasing dependency on software solutions in our day to day life, cyber security has become extremely essential. Hence, first year engineering students were given an opportunity to dive into this deep science and learn how to protect themselves from experts. The workshop was held on two Sundays.

Mr.Bheda started off day one by telling the students about the five steps of ethical hacking. All the learning process was based on the Microsoft application 'Command prompt'. Through this the students learnt about IP addresses, their computer identity and how computers behave in a network at a fundamental level. The bedrock of this topic, which are the different levels of security were broken down in detail. Later, after the lunch break, a software KaliLinux taught students about ping, zen maps and keyloggers.

On the second day, Mr.Sachin Dhedia came to teach the students. Initially, he explained how to 'inspect elements' in a pre-typed password and how to interpret this information correctly. They were then taught about online phishing and how to avoid it. Software 'Wireless key' was introduced, which helped the students to see what WiFi networks the laptop has been associated with in the past. Lastly, several commands like "msfvenom" and "goldeneye" were taught to students.

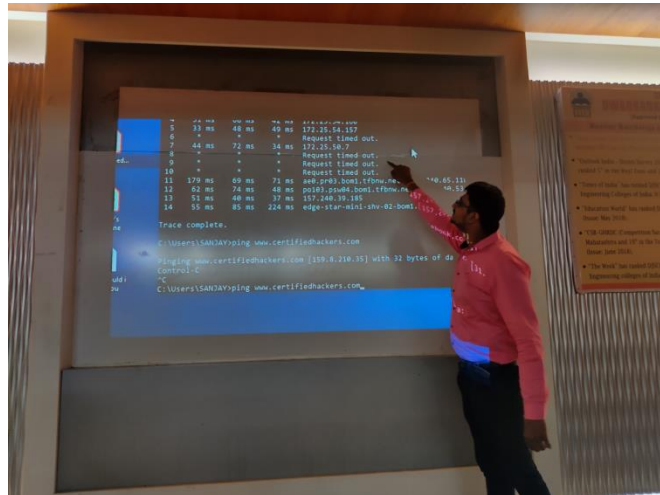
The professor concluded on a positive note, encouraged the students to explore such sciences with curiosity and wished them the best of luck for the future.

Outcomes:

- Students gained a thorough understanding and introduction about the depth of this topic
- Students learnt about their online and computer identity and police forensics
- Students who were further curious about this subject gained a direction to walk on.



Photographs:



A forensics expert explaining his experiences



Expert teaching the students about Internet Protocol address

Student



WORKSHOP ON REACT NATIVE



Conducted by: Rushabh Shroff (Infotech Head at IETE-SF, T.E EXTC student)

Date: 8th, 9th, 10th September, 2019.

Participants: 10-15

Objectives of the activity:

- To learn how to develop various mobile applications using React Native.
- To help students keep track of the evolving technology and incorporate the same in their future endeavours.
- To learn the basics of JavaScript.

Contents:

React Native is an open-source mobile application framework that uses JavaScript to develop mobile applications for iOS and Android. The three-day workshop aimed at making five



different applications like QR Scanner, TODO App, etc. using React Native and various other softwares. The workshop was conducted by the Infotech Head of IETE-SF, Rushabh Shroff. He is adept in various programming languages and has garnered a lot of experience in the same.

Day 1: The workshop commenced with an introduction to React Native and its relevance in today's age. Along with that, an overview was also given about the various topics that would be covered during the course of the workshop. Rushabh Shroff started off by asking the students to download certain soft wares like node.js, visual studio code and Android Studio. These soft wares were used to develop the mobile applications. He also instructed the students to use command prompt in order to access these soft wares. After downloading all the soft wares and initialising them, he moved on to the first Application- QR Scanner. To make the QR Scanner, one can connect the mobile phone or can download any virtual device from Android Studio. In order to write the code for QR Scanner he used the Visual Studio Code which serves as a text editor. He then explained the basic syntax used in JavaScript used to design or style the mobile application i.e. how to write a text or to change the background of the viewing screen. To access the camera for QR Scanner a package is present on the React Native site. Although this package had a lot of errors, the students were assisted while correcting the errors in the code as well as explained the logic behind the same. After setting up the camera, he inserted a scan icon between the camera and the QR code. The set-up was now complete and the QR Scanner was successful in reading the QR codes.

Day 2: Using the same soft wares that had been installed on Day 1, he started with a new application Notes. This project aimed at adding all the basic functionalities of the Notes application. The participants were then taught about "Navigators" in React Native and how to implement them. Navigators basically handle the transition between different scenes in your application. The drawer navigator and stack navigator majorly helped in bringing the Notes App together. The students also did some styling of this app by using the functions taught yesterday. They also handled the function of adding a new note.

Day 3: The last day of the workshop started by an introduction to "Promise" in React Native. He taught them the syntax of Promise and how to use them while building an application. Using Promise, the notes app was completed by adding the deleting and saving functionalities to the code. Later, he started with the courses app where he taught the students how to embed YouTube videos of various courses into an app. This app also handled the list of courses and videos. Then the students also learnt about APIs in React. Towards the end, the basics of web scraping including how to use web scraping to develop an app, was also covered.

Outcomes:

- The students learnt the syntax of JavaScript.
- The students understood the logic behind the codes used to develop the various applications.
- The students were successful in formulating the applications with assistance from the expert.



Photograph of the Event:



Mr. Rushabh Shroff assisting students for developing mobile applications using React Native



INTERNATIONAL CONFERENCE ON WIRELESS COMMUNICATION-2019



Expert: Dr. Debatosh Guha

Association of the expert: Professor at the Institute of Radio Physics and electronics, University of Calcutta.

Plenary Speakers: Dr.Taskeen Nadkar, Dr.Nadeem Akhtar

Association of Plenary Speakers: PHD, IIT Bombay ;

Date/s of the event: 11th and 12th of October, 2019

Participants: 100+ papers presented

Objectives of the activity:

- The review and selection of technical papers on wireless communication
- To give students a deep insight into the field of various fields such as microwave devices, antenna design, signal processing etc.
- To give interested students direction and guidance into these fields.



Contents:

The IETE-SF of D.J.Sanghvi organised the second year of ICWiCOM (International conference on wireless communication) held in the institution for the year 2019. The conference was held across two days on the 11th and 12th October. 100+ papers were presented across eight sessions including, for the first time, 2 Skype sessions, which was the highlight of this conference.

Sessions were where authors from various engineering colleges across India presented their papers and a chairperson judged them. The papers presented were placed throughout the two days with the sessions going on simultaneously along with other events. The sessions in which researchers presented their papers were titled 1) microwave devices and antenna design (I,II,III) 2) embedded and communication systems 3) signal processing and machine learning (I,II) 4) wireless communication and networks (I,II).



On the first day, the Keynote speaker, Dr. Debatosh Guha, a professor at the Institute of Radio Physics and electronics, university of Calcutta was welcomed and he gave his views on “Wireless- In the eyes of an Antenna engineer”. Dr. Guha started by emphasising on being proactive, being ambitious and having set goals. Guha sir started his speech with talking about the university of Calcutta and a few of the notable alumni from there. He explained the history and evolution of communication started in 1831 by Michael Faraday. People consider Graham Bell’s telephone to be the next revolutionary invention, but more credit must be given to Antonio Meucci for inventing the radio in 1884. The first aerial telegraph was sent and many more discoveries were made. Even so, the scientists at the time found it difficult to shape theoretical knowledge into a practical dimension. But the experiment of Michaelson



and Morley changed the game. This experiment demonstrated what Maxwell missed. This gave an indirect inspiration to Bose who was researching on mechanical operations by wireless communication in Trans-Atlantic communication. Dr. Guha finished with talking a little about John Fleming, Marconi and Bose's Coherer and all the controversies attached to it. After Dr. Guha, the plenary on the first day was Dr. Taskeen Nadkar who has worked on the Jio project for 7 years. Dr. Nadkar's speech aimed at giving an insight on Cognitive radio and why cognitive radio is the future. She explained the concept, its scope and limitations. A briefing regarding "Game Theory" was conducted. The objective of the exercise is to achieve "Nash equilibrium", a condition where all players converge at a point making it steady state. She ended by telling some of her experiences as an individual app developer, working in Jio and how the future in cognitive Radio depends on policy regulation. Before the valedictory function, the plenary on the second day consisted of Dr. Nadeem Akhtar on the topic of Wi-Fi 6 (a.k.a AX-Wi-Fi). The origins and history of WiFi was explained by him along with the drawbacks and limitations of WiFi over cable internet and the advantages. Dr. Akhtar explained his job profile and what his company does in the area of WiFi 6 through a presentation.



The conference concluded with the valedictory function, in which a vote of thanks was given to the chief guest, SVKM management, the principal and the vice principal. The guidance of HOD sir, efficiency of the OC and systematic execution of events made this conference a huge success.

Outcomes:

- A platform for judging research papers was channeled by by the IETE-SF of D.J.Sanghvi College of Engineering.
- Ideas and concepts were discussed in depth during seminars giving students an opportunity to explore the industry.



Photographs:



Dr. Hari Vasudevan, Principal at DJSCE, Dr. Amit A. Deshmukh, Head of Department EXTC and Chief Guest Dr. Debatosh Guha addressing the audience.



Dr. Hari Vasudevan, Principal at DJSCE,
felicitating the Chief Guest

SEMINAR ON TECHNICAL PAPER WRITING



Expert: Prof. V. Venkataraman, Assistant Professor, EXTC Department

Date of the event: 15th January, 2020



Number of participants: 45

Objectives of the activity:

- To help understand the relevance of technical paper writing in Engineering.
- To enhance paper presenting skills of students.
- To enlighten students about various aspects of a technical paper.

Content:

The seminar on Technical Paper Writing took place on 15th January. It was conducted by Professor V. Venketramanan, a senior faculty of the department of Electronics and Telecommunication with the main motive of educating students about the various guidelines that lead to the generation of a good technical paper. The seminar commenced with him explaining the relevance of technical paper writing.

There are two methods that can be adopted to try and gather the information to start working on publishing the paper. The first is the engineering approach and the second is the scientific approach. The common structure that both of these methods employ are as follows, firstly we must define the need of the project, then a certain amount of background research should be done along with keeping a record of the bibliography. Specify the requirements and define the target user and the customer. This is the most important part of the research. Similar projects that have been submitted in the past must be looked up and research must be done to establish required criteria. He then explained both methods in detail giving examples for both. An important concept in both the methods was iteration. An elaborate explanation was then provided on iteration as well.

He then summarized the entire procedure in short and how to identify the keywords in the given problem statement. This was just the general overview to how one must approach paper writing. After the general overview the professor then moved onto the actual format of a technical paper and explained each section in detail.

Abstract is the first thing that we must work upon. This must be only three hundred words at the most. It must include purpose and design of project, the materials required and concepts used for the project must be included in the abstract. Most importantly we must consider the target audience for the project. An abstract sample was provided with an introduction, methods used, result and a general discussion on the common mistakes students tend to make while writing the abstract. This generally tends to occur in the length or missing information.

Introduction follows Abstract. We must announce the topic in the introduction and give some background on the project. Keywords must be referred to while writing the introduction and a review of literature must also be provided along with the scope of the topic, the outline of the current situation revolving around the topic and advantages and disadvantages we might face on having the project implemented. This must be around 900 words long. The length of the introduction must not exceed 900 words.

Next comes the Review of Literature. Citations must be provided while writing this. Scan through papers written on similar topics before and write about at least three papers that



have made projects on similar concepts. Block diagram must come next. The working principle and algorithms for software based projects are to be put in after the block diagram.

For the result, we must include the finding of the study without bias or interpretation and arranged in a logical sequence. Preferably graphs and tables should be used to represent the data. In the conclusion, a summary of all the points covered before must be provided the topic must be restated with a statement based upon evidence provided. Lastly the Future Scope and References must be covered.

The session concluded with Prof. V. Venketramanan talking about how one needs to just start writing and then over time with constant revision, one can finally master the art of writing a good technical paper.

Outcomes:

- Students learnt the dos and don'ts of technical paper writing.
- They were made to realize how technical paper writing is as imperative as the technical project.
- They understood the impact of constant content improvisation and formatting during technical writing.

Photographs:





Prof. V. Venkatraman conducting an insightful seminar

INDUSTRIAL VISIT TO GMRT, KHODAD



Date of the event: 17th January, 2020.

Number of participants: 30-35

Objectives of the activity:

- To enlighten the students about the functioning of GMRT.
- To impart wisdom about radio astronomy and receiver technology.
- To expand the knowledge of students in the field of telecommunication.

Details:

An Industrial Visit was organised on 17th January, 2020 to the GMRT located in Khodad near Pune. GMRT stands for Giant Metre wave Radio Telescope. It is handled by the National Centre of Radio Astrophysics which is a part of the Tata Institute of Fundamental Research, Mumbai. This facility was specially set up for astronomical research.

The GMRT has a Y-shaped array of antennas. About 13 to 14 antennas are concentrated at the centre while the remaining ones are spread out in three different directions. The



interferometric array of antennas can estimate readings up to a minimum distance of 25km. Each dish has a diameter of 45m. The design of each dish has been manufactured using the SMART concept. This concept has helped inculcate structural strength and implement weight reductions in the design. SMART stands for Stretch Mesh Attached to Rope Trusses. Due to this, GMRT has proven to be a mechanically strong structure. A grid-like structure is also present at the centre of the dish. The mesh inside this grid is made up of stainless steel wire. This wire is stretched above the rope trusses and thus acts as the reflecting material of the dish.

The GMRT is based on the principle of interferometry which involves interference of electromagnetic waves to extract information. These electromagnetic waves assist the GMRT to study astronomical objects and celestial bodies. Another criterion on which the functioning of GMRT is based is Amplitude Modulation. The bandwidth of the signal is divided into 50MHz, 120-250MHz, 250-500MHz, 550-900MHz, and 1.4-1.5 GHz. All six bands are featured to operate simultaneously and have good polarisation characteristics.

The electronics involved in the dishes are very indigenous and uniquely developed. It has a ten receiver structure system inbuilt. This receiver system includes a superheterodyne receiver. This receiver adopts the method of frequency mixing to convert a received signal into an IF signal. The GMRT also contains low noise amplifiers, mixers, IF amplifiers and bandpass filter. Motors are used for detecting the azimuth, deviation and the feed of the celestial body.

To establish communication between other dishes and the centre, optical fibres are used. They are present on the surface of the dishes and link the entire array of antennas with one another.

The waves from the dishes of antennas are focussed at one point in order to make observations. The multiplication of radio signals from different antennas over several hours leads to the formation of the radio signal of a celestial body with a very high resolution. This radio signal of an astronomical object is then studied and various conclusions can be drawn from the same.

Outcome:

- Students acquired information about the working and telemetry of GMRT.
- They witnessed the antennas present at the GMRT and understood its functioning.
- They learnt about new concepts related to the field of telecommunication which can be utilised in future projects.

Photograph of Event:



An image of students with GMRT in the background.



SEMINAR ON PLACEMENT GUIDANCE- IETE **FORTNIGHT**



Expert: Prof. Tushar Sawant, Assistant Professor, EXTC Department

Date: 1st February 2020.

Number of students participated: 100

Year: S.E and T.E



Objectives of the activity:

- To help students understand the dynamics, intricacies, structure and culture of the placement process
- To prepare students both for technical and non-technical placement aspects
- To deliver placement information from a Superdream candidate personally

Details:

The workshop conducted by Prof. Tushar Sawant was held on Saturday, 1st February, 2020. The workshop began with the professor telling the students about the standard placement test structure including the aptitude test, group discussion and finally the personal interview. The professor primarily suggested that one must either study for their master's entrance or take up a job but never both because it can become tedious to manage. EXTC students were told to put in extra efforts in order to compete with Computer and IT students. He later discussed how on-campus placements have better monetary benefits as well as other facilities as compared to off-campus placements. Students who were planning to do master's later in life were encouraged to work in start-ups and small businesses.

A special guest Ms. Pooja Jha, an alumna of the college, currently working at Quantiphi, was invited to speak a few words about her placement experience. The four types of packages that were spoken about were Super dream, Dream, Normal and Mass Recruiter packages. She started off by emphasizing the importance of having a great personality in comparison to having a stellar academic record. It was discussed that more and more students today apply for non-technical jobs more than ever before and how students can prepare their non-technical profile by getting certifications online about accounting, analysis etc. Non-tech placements offered are mainly divided into three major categories: Sales and Marketing, Consulting and Analytics. Students looking for non-tech jobs specifically were urged to look into creating financial research papers, patents and get used to "Guesstimates" - problems which include estimating the particular figure of objects by considering various factors and parameters for the given situation.

For building one's Résumé, both for technical and non-technical interviews, a few points were discussed. Volunteer work is applauded as it shows good character. One should never put his/her picture on their CV. If any individual is interested in going for both placements, then he/she must have two different résumés highlighting skills and experiences pertaining to the specific field of application. The importance of having a great LinkedIn profile and how it can be used as an excellent tool for job hunting was touched upon.

Professor Sawant concluded the seminar on a positive note and kindly gave the students the presentation to go through at their comfort. The seminar was very informative and covered all aspects of the placement process thoroughly.



Outcomes:

- Students were provided with an in-depth insight into the placement process
- Students gained confidence regarding the common questions asked in aptitude tests
- After discussing the nature of tech and non-tech profiles, students gained clarity about the career path they want to pursue

Photograph of the event:



Professor Tushar Sawant explaining the key aspects of an aptitude test



Alumna Pooja Jha describing her work experience in the industry



Students taking note of the presentation



WORKSHOP ON MATLAB SOFTWARE - IETE **FORTNIGHT**



Expert: Dr. Sunil H. Karamchandani, Associate Professor and Prof. V. Venkatramanan, Assistant Professor, EXTC Department.

Date: 2nd February 2020.

Number of participants: 25+

Year: F.E and S.E

Objectives of the activity:

- To teach the students the basics of MATLAB and how to formulate programs using the same
- To help students acquire knowledge beyond their syllabus
- To explain the advantages of MATLAB over other programming languages



Details:

The workshop conducted by Prof. Venkatramanan and Dr. Sunil H. Karamchandani was held on Sunday 2nd February 2020. They mainly focused on the basic applications of the MATLAB software. The workshop commenced with the basic understanding of MATLAB and an overview of what was to be covered in the workshop. Holding a MATLAB Workshop was necessary as it has an array of applications throughout the course.

Prof. Venkatramanan enlightened them about the basic commands in MATLAB like *clc*, which is used to clear the screen and *spy*, a command which displays the wolf to name a few. These commands are some of the starting points in MATLAB. One can type their entire code in command window. Command history is inclusive in the default layout. It shows all past commands. One can copy past commands into command window. Double-click will execute the command.

He then moved on to the MATLAB GUI. He explained path changing in MATLAB and how it is imperative to maintain proper case since MATLAB is case sensitive. It holds only the most recent result and a semi-colon at the end of the line will suppress the output. The applications include script files and debugging. Workspace present on the right corner of the layout will display the variable and the answer entered in the command window.

This was then followed by solving standard matrix calculations like addition, multiplication and subtraction of matrices and how they could be executed on the software. Next, he moved on to the sorting of a matrix. The default system settings of the sort command and how to put into the system the sorting command of choice was shown. Students were also given a puzzle to solve in order to make the session very interactive and intriguing.

Students Arman Lalani and Dipesh Darda assisted Prof. Venkatramanan in conducting the workshop by teaching students about the Hardware Support Packages available in MATLAB and SIMULINK to program hardware devices. They demonstrated how to program Arduino and Raspberry Pi using the same. A simple blink LED model was made and deployed on Arduino Uno. They then explained the motion detection algorithm and explained the MATLAB code for the same. They also gave an overview of Raspberry Pi as a mini board computer, how it is useful and how to get started with it.

Post break, Dr. Karamchandani took over the seminar. He explained the usefulness of MATLAB in the field of telecommunication, signal processing as well as in plotting of graphs, drawing multiple functions in the same graph, setting colours and setting axis scales. He also taught how to plot bar graphs, draw contours, etc. The session was concluded by explaining the basics of SIMULINK. The seminar was very informative and was a great insight into MATLAB basics.



Outcomes:

- The students had mastered the syntax of MATLAB
- The students were able to code basic programs in MATLAB
- The students were motivated to attempt more complex programs using MATLAB after learning the basics

Photographs of the event:



Prof. V. Venkatramanan felicitating students



Dr. Sunil H.
Karamchandani
teaching students
MATLAB



Students Arman Lalani and Dipesh Darda
assisting Prof. Venkatramanan



WORKSHOP ON ANTENNA DESIGN USING COMPUTER SIMULATION TECHNOLOGY SOFTWARE - IETE FORTNIGHT



Experts: Dr. Amit A. Deshmukh, Head of EXTC Department, Prof. Anuja Odhekar, Branch Counsellor, Prof. Ameya Kadam, Assistant Professor, Prof. Venkata A.P Chavali, Assistant Professor, Prof. Poonam Kadam, Assistant Professor, Prof. Aarti C. Ambekar, Assistant Professor, Prof. Sanjay B. Deshmukh, Assistant Professor.

Date: 5th and 7th March, 2020

Number of students participated: 140

Year: T.E



Objectives of the activity:

- To help students identify different kinds of antenna structures
- To explain in detail the procedure involved in fabricating an antenna
- To familiarise students with the CST Software and design an antenna using it

Details:

The Antenna Design Workshop was held on Thursday, 5th March and Saturday, 7th March. The workshop was conducted specially in interest of Third Year students of EXTC as it illustrates some of the most important topics that fall under the scope of their compulsory course subject Antenna and Wave Propagation. It was primarily conducted by Prof. Anuja Odhekar, Branch Counsellor and Prof. Ameya Kadam; supervised by Dr. Amit A. Deshmukh, Head of Department EXTC and assisted by Prof. Venkata A. P. Chavali, Prof. Poonam Kadam and Prof. Sanjay B. Deshmukh.

The students were first given a brief introduction about various kinds of antennae and the selection criteria of each. During the course of the workshop, students were also shown actual models of microstrip antennae to help them visualise the purpose of the same. Different kinds of applications were discussed and the requirements of each application were listed.

Next, the structure of the rectangular microstrip antenna (RMSA) was explained. The standard procedure for the design of an RMSA was revised and solved on paper. The students were then introduced to the CST Studio Software. It is a software package that can simulate and solve various kinds of electromagnetic problems including particle physics, magnetostatics and many more. Students were instructed to open the Microwave & RF Domain tab. There they could choose any type of spatial structure. As the design of RMSA was being discussed, students proceeded with the planar structure option. The time domain option was selected for further operations and then a settings window opened wherein students could enter the fixed dimensions and the units for variables in use. Finally, the range of frequencies was defined and the fields to be displayed were chosen.

Once all the prerequisite data had been entered, the software created a basic 3D model of the antenna. Students were encouraged to observe the same analytically. They then proceeded to change the values and observe the changes visually, as reflected by the 3D model.

The software has a library of different kinds of materials that can be used to design the antenna. Students experimented using various substrate options till they found the best match as per their requirements. PEC (Perfect Electric Conductor) and FR4 (Lossy) were the substrate materials that were used in the end.

Next, a patch was created using cylinders. The dimensions – inner and outer radii and the range of height – were set. The material was chosen and the result was previewed. Similarly, the feed was designed, added to the model and observed. The theory of different



types of feed lines was also explained simultaneously. Inner and outer conductors may be made of different materials. The Teflon Conductor (PTFE) was also explained in detail.

Once the design procedure was completed, the model was simulated. The results of the simulation were compared with the theoretical evaluation done on paper in the beginning of the workshop, which were found to be accurate to a few decimal points.

The main advantage of implementing the CST Studio was highlighted. The calculations required at each step of designing are extremely time-consuming and complex when done manually.

The workshop concluded with a discussion of other applications of the software. The students were also given a few problems to solve manually at their comfort and implement them later using the software.

Outcomes:

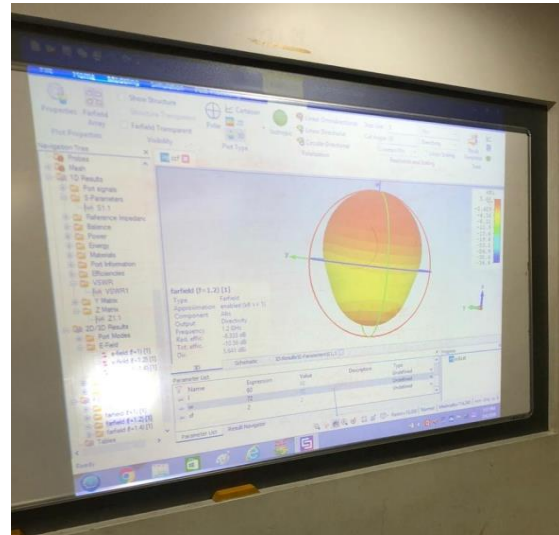
- Students could successfully understand the need for customising an antenna as per their intended application
- Students were familiarised with various options of design parameters practically
- Students got a better understanding of the subject which would help them in their examination



Photographs of the event:



Students experimenting different input parameters



3D model design in progress



Prof. Anuja Odhekar, Branch Counsellor helping a student in simulation



Prof. Anuja Odhekar, Branch Counsellor showing an actual

