VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SDG-9 ANNUAL REPORT 2019-20

9 INDUSTRIES, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

Shri Ram Nath Kovind

Hon'ble President of India

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April, 2

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Report of VIT-Vellore Campus

Promoting innovation in technology, leading to industry connectivity and building physical infrastructure attuned to these goals are vital to long-term economic development of not only a country, but also of humanity at large. Technological progress is obviously the key to finding lasting solutions to both economic and environmental challenges, such as providing new jobs and promoting energy efficiency. Promoting sustainable industries, and investing in scientific research and innovation, are evidently important ways to facilitate sustainable development. Further, it has long been recognized that growth in industry, innovation and infrastructure is pivotal to several other disciplines of development such as productivity and incomes, improvements in health and education outcomes. Evidently, investment in infrastructure could also be related to more avenues for addressing areas around clean water, affordable energy, and even climate change. Keeping these facts in view, VIT, as a centre of excellence in education and research, has always been aligning its policies in tune with attaining the goal industry-innovation-infrastructure. The following points are notable in this context:

A.   INDUSTRY INTEGRATION INTO ACADEMIA:

Basic research with an inclination towards industry has been happening in VIT during the past years. However, several basic issues in industry are not adequately addressed. VIT has been observing that the lack of substantial integration with industry and other stakeholders in India would demand the adoption of innovative strategies to face the mammoth global challenges (https://vit.ac.in/files/VIT-innovation-and-startup-policy.pdf). Further, many times, industries resort to a rule- of-thumb approach in their problem solving, and are denied of exposure to the research happening in the academic institutions. To offset the lacuna, a strong industry interaction is imperative. Collaborative and cooperative research with industry could lead to direct Intellectual Property (IP) generation and/or translation into industrial realization (https://vit.ac.in/sites/default/files/VIT%20IPR%20POLICY.pdf) .

Industry Guest Lecture, included in all the courses has paved the way for strong interactions between the institute and industry. From the Technical Answers for Real word Problems (TARP) course (https://vit.ac.in/sites/default/files/academic/Academic-Regulations.pdf), the students are able to apply their subjectknowledge into real-world problems of the industry.

The project-based internships, currently being encouraged by VIT, is a good learning process which brings new perspectives and is keeping abreast with the industry trends (https://vit.ac.in/sites/default/files/academic/Academic-Regulations.pdf). More than 15 industry-sponsored labs help the students learn the concepts practically through interaction and working methods. Regular industry conclave meetings in every school are further strengthening VIT"s interaction with industry and its technology road maps. Periodic industry visits help the students to update their understanding of the subject and the industry practices in each domain. Preparing and inspiring student minds (PRISM) is an innovative project experience organized in collaboration with Samsung. Industries like Honeywell, JCI, Microsoft, Texas instruments innovation challenge, Makeathon, Codeathon, Buildathon and Hackathon activities are regularly conducted in VIT to address real-world problems faced by the industry. Industry mentors help our students through various entrepreneurship camps. Innovative project collaboration between industry and VIT is being carried out through cooperative knowledge creation and exchange. Industry participation makes students learn from new perspectives and helps create rapport with industry persons. It provides greater clarity and has an impact on their placement interviews. The most meaningful aspect is that such tie-ups acknowledge and capitalize on the relative strengths of academia and the industry. Thanks to VIT"s strategy, students are deployed on prestigious projects by the industry. Industrial mentors recognize the work done by the students, which in turn has resulted in innovation challenge awards and the prestigious ARIIA award from the Government of India in 2019.

Technical Answers to Real-world Problems (TARP)

Operations Research Problem of a running MSME

Water ATM

Co-pyrolysis of Plastic waste with agro-wastes

Automatic call ambulance and PCR van

Blind Aid kit

I.   Industrial Expert Lecture:

As per the curriculum, faculty members used to organize the industrial expert lectures for each and every course. This has been meant for understanding the need of the industries. This kind of lecture actually reduces the gap between the industry and academia. A total of 2038 Industrial expert guest lectures have been conductedso far.

Industrial Guest Lecture: PROCESS SAFETY MANAGEMENT TECHNIQUES by Mr. Balaji Rajasekaran, FLSMIDTH (22-02-2020).

II.   Industry Academia Conclave:

Each school is encouraged to conduct the industry academia conclave (IAC) for bridging the theoretical ideas into technological devices. In this particular year, the School of Electrical Engineering   (https://vit.ac.in/school-electrical-engineering-select/one-day-industry-academia-conclave-e-mobility-integration), School of Electronics Engineering (https://vit.ac.in/school-electronics-engineering-sense/3rd-industry-academia-conclave-2019-create-smart-future),
School of Mechanical Engineering, VIT-Business School (https://vit.ac.in/vit-business-school-vit-bs/industry-academia-conclave-2019-futuristic-business-leaders). A total of 6 IAC has been organized by the various schools of VIT. For instance, the 2nd IAC 2019 was conducted by the School of Mechanical Engineering (SMEC), VIT Vellore on 15 November 2019. 36 Representatives from 31 industries took part in the conclave. 59 faculty members interacted with the representatives from industries. Mahle, SRK polymer, Simtek, BHEL, Sandvik, Scanray, Olitech, ABCmetfab, NIOT, Kemppi are some of the reputed industries which took active part in

the Industry Conclave. Shri Narayana Rao M, MTAR, Hyderabad and former Managing Director, MIDHANI, Ministry of Defence, Government of India was the Chief Guest who inaugurated the Industry Academia Conclave. Representatives from industries shared research topics and possible consultancy works. Follow-up actions are taking place between faculty members and representatives from industries to have collaborative research works, consultancy works and joint product developments.

Industry Conclave conducted by various schools in 2019

III.   Harvesting Industry Linkages in Academics:

(i)   Consultancy Projects:

Industry participation in academics has resulted in 446 consultancy projects in the last three years (https://vit.ac.in/research/industrial-consultancy) .

(ii)   Internships and Placements:

In addition to the consultancy projects, Industry linkages have resulted in 1926 project-based internships and 700 plus companies visiting regularly with attractive job opportunities to our students through the "dream" and "super-dream" offers (https://vit.ac.in/placements/statistics).

(iii)   Patents and Startups:

Industry participation in academics has also facilitated 163 patents published in the last three years (https://vit.ac.in/sites/default/files/Granted-patents-2010-2021.pdf). By exploiting these practices, VIT-TBI supported 25 start-ups, and over 107 workshops on Industry-Academia Innovative during the last 5 years. Almost all the programmes of science, engineering and technology, offered by VIT will have an industry component inasmuch as at least one out of eight modules in each course will be related to industry, and that module will be addressed by a resource person from industry. Further, a substantial part of the syllabi for engineering courses are devotedto industry.

Following are some of the other major innovative steps undertaken by VIT for the furtherance of academia-industry relation.

a)   Consultancy as a tool to stimulate industry partnership:

VIT has a policy on consultancy including revenue sharing between the institution and the individual and encourages its faculty to undertake consultancy and the same is displayed in the institutional website (https://vit.ac.in/sites/default/files/VIT-Consultancy-Policy). Further, VIT encourages faculty members to establish a strong connection with various industries. Faculty members visit identified industries periodically and interact on a continuous basis. This continuous interaction enables faculty members to identify industrial problems for solving through consultancy mode or through student projects. After interactions for about a year and after some salient outcomes in terms of collaboration, the relationship is formalised through Memorandum of Understandings. Sustained interactions have also resulted in industries like Danfoss, Schneider Electric India, Johnsons Controls India and Valeo setting up Industry Sponsored Laboratories (https://vit.ac.in/research/sponsored-research). SpoRIC has created a Technology Development Cell as a network of Institutions and Industries with VIT as the nodal coordinating agency. The major functions of Technology Development Cell are: (i) To increase access of industry to cutting edge technology developed within institutions. (ii) To capitalise on the research base of VIT and partner institutions for evolving world class technology. (iii) To take up collaborative applied research projects along with Industries. (iv) To assess and identify potential technology areas to create a productive ecosystem of industry and institutions. The specific concessions given to faculty members to focus more on Industry Consultancy and Connect include: Transparent revenue sharing mechanism, sponsorship of travel and other expenditure during all official visits, grant of on duty for all such visits, consideration of contributions in extension activities in performance evaluation and reduced academic workload for significant contributions (https://vit.ac.in/VIT-Consultancy-Policy/index.html).

b)   There are several laboratories funded by Industry including, Motorola wireless and RFID Application lab, ETAS simulation lab, IBM Mainframe centre, Pearson Vue esting centre, Microsoft innovation centre, CISCO centre etc. that train the students in state-of-the-art application and instrumentation. Some of the advanced lab facilities in the campus includes, VCARE, Nano Composite, Sol- Gel Biosensor, SEM, NMR Spectrometer, to name a few (https://vit.ac.in/research/sponsored-research).

B. INNOVATION ECOSYSTEM:

Institution has created an ecosystem for innovations including the Incubation Centre and other initiatives for creation and transfer of knowledge. The institution has a well- established "Technology Business Incubation" center known as "VIT Technology Business Incubator (VIT-TBI)", and it has been operational since March 2003 (www.vittbi.com/#/). It is a joint initiative with the Department of Science and Technology, Govt. of India, VIT-TBI has subsequently partnered with TIFAC, TDB, DSIR, MSME and BIRAC of the DBT on various innovation and entrepreneurship programs. VIT-TBI has worked with international agencies such as UNIDO and "infoDev" (The World Bank Group) in the past, which in turn has made provisions to have access to infrastructure, prototype development, research assistance, funding, business and consulting, in a single window mode to early stage technology entrepreneurs. It also makes use of the huge research infrastructure of the institute. VIT-TBI is also a "PRAYAS Center" under the NIDHI scheme of DST for nurturing knowledge-based and technology-driven ideas and innovations into successful start-ups. Further, "BioNEST" - A Bio-incubation Center at VITTBI has been set up with the support from BIRAC, and is a state-of-the art incubation center supporting innovative start-up companies and bio entrepreneurs engaged in the broad areas of life sciences and medical devices.

a)   Industry interaction in bio-based Schools and Centres: It is common knowledge that, until late 1990's, the Life Science/Bio-science Schools (and their Departments) in Indian context, were not grooming their students to be a part of the industry. Realizing these lacunae, VIT has initiated the introduction of industry components into the curricula and syllabi of Bio-science School since more than a decade. During these years, there has been a spiraling growth in the number of (Bio) students of VIT in receiving exposure to the industry ambience; it could be in the form of internships, project-based learning and various other training programmes. Significantly, since 2012, VIT has been holding BIOSUMMIT every year involving major drivers in industry with a view to bridging between the industry and academia. In addition to talks and interactions involving industry personnel, Biosummit would also host panel discussions involving students, faculty members and the industrialists. The major outcome of this venture is that more and more students are getting opportunities to get exposed to the industry (https://vit.ac.in/detailview/biosummit-2019).

BIOSUMMIT 2019

b) **Innovation laboratory**: VIT houses an extensive Innovation Laboratory to encourage the students to get involved in innovative research (https://vit.ac.in/id-innovation-lab). Significantly, this opportunity is accessible to undergraduate and postgraduate students alike. Creation and maintenance of the Innovation Laboratory did pave the way for students' successful participation and winning prizes in industry fests, hackathons and makathons held both within India and abroad.

The other major activities of VIT-TBI include:

(i)   Extending seed funding & grants to start-ups in the technology domains of Energy, Healthcare, Agriculture, Biotechnology and Information technology, and providing infrastructure and resources for R&D with facilities for Design, experimentation and product Development for innovators/startups

(ii)   Encouraging New Product Development in cutting-edge technologies benefiting the society

(iii)   Organising structured innovation & entrepreneurship capacity buildingprogrammes for all the stakeholders at regular intervals

(iv)   Managing the Entrepreneurship Cell (E-Cell) of VIT for the promotion of entrepreneurship on campus

(v)   Through the E-Cell, support innovative student startup projects with VIT grantsup to Rs.5 Lakhs in phases. Details of VIT-TBI are available on http://www.vittbi.com/.

(vi)   Towards establishing a conducive innovation ecosystem, as part of the curriculum, all students undergo two University Core Courses (i) Introduction to Innovative projects and (ii) Lean Start-up Management.

(vii)   These project-based courses enable students to learn through hands-on projects. All schools of VIT periodically organize various Hackathon, Codeathon and Designathon competitions for students

About 60 companies have been incubated or are in the process of being incubated during the past 15 years. Some of the prominent companies incubated by the VIT TBI are: Xcode Life Science Pvt. Ltd., (https://xcodelife.co/); Thinkcore Technologies Pvt. Ltd., (http://www.thinkcoretech.com/); The Meditube Media Pvt. Ltd., (https://www.themeditube.com/); Kvyor Genomics Pvt. Ltd., (http://www.kyvorgenomics.com/); Virtis Bio Labs (http://www.virtisbiolabs.com).

c. Recognition for Innovation:

Vellore Institute of Technology (VIT) has secured the top spot among private institutions in the Atal Ranking of Institutions on Innovation Achievements (ARIIA 2019) awarded by the Ministry of Human Resource Development (MHRD). In order to promote innovations in Higher Education Institutions (HEI), MHRD came out with ARIIA. ARIIA is an initiative to systematically rank all major higher educational institutions and universities in India on indicators related to "Innovation and Entrepreneurship Development" amongst students and faculties. VIT Chancellor G. Viswanathan received the award from His Excellency Mr. Ram Nath Kovind, President of India, during the presentation ceremony held for the release of the National Institutional Ranking Framework (NIRF) in the year 2019.

(https://www.thehindu.com/news/national/tamil-nadu/vit-named-most-innovative-private-institution-atal-ranking-of-institutions-on-innovation-achievements-ariia-2019-ministry-of-human-resource-development-mhrd/article26786817.ece).

Atal Ranking of Institutions on Innovation Achievements (ARIIA 2019) awarded by the Ministry of Human Resource Development (MHRD)

Certificate of ARIIA 2019 award

In addition to ARIAA award, VIT also bags the FICCI Higher Education Excellence Award 2019 for "Excellence in Enabling Research Environment (https://vit.ac.in/vit-bags-ficci-higher-education-excellence-award-2019-excellence-enabling-research-environment)

VIT bags the FICCI Higher Education Excellence Award 2019 for "Excellence in Enabling Research Environment

Certificate of FICCI Higher Education Excellence Award 2019

C. INFRASTRUCTURE AND LEARNING RESOURCES:

The institution has adequate facilities for teaching - learning. viz., classrooms, laboratories, computing equipment, etc. Response: Departments of Vellore Institute of Technology are located in the Main campus (VIT Vellore) and the VIT Chennai campus. VIT is spread over 563.65 acres of land. Of the total built-up area of 7,65,294 sq.m, an area of 2,20,158 sq.m is used for academic activities (classes, labs, library, auditoriums, etc.) and 4,56,319 sq.m

for hostels. The remaining area is used for support facilities like playgrounds and canteens. At VIT, strategies are adopted for delivering teaching – learning process, which includes interaction and direct contact between the student and teacher in class rooms, laboratories and library. We have well-furnished classrooms, ubiquitous ICT facilities, state-of-the-art laboratories and excellent computing facilities for nurturing teaching – learning and research. The picture given below illustrates how the services are designed so that students can learn effectively. Classrooms: VIT has 375 class rooms that cater the needs of UG and PG programs, including specialized interdisciplinary programs. All the classrooms have LCD facility, Wi-Fi connectivity and equipped with smart board as well as white board. This facilitates multimedia presentation and also enables lecture capturing. It is well equipped with facilities of effective teaching and learning as per AICTE (for UG & PG programs), Council of Architecture (for UG programme) and The Bar Council of India (for UG programme). VIT is very well equipped with laboratory facilities for hands-on training of UG and PG students. Additionally, it has specialized laboratories that provide interdisciplinary facilities with state-of-the-art equipment for PG & Ph.D. students to carry out their research work. The institute has 341 teaching and research labs in various programs.

a)   **Computing Equipment**: Currently, computing equipment has become the backbone network of any discipline and smartphone and Wi-Fi enabled for students of Generation Z. With foresight, VIT established IT infrastructure that has been widely spread across academic buildings, laboratories and hostels using high speed robust networks with access to Internet through multiple ISPs. All computers are connected to the internet over high-speed cables facilitating a 1:4 availability of computers to students. The computer laboratories cover many cutting-edge research sectors, such as Networking & Pervasive, Cloud Computing & Data Analytics, Analog & Digital Circuits, to mention only a few. VIT provides uninterrupted access to information and network services with

12.155 Gbps of internet bandwidth and over 2251 Wi-Fi access points. The security solutions

from Palo Alto, McAfee, CISCO AMP & K7 etc. are used to secure campus IT facilities. Energy efficient, large data storage system built to the needs of the stakeholders for storage of their academic data. As technology demands, it has also subscribed to a wide variety of software licenses. File Description Document Upload any additional information View

Document Paste link for additional information View Document 4.1.2. The institution has adequate facilities for cultural activities, yoga, games (indoor, outdoor) and sports. (gymnasium, yoga centre, auditorium, etc. In order to be mentally and physically fit, VIT provides state-of-the-art facilities with magnificent air- conditioned gymnasia, snooker hall, play grounds, stadium, indoor courts as well as a number of centres for physical education & sporting activities that help students stay healthy and fit (https://vit.ac.in/campuslife/sports). These facilities develop a spirit of sportsmanship among students.

b)   **Library as a Learning Resource**: Having adopted the state-of-the art technology with Integrated Library Management System (ILMS) and has digitisation facility, the library facility of VIT is one among the best available in the country (https://vit.ac.in/academics/library). VIT Central Library began the process of automation in 1998, with barcode technology using the in-house software for issue and return of books. In 2008, it was upgraded to a fully automated process with commercial ILMS, LIBSYS version 4.0 with web-centric applications. In 2015, LIBSYS software version 7.0 with RFID technology was introduced. The new LIBSYS-ILMS has modules for book acquisition, cataloguing, circulation and serial management (periodical management). Members can browse and search the library collections with extended bibliographic details using WebOPAC (federated search) facilities. Value added services such as Current Awareness Services (CAS) and Selective Dissemination of Information (SDI) service are also provided. In 2019, the library migrated to the ILMS-KOHA 19.05 from LIBSYS-7.0 Version with RFID Technology and biometric authentication. MARC 21 (Machine Readable Catalogue) interface is available with AACR2 format for information browsing and searching. The Central Library is equipped with a modern, high speed scanner, BOOK EYE- 4 for document scanning which follows the copyright act. The library has developed an Institutional repository intranet portal which contains a list of publications (which do not fall under copyright act) of faculty members and Ph.D. thesis in a browsable and searchable format (https://vit.ac.in/files/library-policy.pdf).

Facilities for e-content development comprise: 1. Media centre 2. Audio visual centre 3.Lecture Capturing System(LCS) 4.Mixing equipment and software for editing,

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Report of VIT-Vellore Campus

Preamble

a) Develop quality, reliable, sustainable, and resilient infrastructure with focus on affordable, and equitable access

b) Enhance scientific research, encourage innovation and sustainability increasing the number of research and development works

c) Support domestic technology development, research and innovation

d) Significantly increase access to information communication technology

Policies / Major decisions taken regarding the SDG

The research group at School of Mechanical Engineering (SMEC) in VIT Chennai is actively involved in cutting edge and innovative projects such as cost effective waste water recycling, solid waste management systems which are sponsored by DST SERB and DST WTI, GoI. The institute ensures recycling of grey water for circulation in toilets and gardening purposes. The energy efficient infrastructure ensures proper energy conversion and storage. The well planned and comprehensive infrastructure layout have been excellently planned to make the maximum utilisation of the campus. The campus is thus a perfect atmosphere for research and studies.

Academic Details pertaining to the SDG (Launch of program, inclusion of course, modifications in syllabus etc.)

The School of Electrical and Electronics Engineering (SELECT) has 12 labs with modern infrastructure and a Center for Industrial Automation sponsored by MSME. In addition to core electrical and electronics lab infrastructure, state of the art facilities are available in labs like Smart grid lab, Protection and switch gear lab, PCB fabrication and testing lab, and Advanced Electrical drives lab. The School has the latest simulation tools to cater to various specializations and it is equipped with the latest experimental and computational facilities. Laboratory facilities enable the students to solve real world engineering problems defined by industries, participate in various project competitions and obtain internships. Students get "Industry Ready" through industry linkages and get placed in core electrical companies, software and analytics sectors. The schools has signed MoUs with universities and industries like LUCAS TVS, kWatt Solutions, Nokia Solutions, CDCE HP Automation and Robotics, Daewon India Auto Parts Pvt Limited, Sekisui Dljm Molding Pvt Ltd and Shri Vishnu Magnetic Pvt Ltd to give students the opportunity to get industry exposure through various collaborative activities. Several lab based certifications programmes are also organized to train students in

conducting experiments with industry standards for better placement prospects. Students are associated with the faculty members in real time consultancy projects.

The School of Electronics Engineering (SENSE) has modern state-of-the-art laboratories in the areas of Semiconductor Devices, Micro and Nano Devices, Analog Circuit Design, Digital System Design, Digital Signal Processing, Embedded Systems and Architecture, Microprocessors and Microcontrollers, Communication Engineering, Wireless Technologies, Internet of Things (IoT), Microwave and Optical Communication, Computer Networks and Advanced VLSI Design.

The School has the latest industry-standard simulation tools (TCAD, Intellisuite®, Cadence®, Tanner, Mapusoft RTOS, HFSS, ADS, Microwave studio, Netsim and RSoft tools) catering to various circuit branch specializations, and is equipped with facilities for synthesis, characterization and measurement of experimental and theoretical results.

The state-of-the-art "Microwave and Antenna Measurement" lab has been successfully offering professional test services that involve the antenna characterization in the anechoic chamber. The anechoic chamber is fully automated and fully shielded chamber ranging in frequency from 700 MHz to 18 GHz dedicated for RF Measurements.

The pride of the School of Mechanical Engineering (SMEC) lies in the significant research funding received from several government agencies and private agencies such as DST, DRDO, MNRE, CSIR, CVRDE, CPDO, IE, AR&DB, CVRDE, BRNS, ISRO, UGC, NRB, AICTE, and Assault Systems La Foundation, etc., Memoranda of Understanding (MoU) have been signed with various industries, research organizations and leading universities. The school has modern facilities, enabling cutting edge research in a wide spectrum of technological areas. The school actively assists local industries in product design, complex-part manufacturing, and other competent areas.

Major events organised

a) Workshops, Conferences and Seminars: Apart from various schools, VIT Chennai has an Academic Staff College (ASC) for providing training to the faculty members and staff in the essential and emerging areas that would lead to innovation. ASC and other schools across the campus conducted many workshops, conferences and seminars to promote industry institute interaction and promote innovation in various emerging fields. Some of them are listed below:

School/Centre	Workshop/Conference/Seminar	Title	No.of days	Total no of participants
ASC	Seminar	IoT with Machine Learning – Use Cases	1 (23.08.2019)	20
ASC	Seminar	Industry 4.0 and Block Chain Technology	1 (23.08.2019)	10
SELECT	Workshop	Industrial Automation and Industrial IoT (IIoT)	1 (12.10.2019)	10
SMEC	Workshop	Industry Certification of Solid Works	1 (12.10.2019)	32
SMEC	Workshop	Simulation of conventional and innovative refrigeration systems using cycle-tempo	2 (4.01.2020-05.01.2020)	21
SCOPE	Seminar	Information Security, AI and Industry 4.0-At Full Throttle	06.02.2020	42
SELECT	Workshop	IoT Based Smart Monitoring and Control Systems	1 (22.02.2020)	30
SMEC	Workshop	One Day National Workshop on Intelligent Vehicle Technologies	1 (13.03.2020)	80
SENSE	Seminar	Internet of Things to Internet of Everything	1 (30.04.2020)	74
SENSE	Seminar	E-Learning Lecture: Outlook in Post Covid-19	1 (1.05.2020)	22
SSL	Seminar	Covid-19 and Technological Solutions	1 (19.05.2020)	103
SENSE	Seminar	IoT verticals from Theory to Practice	1 (23.05.2020)	8
SMEC	Seminar	Research on End Milling of Maraging Steel using PVD Coated/Cryogenic treated Cemented Carbide inserts and Selection of Fan-Methodology in Transport Refrigeration	1 (05.06.2020)	41
SELECT	Seminar	Connected to IoT networks and Data Platform	1 (12.06.2020)	32
SCOPE	Seminar	Smart Everywhere: How IoT is making Impact on us	1 (18.06.2020)	49
SMEC	Seminar	Education 4.0-Industry 4.0	1 (20.06.2020)	92
SCE	Seminar	Value Chain of the Real Estate Industry	1 (28.06.2020)	55
SCOPE	Seminar	Role of the Next Generation Distributed Ledger Technology: IoTA in Developing Secure and Smart IoT Solution	1 (06.09.2020)	67
SCOPE	Seminar	Scope for Entrepreneurial Skills	1 (06.11.2020)	31

Lectures organised to enhance student awareness

The faculty members of VIT Chennai organised many lectures by industry experts to enhance student awareness on solutions for typical industry problems. This would give them a good exposure on the applications of theoretical concepts being taught in their courses. Some of the lectures organised by our faculty members are listed below:

S. No	Name of the faculty member	Title of the lecture	Date
1.	Velmathi G	Technological Solutions to Silicon Industry by Mr. S. Gokulakrishnan, Design Engineer, Mobiveil Technologies Ltd, Chennai http://www.mobiveil.com/	06.11.2019
2.	Bindu B	Trends for Wearable and Medical Devices by Professor, Dr. Subhas Mukhopadhyay School of Engineering, Macquarie University, NSW 2109	16.12.2019
3.	Usha Kiran Kommuri	Application of Sensors and Instrumentation in Industry by Mrs. Chenthamarai Selvam, Deputy Director & Sr. Principal Scientist (Rtd), CSIO, Chennai	31.01.2020
4.	Jagannath M	Robotics and Automation and Wireless and Mobile Communication by Mr. R. Nithya Shankar Product Testing and Student Mentor SP Robotics Makers Lab, Chennai	19.02.2020
5.	Ananiah Durai Sundararajan	Opamp and its Industrial Applications by Mr. Vikram Gopinath J.S., RTL Design Engineer, Microchip Technology Chennai	21.02.2020

These guest lectures by the industry experts were eye-opener for the students. Based on these lectures, few projects were undertaken by the students which provide feasible solutions for some of the industry problems.

Guest Lecture on 'Technological Solutions to Silicon Industry' by Mr Gokula Krishnan, Design Engineer, Mobiveil Technologies Ltd, Chennai, on 06.11.2019, imparted a valuable discussion on the development of Si Intellectual properties (SIP), platform and solutions for Data Centre,

Networking and IoT markets. The lecture revolved round the explanation of the memory controller and flash storage devices that impressed the students.

Dr. Velmathi G felicitating the speaker from Mobiveil Technologies Ltd.

Dr Subhas Mukhopadhyay, School of Engineering, Macquarie University, NSW, on 16.12.2019, delivered a talk on 'Trends for Wearable and Medical Devices'. He explained the advancement of sensing technologies, embedded systems, wireless communication technologies, nano technologies, and miniaturization in developing smart medical systems to continuously monitor activities of human beings.

Dr. Subhas Mukhopadhyay delivering a talk to the students

Guest Lecture entitled 'Applications of Sensors and Instrumentation in Industry' by Mrs Chenthamarai Selvam, Deputy Director and Sr. Principal Scientist (Retd) CSIO, Chennai, on 31.01.2020, dealt with contemporary issue and the underlying challenges in application of sensors and instrumentation in the Industry.

Dr. Chenthamarai Selvam felicitated by a student of VIT, Chennai

Guest Lecture entitled 'Robotics and Automation and Wireless and Mobile Communication' by Mr R. Nithya Shankar, Product Testing and Student Mentor, S P Robotics Makers, Chennai, on 19.02.2020 encompassed around the components required for building a robot, selection criteria of the component, and robot programming for real world application.

Demonstration of Robot design by Mr R. Nithya Shankar, S P Robotics Makers

Guest Lecture entitled 'Opamp and its Industrial Applications' by Mr Vikram Gopinath, JS RTL Design Engineer Microchip Technology, Chennai, on 21.02.2020, dealt with the proper design of basic circuits of Op-amp and its scope of applications in the industry.

Mr. Vikram Gopinath of M/s. Microchip Technology delivering the talk.

Thus VIT Chennai continuously works towards the industry-institute interaction to develop innovative solutions to the real world problems with the abundantly growing infrastructure.

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