2.2.4. Initiatives related to industry interaction

Industry interactions help the students to acquire the practical knowledge. In order to improve the technical abilities various industrial activities are carried out. The department has taken following initiatives for establishing and nurturing good relations with industry-

1. Entered in to MoUs with industries

To strengthen interaction with industries and to keep our students updated with the latest trends being followed in the industry, MoUs were signed with the following companies.

S#	Name of the Industry/Company	Date of MoU	Area of Research & Collaboration Scope of Activities & benefits accruing to DEI
1.	Indian Oil Corporation, Faridabad	10.10.2014	*Indian Oil Corporation (R&D Centre) Faridabad with Department of Chemistry* • For scaling up solar hydrogen generation by photo-electrochemical splitting of water • Scaling up of photoelectrode from 1x1 to 3x3 has been standardized while 6x6 is the final target
2.	Maruti Suzuki India Ltd.	20.04.2010	*Collaboration with Department of Automobile Engineering* • Workshop set up • Student Training • Staff exchange
3.	Bharat Heavy Electricals Ltd.	12.08.2010	*Collaboration with Department of Electrical Engineering* • Student Training
4.	India Yamaha Motor Pvt. Ltd.	22.10.2011 21.06.2015 09.06.2017	*Collaboration with Department of Automobile Engineering* • A specialized Two-Wheeler Training Workshop was set up in Department of Automobile Engineering in which the students had undergone specialized training to enhance their employment opportunities and were also awarded Certificate of Proficiency by the Company
5.	Honda Motorcycle and Scooter India Pvt. Ltd., Maanesar, Gurgaon	4.12.2012	• Provide training to trainees and mentors of Painting and Welding Course • Provide practical teaching aids to these courses

6.	TVS Motor Company Ltd., Chennai	9.08.2013	*Collaboration with Department of Automobile Engineering* • Student Stipend • Training and Final Placement
7.	Dayal Motors Agra		• Providing skill –based training to students who have enrolled for vocational training at various levels
8.	Mitsubishi Electric India Pvt. Ltd. Gurgaon, Haryana	17.03.2015	• Student Training and Placement
9.	Oasis Fabrications, Yamuna Nagar, Haryana	3.09.2015	• Student Training and Placement
10.	Genpact India Pvt. Ltd. Hyderabad	10.06.2016	• Student Training and Placement

2. Offering training to industry personal

B.Tech. and M.Tech. in Part-time are being offered to personal from various industries which forms a link for close interaction with industry. Besides, training programmes were also conducted to industry personal on their behest. A suggestive list is provided hereunder

- Training to Cadence Design Systems, NOIDA. Have been delivering two/three -day training workshops on "Advanced Algorithms" at Cadence, NOIDA every year from 2004 – 08 (5 years) in the area of Advanced Algorithms.
- Training to Atrenta Communications Pvt. Ltd., NOIDA, 2010
- Training to Electrical Supply Department personnel in Dayalbagh in repair and maintenance of distribution system 2016, 2017, 2018

3. Undertaken combined research projects with industry

Besides the B.Tech. major projects that are conducted in continuation with six month coop training, following sponsored research projects are done for and in collaboration with industry.

1. ADRDE consultancy Project *Modeling and Simulation of Stanchion system of Aircraft Arrester Barrier System* from July 2004 – Dec. 2004, Rs. 3.5 Lakhs, 6-months from ADRDE, Agra Cantt. (completed).

2. ADRDE Consultancy Project *Automatic controlled voltage source for Aerostat*, from March 2008 – Aug. 2008, **Rs. 9.95 Lakhs, 1yr from ADRDE, Agra Cantt.** . (completed).

3. OCL India gave Consultancy Projects for Society on Human Energy Field from April 2014 to April 2015 Rs. 50.0 Lakhs.

4. Consultant on Regression Test Suite Optimization to Cadence Design Systems, NOIDA from March 1, 2011 to April 30, 2012, 25000$.

*5. **Design and Development of a Smart Micro Grid for Optimal Solar/Grid Power Synergy**, DST SERI project done by Department of Electrical Engineering in collaboration with BHEL, EDN, Bangalore. Project was successfully completed and a larger follow up project was granted under DST Mission Innovation in collaboration with IIT Roorkee, University of Tromso, Norway (Project grant of 3 Crore).*

DST SERI Project proposal summary sheet

Nature of Proposal (Tick One)	A)	*Enabling R&D for Solar Energy*	
	B)	*Technology Development, Demonstration & Application*	
I	Title	***Design and Development of a Smart Micro Grid for Optimal Solar/Grid Power Synergy***	
II	Project cost *(Amount in lakhs)*	DST: Rs. 64,32,662.00	Collaborator *(if any):* Rs. 3,75,000.00
III	Duration *(in months)*	36	
III	PI Name Date of Birth	*D. Bhagwan Das* *16.01.1969*	
IV	Co-PI Name Date of Birth	*A. K. Saxena* *24.01.1961*	
V	Lead Organisation	*DAYALBAGH EDUCATIONAL INSTITUTE*	
VI	Lead Organisation Status	*Deemed University*	
VII	Collaborator(s), *if any*	BHEL Electronics Division, Bangalore	
VIII	Collaborators' Status		
IX	Objectives	***Indigenous Design and development of a Smart Micro Grid for optimal utilization of 518.2 kWp Distributed Solar PV Electric Power Plants commissioned at Dayalbagh Educational Institute, involving the following:*** • ***Remote monitoring and control of Solar Inverters*** • ***Remote monitoring and control of load*** • ***Dual axis sun tracking*** • ***String Monitoring and Diagnosis*** • ***Smart Battery Storage System*** • ***Remote monitoring & Control of Water Pumping Motors*** • ***Decision Support System***	

X	Methodology	*The objectives are proposed to be achieved with the following methodology*
		  1. ***Design and development of infrastructure for remote monitoring & Control of***
		    a. *Solar Inverters*
		    b. *Load and Control Switchgear*
		    c. *Battery Charging*	

		d. Water pumps
		2. **Development of MATLAB based Simulation Model**
		   • *Simulation of installed 170Wp, 24V solar panels*
		   • *Simulation of MPPT Buck converter charge controller*
		   • *Simulation of 6-pulse IGBT inverter with grid connection*
		   • *Validation of simulation models*
		3. **Design and development of a 5kWp system with dual axis sun-tracking and String Monitoring**
		4. **Development of Goal Programming based multi-criteria optimization for Decision Support System**

XI	Deliverables	1. **Existing 518.2kWp distributed SPV system would be upgraded to Smart Micro Grid** 2. **A 5kWp prototype plant with dual axis sun tracking and string monitoring would be developed** 3. **Software development for System Integration and Decision Support Systems** 4. **Performance analysis including Scientific data generation, analysis and evaluation)** 5. **Technological Capability including Human Resource Development**
XII	Project Manpower	**DST:** Research Associates (one) Rs. 7,77,600.00 Project Assistants (one) Rs. 3,45,600.00
XIII	Equipment list and Total Cost	**DST:** Fluke Scope Meter 500MHz, dual channel : Rs. 5,85,000 Multimeters : Rs. 50,000 Fluke 3-Φ Power quality analyzer : Rs. 6,40,000 Solar quality analyzer : Rs. 4,75,000 Electrical Contactors (quantity 36) : Rs. 5,32,656 MCCBs (quantity 18) : Rs. 1,08,198 Smart Meters (quantity 22) : Rs. 1,39,898 Mechanical Interlocks (quantity 18) : Rs. 28,710 Cables (4 core Al, 185 sqmm and 150 sq mm) :Rs. 9,00,000 Assorted lengths : Rs. 6,50,000 5kVA Solar Inverter, 48V,600Ah battery bank :Rs. 1,50,000 Microcontroller boards, Zigbee modules embedded electronics :Rs. 3,75,000 **BHEL, Electronics Div.** 5kWp SPV modules

XIV	Design, Engineering & Fabrication Cost of System*	Rs. 3,00,000
XV	Operation and Maintenance Cost per Annum*	NA
XVI	**Nature of Contribution from Collaborators***	**BHEL would provide SPV modules of 5kWp capacity for the development of a prototype of 5kWp SPV plant with dual axis sun tracking and string monitoring.**

4. Inducted personnel from Industry in various bodies

Eminent Persons from industry are inducted in Academic council, Chairman and members of Board of Governors for TEQIP Project, Institute Innovation Council, Industry Consultation Committee, etc. for closure participation in shaping the academic and administrative activities.

5. Invited industry experts for interaction sessions with students

1. Motivational Lecture-cum-Interaction Session organized a on 28th November, 2017 on

"Career Opportunities for Engineering Students: is Entrepreneurship a Viable Option?"

Drs. Ajay Sharma , CEO at ASR Ventures & President Rotary International Hague, Netherlands

Ajay is accomplished Board member, international speaker, social entrepreneur, Impact investor and executive for business development in European, Asian and Middle-East markets. Before becoming independent investor and consultant, he worked in corporations like Tech Mahinda, Huawei, Alcatel-Lucent and Escotel. He studied Diploma in Electrical Engineering in 1993 in DEI. Ajay now holds Engineering, MBA and LLM and studied at universities like Harvard Business School,

University-Liverpool, University-of-Bradford and DEI. Ajay speaks at multiple international forums and universities in technologies BLOCKCHAIN and Cyber security and entrepreneurship.

Ajay holds following positions and delivers values in world.

- CEO and Founder ASR Ventures – Invest in impact innovations
- Chief Regulatory and investments officer – TOBLOCKCHAIN (BLOCKCHAIN

Powerhouse)

- President – Rotary Club The Hague Metropolitan (First English international club of Netherlands with 20 plus nationalities)
- Global Advisor and director– Sampoorna Global (Social enterprise- Augmenting menstrual hygiene for young girls)
- European Director– E2Labs– Critical Infrastructure Cyber-security Solutions. Partner– Exasun (Innovative Solar panels)
- Partner– BSS Holland (Defense Security Solutions) Mentor in World Startup Factory

A Lecture-cum-Interaction Session was organized a on 28th November, 2017 on **"Career Opportunities for Engineering Students: is Entrepreneurship a Viable Option?"**

During the interaction, Mr. Ajay explained the importance of balanced outlook towards career opportunities that includes conventional Jobs as well as entrepreneurial opportunities. He cited his own experience and growth as an example to lay emphasis on the view that- jobs provide level growth but more security. On the other hand, entrepreneurial activities provide more growth opportunities although involve more risk factors.

He explained that the best compromise of the two options has to be person specific and each individual must take his call on the basis of his comfort level. He also stressed on introducing guarded entrepreneurial opportunities in educational institutions to inculcate suitable mindset in the students without actually exposing them to the risk factors. Students were motivated by speaker and hand fruitful interaction and an impromptu session on innovations that they want to convert into a Start-up.

2. Motivational lecture and Interaction Session organized a on 8th December, 2017 on **"Internship, Choices, Career"**

Rajendra S Pawar, Chairman & Managing Director, NIIT Ltd.

Rajendra S Pawar is the Chairman and Co-Founder of NIIT Group that encompasses NIIT Limited, a leading Global Talent Development Corporation, and NIIT Technologies Limited, the software and

services arm. As a co-founder of the NIIT Group, Pawar has not only revolutionized the IT training industry, but is also recognized as a global technology thought leader.

As the Chairman of India's IT industry body- National Association of Software and Service Companies (NASSCOM), Pawar has led several ICT industry initiatives, giving voice to the sector's aspirations and goals. Earlier during 1990-92, as President of MAIT (Manufacturers' Association for Information Technology), Pawar integrated MAIT's activities with other leading industry associations in India.

A Fellow member of the Computer Society of India (CSI) and the Institution of Electronic and Telecommunication Engineers (IETE), Pawar was awarded an Honorary Doctoral Degree by Rajiv Gandhi Technical University (MP) in 2005.

Awards and Accomplishments

- Acknowledging his contribution to the IT industry in India, Pawar has been awarded the
- country's prestigious civilian honour, Padma Bhushan by the President of India in 2011
- Pawar is a member of the Prime Minister's National Council on Skill Development and has served the Prime Minister's National Task Force (1998) commissioned to develop India into an IT Superpower
- An advisor to the Hunan Province of China, he has also been a member of PIAC (Presidential International Advisory Council) of the Government of South Africa for IT
- As a founding member of the International Business Council of the World Economic Forum, Pawar is deeply engaged in addressing issues of global significance
- Global Business Intelligence firm, Ernst & Young conferred Pawar with its prestigious "Master Entrepreneur of the Year" award, in 1999. He has also been named as the "IT Man of the Year" by IT industry journal, Dataquest
- Pawar has been awarded 'The Global India Splendor Award' on the occasion of the 60th
- year of Indian independence, for his work in developing human resource potential
- He has received 'Distinguished Alumnus Award' from IIT Delhi in 1995 and 'Madhav Award' from The Scindia School
- Pawar has also been honoured with the prestigious 'Nayudamma Award' in 2012, for his
- continued contribution to the IT industry in India

Mr. Pawar referred to historical developments in human society and how they resulted in agrarian, scientific, industrial and information revolutions. He said that the current century is the period of knowledge revolution. The industrial revolution was driven by innovations that reduce, and if possible remove, human intervention, where as the knowledge revolution is driven by products having human being as the centre of the theme. This resulted in decline of conventional job careers and germination of altogether new paradigms of jobs, entrepreneurial objectives and innovations.

He also explained that the current generation professionals has better opportunities

to explore and take risks as their typical career is spanned over 70 – 80 years. He urged the students to take a plunge in whatever endeavor they deem suitable without worry as they have ample time to switch. The session ended with a prolonged interaction with students. The impromptu session was highly appreciated and enjoyed by the students.

6. Regularly conducting Alumni meet

The 'Alumni Association of Dayalbagh Educational Institutions (AADEIs)' closely works with DEI and provides dedicated support in all activities of DEI. It has contributed significantly through financial and non-financial means during the last five years:

1. Installation of EDUSAT facilities at a number of Study Centers, establishment of ICT Centres at Delhi, Timarni and Bangalore and also ugradation of the Multimedia lab and e-class rooms at DEI.
2. Seed funds for initiating Research in the area of Astro particle Physics, which eventually matured into an MoU with TIFR, Mumbai. It has created a chair of excellence in the Music Department.
3. Under Graduate Research Awards (UGRA) to encourage undergraduate students to take up research projects.
4. Development of Instruction books for vocational courses for Open and Distance Learning.
5. Short Courses on Soft Skills, Spoken English, Personality Development and skills to face
   Interviews, Resume Writing, Elementary Computer Courses, TALLY ERP 9, Advanced Computer Courses on Networking regularly on campus not only to DEI students, but also for unemployed graduates.
6. Special coaching for NET, GATE and civil services examinations.
7. Sponsored International Conferences conducted by DEI.
8. Sponsored faculty and students to participate in International Conferences abroad.
9. DEI Alumni Placement Assistance Cell (DEI-APAC), a wing of AADEIs helps in placement of DEI graduates.
10. Summer training and Co-op-Internship of students. It arranges to oversee the training by assigning this duty to an alumnus working in that Organization.
11. Unique mentorship program by assigning expert alumni to guide the final year engineering students in their projects in distance mode.
12. Campus development
13. The Alumni living in USA have registered a separate Association 'AAFDEI', to help DEI in its overseas activities: financing visits of eminent scientists from

USA, assistance to DEI faculty and students in USA for research and establishment of Distance Education Study Center at Colombo.

14. Active members of various academic and administrative bodies of the Institute.
15. Conduct surveys to take feedback from all stakeholders and suggest improvements.
16. Deliver invited talks, guest lectures and seminars.
17. Provide counseling to students for employment.
18. Active members of IQAC.
19. Act as judges in cultural and sports competitions.
20. Actively help in organization and management of extensive outreach activities of the Institute.
21. Provide sponsorship and support for printing of magazines, conference proceedings, and brochures.
22. Offer services as mentors of DEI distance education programmes in India and abroad.
23. Offer honorary services to teach, guide research and help in establishing ICT centres in India and abroad.
24. Serve as role models for students through distinguished services in different fields of service.
25. Helped in organizing Alumni Reunion events.

Number of Alumni Association /Chapters meetings held year wise during the last five years

2013-14	2014-15	2015-16	2016-17	2017-18
3	3	5	4	2

7. Increased stay of students at industry for internship

Relevant exposure of industry environment to students is given through internship in summer terms of I & II years and through Six month Cooperative Education Programme for students. Some salient points of Coop training programme are presented hereunder-

Cooperative Education Programme

- BHEL
- Schneider
- PGCIL
- Siemens
- Torrent Power
- ESSAR Steels
- Cadence
- NXP
- Zia Semiconductors
- Analog Devices
- Texas Instruments
- TCS
- Schlumberger
- JSW
- MITACS (Indo-Canada)
- IITs

- DVVNL
- UPPCL
- Cognizant
- DMRC
- SunSure
- Crompton Grieves
- Keysight
- HCL
- IITs
- DEI
- NBCC
- Phillips India
- Airport Authority of India
- STMicro Electronics
- Microsoft
- DVVNL/UPPCLS

2017 Batch Status

- Students continue to pursue Final Year Major Project on industry problems identified during Coop Programme. **NINE** students of the present batch are working on problems acquired from SunSure, Essar Steel (paid through consultancy)
- **TEN** pre-placement offers already confirmed in Essar Steel, Zia Semiconductors, Cognizant Technologies, Cadence. More are expected.
- **TWO** students received Rs. 25000/- cash award each at Essar Steel for excellent performance.
- Best Trainee award at Cadence

From 2018 onwards, students will get stipend through TEQIP project sanctioned to the Faculty.

Sample training certificates are attached in Annexure Training Certificates.

8. Undertaken industry projects as B.Tech. major projects with supervisors from institute as well as industry

- Students continue to pursue Final Year Major Project on industry problems identified during Coop Programme. **NINE** students of the 2018 batch worked on problems acquired from SunSure, Essar Steel (paid through consultancy), with joint supervision from institute and industry.
- TEN pre-placement offers already confirmed in Essar Steel, Zia Semiconductors, Cognizant Technologies, Cadence. More are expected.
- TWO students received Rs. 25000/- cash award each at Essar Steel for excellent performance.
- Best Trainee award at Cadence

9. Preparing students for industry through various courses under the aegis of Industry-Institute Partnership Cell (IIPC).

Students are provided with ample support for enhancing their Industry Preparedness. Salient points are presented hereunder -

Industry Preparedness

- Resume Writing/checking (650 students)
- Aptitude Test Practice (246 students in 10 sessions)
- Group Discussion Sessions (206 students in 9 sessions)
- Mock Interviews, 97 students
- Career Guidance (B. Tech 6th semester 260 students)
- Guest Lectures on Expectations from the Co-Op Trainee while at Internship in the Industry, for 6th Sem., Personal Effectiveness 190 students
- Soft Skills (45 students)
- Spoken English (45 students)
- Basic IT (51 students)
- Students Projects (DE/TD, Rural Engineering and Major Projects)

Above efforts by the department to have good interaction with industry resulted in excellent placement of students. Details of the same are presented hereunder

Electrical Engineering	Elect. Engg. with Specialization in Electronics	Elect. Engg. With Specialization in Computer Science
Campus/off campus Placements at BHEL, Siemens, IOCL, FIAT, Schneider, L&T, Kirloskar, PGCIL, BARC, Torrent Power, UPPCL, Crompton Grieves, DMRC, NPCIL, GE, ABB, Phillips India,	•**Campus/off campus Placements at** CISCO, Cadence, Freescale, ST Microelectronics, NXP, HCL, Analog Devices, Qualcomm, Huawei, LAVA, Freelancers	•**Campus/off campus Placements at** Microsoft, Google, Cognizant, Accenture, TCS, Adobe, LAVA, Headstrong, Oracle, Keysight,

To strengthen interaction with industries and to keep our students updated with the latest trends being followed in the industry, MoUs were signed with the following companies.

Industry interactions help the students to acquire the practical knowledge. So in order to improve the technical abilities various industrial activities are carried out.

Collaborations with Industries and Corporate Sectors and Institutions

a. International Collaborations

Name of the University/Institute	Date of MoU	Area of Research & Collaboration and Scope of Activities & Benefits accruing to DEI

1.	University of Waterloo, Canada	17.7.2008	*Quantum Computing, Silicon Photonics with Departments of Mechanical Engineering, Electrical Engineering , Physics & Computer Science* • Publication of Books • Utilization of Experimental Facilities • Establishment of Centre for Quantum and Nano Computing
2.	University of Maryland, College Park, U.S.A.	3.12.2011	*Nano-structured materials for photo-electro-chemical splitting of water to generate Hydrogen with Department of Chemistry, Physics & Computer Science and Electrical Engineering* • DST-NSF Research grant • Joint Research Publications Exchange visits • One joint Course each Semester from University of Maryland in Computer Science
3.	Michigan State University, USA	14.2.2011	*International Agreement for Academic Cooperation with College of Engineering , College of Agriculture and Natural Resources, College of Education and Biometrics with Department of Physics & Computer Science* • Faculty Visits • Research Collaboration on UIDAI • Provisions for exchange of materials in education and research • Publications • Academic information • Exchange of Faculty and research scholars • Joint Research and meetings for education • Research and outreach • Technical assistance • Student exchanges • Joint curriculum development in support of K-12 education and joint development of innovative teaching methods
4.	University of Missouri, USA	3.11.2011	• Research Collaboration

			• Initiation of research on natural products for cancer treatment
5.	Consciousness Quotient Institute (CQ-i), Romania	2013	• Joint Publications • Collaborative Project (CQ-i) • Travel Grant awarded by CQ-i to CQ-i related research at TSC 2015 held in Finland • One of the faculty member (Education) is member of CQ-i team (since 2014) and one of the alumni of Faculty of Education is also member of CQ-I team
6.	Simon Fraser University, Vancouver	2017	• Visit of faculty for PDF
7.	HAN University of Applied Sciences, Netherland	17.10.2014	• Production and Operations Management, Lean Manufacturing
8.	Vocational Training Authority of Sri Lanka, Colombo, Sri Lanka	20.10.2014	
9.	Irwin and John Jacob School of Engineering, University of California, San Diego	31.12.2014	
10.	Oakland University, Rochester, Michigan, USA	16.04.2015	• Jointly organized two conferences: ICAM 2014 at Oakland University and ICAM 2015 at KNIT Sultanpur and now are in the process of organizing a third conference ICAM 2017 at IIT BHU Varanasi in December 2017.
11.	Nano Characterization Unit, National Institute for Materials Science, Japan	16.5.2016	*Express the understanding of the parties to strengthen and promote research collaboration between the parties based upon the principles of equality, reciprocity, mutual respect, best effort and frequent interactions to* • Strengthen and promote institutional exchange of personnel • Promote institutional exchange of scientific and technical information

			• Organize symposia, Conferences and workshops • Encourage joint research activities and other activities in the field of Materials Science
12.	Christian Albrecht University of Kiel (CAU) , Germany (Letter of Intent)	17.2.2015 13.12. 2016	• Joint Projects • Joint Lecture Series • Exchange Visits • Joint Publications • Joint Ph.D. Supervision • Shared Curricula and Courses
13.	University of Arkansas	27.4.17	• Exchange of Information • Exchange of Students and Faculty • Collaborative Programmes, Research and Seminars

b. Collaboration with National Universities and Institutes

	Name of the University/Institute	Date of MoU	Area of Research & Collaboration Scope of Activities & benefits accruing to DEI
1.	Indian Institute of Technology, Delhi	17.09.2007	*Computer Science, Nano-science and Management with Departments of Physics and Computer Science Electrical Engineering Management* • Ph.D. under joint supervision • Joint courses every Semester taught jointly by both
2.	TIFR, Mumbai	13.10.2007	*Astro-particle Physics, Nano-photonics with Department of Physics and Computer Science* • R & D • Utilization of Experimental Facilities • Joint Experiments • Joint Publications
3.	Indian Institute of Technology, Kanpur		*Quantum and Nano Computing with Departments of Mechanical Engineering Physics and Computer Science* • Publication of books as joint authors

			• Organization of Joint International Conferences
4.	International Centre for Genetic Engineering (ICGEB), New Delhi	27.4.2012	*Biotechnology with Departments of Chemistry Zoology, Botany* • Research Experiments • Establishing Post Graduate Diploma in Environmental Biotechnology
5.	Indian Institute of Management, Bangalore	24.5.2014	*Supply Chain Management Center, IIM Bangalore with Department of Management* • Joint research papers in Supply Chain Management Programme • Faculty Exchange • Faculty Visits
6.	Centre for Development of Advanced Computing (CDAC), Pune		*Algorithms for recognition of similar trademarks with Department of Mechanical Engineering* • Technology transfer to CDAC for Commercialization
7.	Tata Institute of Social Sciences, Mumbai	24.05.2015	*Collaboration in the areas of Management, Sociology and Political Science* • Joint Curriculum Workshop • Joint research supervision • Faculty Exchange • Faculty Visits
8.	Mahatma Gandhi Chitrakoot Gramoudhyog Vishavidyalaya, Chitrakoot, Satna, M.P	4.09.2015	
9.	ICAR- National Dairy Research Institute Karnal, Haryana	3.10.2015	• Visit and Special Lectures by experts • Student Internship
10.	Indian Institute of Technology, New Delhi	07.09.2016	*Collaboration with Management, Physics and Computer Science and Electrical Engineering* • Joint Courses • Joint supervision
11.	Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan	16.02.2016	*Major emphasis on faculty development, remote sensing, nanotechnology, biotechnology, natural products development, analysis of food and natural products, solar energy utilization, student exchange under*

			sandwich programmes and development of a model farm near Nainatikkar by DEI
			• Research in the areas of mutual interest in areas of (1) Horticulture (2) Value-based agriculture and food processing, (3) Cultivation of medicinal Plants, (4) Floriculture, and (5) Remote sensing
			• Joint programmes of study through video conferencing and other multimedia facilities.
			• Promote collaborations between individual scientists in terms of research and project undertakings.
			• Providing opportunities to the academic staff to collaborate for the purposes of research, teaching and other outreach activities.
12.	Jain Irrigation Systems Ltd. Jalgaon, Maharastra	31.03.2017	
13.	School of Planning and Architecture, Delhi	May, 2017	*Collaboration in the Fields of Architecture, Urban Planning and Civil Engineering* • Exchange Programs • Joint Courses • Curriculum Workshops
14.	Telecom Sector Skill Council		*Introducing Skill Based Training (Additional) in all the Colleges and Institutions of DEI as a part of Curricula of various Post Graduate (PG) and Under Graduate (UG) Courses/Programs*
15.	BeejSheetal Research Pvt. Ltd. Jalna, Maharastra	5.5.2017	• Training of students of UG in B.Voc Agricultural technology and Water sanitation & solid waste management Stream and other students of DEI • Joint supervision of Dissertation Project • Provide knowledge for capacity building and human resource development • Deliver Lectures/Invited Talks
16.	National University Education Planning and Administration		• Mutual Experts , Resource Persons
17.	NCERT		• Mutual Experts , Resource Persons

18.	University of Allahabad Kurushetra University Central Institute of Education Aligarh Muslim University		• Mutual Experts , Resource Persons, Examiners
19.	National Council for Technical Education, NCTE		• Members Peer Group Verification Teams

c. Collaborations with Ministries and National Missions

	Name	Date of MoU	Area of Research & Collaboration Scope of Activities & benefits accruing to DEI
1.	Madhya Pradesh Bamboo Mission, Bhopal Centre for Green Mission Building Material and Technology, Bengaluru	02.03.2014	*9-week modular course offered in the six Study Centres of M. P. including Timarni, Rajaborari Study Centres in the tribal belt of Harda district of M.P.* • Start a modular course in Bamboo Application Technology • Over 100 artisans were sponsored by MPSBM and they successfully completed the course during the 2014-15 session
2.	UP Skill Development Society	13.08.2015	
3.	Ministry of Micro, Small and Medium Enterprises, New Delhi	23.09.2015	• Student Training
4.	The Ministry of Textiles (*MOT*), R.K.Puram, New Delhi	19.05.2017	*Link with Department of Drawing and Painting* • Upgrading and Imparting skills in different trade of Handicrafts • Provide an opportunity for the artisans to upgrade their skills, interact with other craftsmen • Create livelihood opportunity

d. Collaborations with Industries and Corporate Sectors

	Name of the Industry/Company	Date of MoU	Research & Collaboration Areas, Scope of Activities & benefits accruing to DEI
1.	Indian Oil Corporation, Faridabad	10.10.2014	*Indian Oil Corporation (R&D Centre) Faridabad with Department of Chemistry* • For scaling up solar hydrogen generation by photo-electrochemical splitting of water • Scaling up of photoelectrode from 1x1 to 3x3 has been standardized while 6x6 is the final target
2.	Maruti Suzuki India Ltd.	20.04.2010	*Collaboration with Department of Automobile Engineering* • Workshop set up • Student Training • Staff exchange
3.	Bharat Heavy Electricals Ltd.	12.08.2010	*Collaboration with Department of Electrical Engineering* • Student Training
4.	India Yamaha Motor Pvt. Ltd.	22.10.2011 21.06.2015 09.06.2017	*Collaboration with Department of Automobile Engineering* • A specialized Two-Wheeler Training Workshop was set up in Department of Automobile Engineering in which the students had undergone specialized training to enhance their employment opportunities and were also awarded Certificate of Proficiency by the Company
5.	Honda Motorcycle and Scooter India Pvt. Ltd., Maanesar, Gurgaon	4.12.2012	• Provide training to trainees and mentors of Painting and Welding Course • Provide practical teaching aids to these courses
6.	TVS Motor Company Ltd., Chennai	9.08.2013	*Collaboration with Department of Automobile Engineering* • Student Stipend • Training and Final Placement
7.	Dayal Motors Agra		• Providing skill –based training to students who have enrolled for vocational training at various levels

8.	Mitsubishi Electric India Pvt. Ltd. Gurgaon, Haryana	17.03.2015	• Student Training and Placement
9.	Oasis Fabrications, Yamuna Nagar, Haryana	3.09.2015	• Student Training and Placement
10.	Genpact India Pvt. Ltd. Hyderabad	10.06.2016	• Student Training and Placement

e. Collaborations with Medical Research Centres and Hospitals

	Name of the Center	Date of MoU	Area of Research & Collaboration Scope of Activities & benefits accruing to DEI
1.	Dr. Kamlesh Tandon Hospital and Test Tube Baby Centre, Agra	10.5.2016	*Collaboration in the field of Paramedical* For Student Training and Placement
2.	Lotus Super Specialty Hospital, Agra	10.5.2016	
3.	Purushottamdas Savitri devi Cancer Care and Research Centre, Agra	10.5.2016	
4.	Asopa Hospital and Research Centre, Agra	10.5.2016	

Industrial Visits:

Industrial Visits for three days are organised every academic year and this activity has a 1 credit. Students of First year are divided in batches are and visits industries for three days in and around Agra and within a range of 50 Km radius. Second year students also visits industries within a radius of 250 Km. Each batch is associated with teacher mentors. After the visit the students are asked to submit a visit report and the an internal viva by a group of teachers is conducted followed by an End semester external viva by an external examiner. A tentative list of the industries/Establishments visited by the students is given below:

S. No.	Industry
1	M/s. Atul Generators Pvt. Limited, Agra
2	M/s. Kotsons Transformers, Agra
3	M/s. Marsons Transformers, Agra
4	M/s. Raj Pattern Works, Agra
5	M/s. Basant Industries, Agra
6	220 kV Substation, UPPCL, Agra
7	400 kV Substation, UPPCL, Agra
8	Diesel Loco Shed, Indian Railways, Agra
9	U P Roadways Maintenance Depo, Agra

10	M/s. Prakash Agriculture Industries, Agra
11	Amar Ujala Press, Agra
12	Creambell Industry, Mathura
13	Pepsi, Mathura
14	Mathura Refinery, Mathura
15	Bhole Baba Dairy, Mathura
16	Havells India, Neemrana, Rajasthan
17	ACE, Faridabad
18	Moeserbaer, G Noida
19	YAMAHA Motors, Surajpur, G Noida
20	Maruti Suzuki, Manesar, Gurgaon
21	HVDC Power Plant, PGCIL, Dadri