

**DATA (Mechanical Engineering Department) FOR ANNUAL REPORT 2018-19
(Period 1.4.2018 TO 30.06.2019)**

Note: Data to be provided in bilingual form (English)

1. Name of the department :Mechanical Engineering

2. Department Profile with infrastructure and facilities

(I) Brief introduction:

One of the basic and largest departments of the Institute, the department of Mechanical Engineering offers Ph.D programme, two M.Tech. courses, two B.E. courses, and five Integrated Certificate Diploma courses (ICD), covering various areas of Mechanical Engineering. *NBA has accredited the academic programmes (PG and earlier the 03 year B.E.).* Entry into 1st year of 4-year undergraduate program is through JEE (main) examination and M. Tech programs is through CCMT whereas that into ICD programs, 2nd year of 4-year undergraduate program and Ph.D. program is through the SET examination- a national level entrance examination conducted by the institute. In addition to these, scholars under NDF scheme of AICTE are also admitted into the department for carrying out Ph. D. level research. The department has well equipped laboratories with state of the art equipment, instrumentation and software.

A SLIET Mechanical Engineering Society (SMES) exists in the Department. The Society conducts various activities like lectures, student competitions and Industrial visits at regular intervals.

(II) Course offered:

POST GRADUATE PROGRAMME

- a. Manufacturing Systems Engineering
- b. Welding and Fabrication

DEGREE PROGRAMMES

- a. **Mechanical Engineering** (2019 batch onwards)
- b. Mechanical Engineering (Manufacturing Engineering) – for old batches
- c. Mechanical Engineering (Welding Technology) – for old batches

INTEGRATED CERTIFICATE CUM DIPLOMA PROGRAMMES

- a. Diploma in Mechanical Engineering (Certificate in Foundry and Forging)
- b. Diploma in Mechanical Engineering (Certificate in Tool and Die Technology)
- c. Diploma in Mechanical Engineering (Certificate in Air-conditioning Mechanic)
- d. Diploma in Mechanical Engineering (Certificate in Welding)
- e. Diploma in Mechanical Engineering (Certificate in Auto & Farm Equipment Mechanic).

(III) Laboratories in the department:

- Advanced Welding Laboratory
- Metrology Laboratory
- CAD/CAM Laboratory
- Simulation Laboratory

- Industrial Automation & Mechatronics Laboratory
- SOM Laboratory
- Mechanics Laboratory
- Thermal Engineering Laboratory
- Fluid Machinery Laboratory
- Refrigeration and Air-conditioning Laboratory
- Auto-Farm Laboratory
- Innovation Centre
- Industrial Engineering Laboratory
- Advance casting Laboratory
- Welding Metallurgy laboratory

3. Research Publications

a. Web of Science indexed Journals

- i. Jastej Singh, A.S. Shahi, "Impact Toughness, Fatigue Crack Growth and Corrosion Behavior of Thermally Aged UNS S32205 Duplex Stainless Steel", Transactions of Indian Institute of Metals, Volume 72, Issue 6, June 2019, pp 1497–1502.
- ii. Vivek Kumar, Vikas Rastogi, PM Pathak. "Modelling and Evaluation of the Hunting Behaviour of a High-Speed Railway Vehicle on Curved Track." Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit 233, no. 2, February 2019, pp 220–36.
- iii. Anil Kumar, Rajesh Kumar, "Role of signal processing, modeling and decision making in the diagnosis of rolling element bearing defect: A review" Journal of Nondestructive Evaluation, Vol. 38(1), 2019, 5:1-29.
- iv. Prabjot Singh, Anuj Bansal, Deepak Kumar Goyal, "Erosion Wear Evaluation of HVOF Sprayed Wc-12co Coating On Some Pipeline Materials Using Taguchi Approach", Kovove Mater., Vol 57, 2019, 113–120.
- v. Jastej Singh, A.S. Shahi, "Metallurgical, impact and fatigue performance of electron beam welded duplex stainless steel joints", Journal of Materials Processing Technology, 272, 2019, 137-148.
- vi. Harmesh Kumar, Alakesh Manna, Rajesh Kumar, "Modeling and desirability approach-based multi-response optimization of WEDM parameters in machining of aluminum metal matrix composites", Journal of the Brazilian Society of Mechanical Sciences and Engineering, Vol. 40(9), September, 2018.
- vii. Harish Kumar Arya, Kulwant Singh, Ravinder K Saxena, "Effect of weld cooling rates on mechanical and metallurgical properties of submerged arc welded pressure vessel steel" Journal of Pressure Vessel Technology, Vol. 140 (4), 2018, pp 041406:1-7.
- viii. Bhupinder Singh, Kulwant Singh, V.Sahni, "Mechanical and Metallurgical Properties of Friction Stir Welded Magnesium Alloy Joints Using Different Pin Profiles" International Journal of Mechanical and Production Engineering (IJMPE), Vol. 6(8), 2018, pp 18-21.
- ix. Bhupinder Singh, Kulwant Singh and V. Sahni, "Modeling of the effect of process parameters on tensile strength of friction stir welded rare earth ZE-41 magnesium alloy joints" International Journal of Applied Engineering Research, Vol 13(5), 2018, pp 2882-2891.
- x. Bhupinder Singh, Kulwant Singh, V. Sahni, "Predicting impact behavior of friction stir welded ZE-41 Magnesium alloy joints" Indian Journal of Science and Technology, Vol 11(16) , 2018, pp 1-12.
- xi. Rakesh Kumar, V Sahni, "Effect of Copper and Magnesium Stoichiometric Additions and Thermal Aging on the Mechanical Properties of Cast Aluminium Alloys". Indian Journal of Science and Technology, Vol. 11(48), 2018, 1–7.

- xii. Rahul Gupta, Pardeep Gupta, "Fabrication of Micro-Channels on Pure-Ti by USM and Its Surface Roughness Analysis", *Ciencia e Tecnica, Vitivinicola*, Vol. 33(7), 2018, pp. 92-97.
- xiii. Anil Kumar, Rajesh Kumar, "Adaptive artificial intelligence for automatic identification of defect in the angular contact bearing" *Neural Computing and Applications*, Vol. 29(8), 2018, 277–287.
- xiv. Arvind Jayant, V. Giri, Sunil Luthra, P K. Singh, "A state-of –art literature survey of Grey Relational Analysis (GRA) applications in competitive business environment" *International journal of industrial and systems engineering*, Vol.30(4), 2018, pp 425-448.

b. Scopus indexed Journals (Excluding Web of Science):

Author(s), Title, Name of Journal, Vol, Month, Yr, pp

- i. R. R. Choudhary, H. Kumar, Shankar Singh, "Experimental investigation on surface characteristics in Electrical Discharge Surface Grinding (EDSG) of 6061Al/Al₂O₃p 10% composite", *Advances in Materials and Processing Technologies*, Vol. 5(1), 2019, 1-24.
- ii. Pardeep Gupta, Aman Hooda, "Manufacturing Excellence through Total Productive Maintenance Implementation in an Indian Industry: A Case Study", *International Journal of Mechanical and Production Engineering, Research and Development*, Vol. 9(3), June 2019, 1593-1604.
- iii. Rakesh Kumar, V Sahni "Study on Morphology and Mechanical Properties of Stoichiometrically Developed Al-Cu-Mg Cast Alloy". *International Journal of Mechanical Engineering and Technology*, Vol. 10(04), 2019, 661–670.

c. Other peer reviewed Journals

- i. Dhananjay Singh Yadav, Raj Kumar Yadav, "Study of Ferro-boron content by paste technique on microstructure in hard faced mild steel", *International journal of Management, IT & Engineering*, Vol. 9(6), June 2019, 54-65.
- ii. R K Yadav, G N Singh, "Modelling of detention period of coal wagon rakes in medium capacity thermal power plants", *International journal of Management, IT & Engineering*, Vol. 9(5), May 2019, 83-99.
- iii. Vivek Gupta, Arvind Jayant "Evaluating Low Carbon Supply Chain Practices in India using Fuzzy Tool based Importance and Performance Analysis" *Journal of Energy, Environment & Carbon Credits* Vol. 9(1), 2019, 1-11.
- iv. Sumit Kumar, Sunil Kumar, "Comparative study of Trajectory Control methodologies for Underwater Flexible Rayleigh Robot Manipulator using Bond Graph Approach," *International Journal of Research and Analytical Reviews*, Vol. 5(4), 2018, 23-30.
- v. Arvind Jayant, Janpriy Sharma "Modelling and Simulation of pre-production scenario of a farm equipment manufacturing Indian Micro Small Medium Enterprise (MSME)" *SciFed Computer Science & Applications*, Vol. 1(3), 2018, 1-14.
- vi. Arvind Jayant "An Analytical Hierarchy Process (AHP) Based Approach for Supplier Selection: An Automotive Industry Case Study" *International Journal of Business Insight and Transformation*, Vol. 11(I), March 2018, 36-45.
- vii. Arvind Jayant, Janpriy Sharma "A comprehensive literature review of MCDM techniques ELECTRE, PROMETHEE, VIKOR AND TOPSIS Applications in Competitive Business Environment" *International Journal of Current research*, Vol. 10(2), February 2018. 65461-65477.

- viii. Madhukar Chhimwal, Arvind Jayant “Modelling of the Critical Success Factors (CSF’s) for Sustainable Supply Chain Risk Mitigation” SUPPLY CHAIN PULSE: A Journal of Supply Chain and Logistics Management, Vol. 9(1), 2018.
- ix. Gagandeep Singh, Arvind Jayant “Advanced Surface Finishing Processes: A Comprehensive Review & Future Research Directions” International Journal of Engineering Science and Technology, Vol. 10(7), 2018, 213-252.
- x. Vivek Kumar,” Investigation of the effect of car suspension parameters on ride comfort”, Global Journal of Engineering Science & Researches, Vol. 5(5), 2018, 25-32.
- xi. Vivek Kumar,” Investigation of ECM parameters on the MRR in machining of AISI 304 steel”, Global Journal of Engineering Science & Researches, Vol. 5(5), 2018, 1-8.
- xii. Vivek Kumar,” Surface roughness prediction model for electro chemical machining of SS-304 steel using response surface methodology”, International Journal of Engineering Sciences & Research Technology, Vol. 7(5), 2018.
- xiii. Vivek Kumar, “Modelling and simulation of a passenger car for comfort evaluation”, International Journal for Research in Applied Science & Engineering Technology (IJRASET), Vol. 6(4), 2018, 4013-4018.
- xiv. Shaninder Kumar, Rajesh Kumar, Rakesh Kumar, “Experimental study on process parameters of tungsten inert gas (TIG) welded AL6063/SiCp metal matrix composites” International journal for research in applied science & engineering technology, Vol. 6(10) 2018.

d. Full Paper in International conferences

- Author(s), Title, Name of conference, Month, Yr, pp
- i. Mohd Majid, Abhishek Shrivastava, “Influence of AA-GTA Welding on the Weld Metal Penetration” Proceedings of the World Congress on Engineering 2019 WCE 2019, July 3-5, 2019, London, U.K.
 - ii. J.S.Gill and A S Shahi, ‘Effects of Electromagnetic Field Intensity on Gas Metal Welding Arc in Stainless Steel Cladding Overlays in World Congress on Engineering 2019 WCE 2019, July 3-5, 2019, London, U.K.
 - iii. Pardeep Gupta, Sumit Kumar “Productivity improvements in an Indian automotive OEM using Heijunka, a lean manufacturing approach: A case study”, 6th International Conference on Production and Industrial Engineering 8-10 June 2019.
 - iv. Anuj Bansal, Jonny Singla, Shivam Pandey, Prem Raj, “Design and Development of High-Velocity Submerged Water Jet Cavitation Erosion Test Rig” presented in VIth International Conference on Production & Industrial Engineering (CPIE 2019), 08-10 June 2019, held at Dr B R Ambedkar National Institute of Technology, Jalandhar.
 - v. Amrinder Singh, Anuj Bansal, Jagtar Singh, Anil Kumar Singla, “Effect of Cryogenic Treatment on Mechanical and Metallurgical Properties of Ss410” Presented in VIth International Conference on Production & Industrial Engineering (CPIE 2019), 08-10 June 2019, held at Dr B R Ambedkar National Institute of Technology, Jalandhar, Punjab.
 - vi. Nitin patel, Jonny Singla, Ravindra Kumar Saxena, “Taguchi Based Optimization of Process Parameters For Electrochemical Machining (ECM) Of Nimonic-263”, 6th International Conference on Production & Industrial Engineering (CPIE-2019), June 8th-10th 2019 at Dr. B R Ambedkar National Institute of Technology, Jalandhar, Punjab.
 - vii. Rahul Gupta, Pardeep Gupta, “Optimization of Process Parameters for the Fabrication of Micro-Channels on Pure-Ti by USM through GRA”, 7th International Conference on Advancements in Engineering & Technology-2019” (ICAET-2019) held on 15th & 16th March, 2019 at BGIET, Sangrur.

- viii. Pardeep Gupta, Anikesh Mittal, & Aman Hooda “Decrease in Rejection Rate of Internal Gears through Quality Control Story Initiative under TQM: A Case Study”, 7th International Conference on Advancements in Engineering & Technology-2019” (ICAET-2019) held on 15th & 16th March, 2019 at BGIET, Sangrur.
- ix. Mukesh Kumar, Manisha Kumari, Deenbandhu Kumar and Kulwant Singh, “Development of exothermic flux for enhanced metal deposition rate, penetration and reinforcement in submerged arc welding” Proceeding of International Conference on Advancement in Engineering and Technology (ICAET-2019) held at BGIET, Sangrur, during March 15-16, 2019, pp 193-197
- x. Surinder Kumar, Rajesh Kumar, “Worm and wheel gears fault frequency extraction using minimum entropy deconvolution-based envelope of the vibration signal” 2nd International Conference on New Frontiers in Engineering, Science & Technology (NFEST 2019), NIT Kurukshetra, 18-22 Feb. 2019.
- xi. Shivesh Kumar, Sunil Kumar, “Arduino Based Economic and Real Time Consumption Rate Computing,” 2nd International Conference on New Frontiers in Engineering, Science & Technology (NFEST 2019), NIT Kurukshetra from February 18-22, 2019.
- xii. Nitin Mahay, R K Yadav, “An experimental investigation into heat transfer characteristics of aqua based Cu nano fluid for automobile radiator”, NFEST-2019 at NIT, Kurukshetra, 18-22 Feb. 2019..
- xiii. SK Chaubey, Shankar Singh, A Singh, “Some investigations into machining of AISI D2 tool steel using wire electro discharge machining (WEDM) process”, Materials Today Proceedings (Elsevier) ISSN:2214-7853, Vol. 5(11), 2019, pp. 24347-24357.
- xiv. Anikesh Mittal, Pardeep Gupta & S. Vardhan, “Improving Product Quality and Customer Satisfaction in Industry through Quality Assurance System: A case study”, Proceedings of 51st Annual Convention of Operations Research Society of India and International Conference on Industrial Engineering and Operations Research (IEOR-2018) held at IIT, Mumbai, December 16 – 19, 2018.
- xv. Anikesh Mittal, Pardeep Gupta, Pushpinder, “ Manufacturing Performance Improvement Analysis using Six Sigma DMAIC Methodology: A case study ”, Proceedings of 51st Annual Convention of Operations Research Society of India and International Conference on Industrial Engineering and Operations Research (IEOR-2018) held at IIT, Mumbai, December 16 – 19, 2018.
- xvi. Arvind Jayant, Shweta Singh “An Integrated Approach with MOORA, SWARA, and WASPAS Methods for Selection of 3PLSP” presented in the International Conference ICIEIND 2018, organized by IIIE Odisha Chapter, in collaboration with Siksha ‘O’ Anusandhan (Deemed to be University) during 27th to 30th September 2018, Campus 1 (ITER), Bhubaneswar, Odisha.
- xvii. Janpriy Sharma, Arvind Jayant “Design of Multi echelon supply chain network in manufacturing environment: A Simulation Study” presented in the International Conference ICIEIND 2018, organized by IIIE Odisha Chapter, in collaboration with Siksha ‘O’ Anusandhan (Deemed to be University) during 27th to 30th September 2018, Campus 1 (ITER), Bhubaneswar, Odisha.
- xviii. J.S.Gill, Mulayam Singh, “Improving corrosion resistance of SS316L claddings by GMAW process under the influence of weld pool vibrations” in International conference on metallurgy technology and materials ICMTM -2018 at London, U.K. August 18-19, 2018
- xix. Sumit. Saini, Shankar Singh, K. Singh, A. Singh “Some studies into weldability of rice husk ash aluminium matrix composites using TIG welding (paper ID 57)”, International Conference on Advances in Materials and Manufacturing Applications-IconAMMA 2018,

- Amrita Vishwa Vidyapeetham University Campus, Junnasandra, Carmelaram, Kasavanahalli, Bengaluru, Karnataka 560035 (16-18 August,2018).
- xx. Maninder Singh, Shankar Singh, K. Singh, A. Singh “Multi-objective optimization of Electrical Discharge Machining of Nimonic 75 using Teaching Learning Based Optimization (TLBO) Algorithm”, International Conference on Advances in Materials and Manufacturing Applications-IconAMMA 2018, Amrita Vishwa Vidyapeetham University Campus, Junnasandra, Carmelaram, Kasavanahalli, Bengaluru, Karnataka 560035 (16-18 August,2018).
- xxi. Anmol. S. Verma, Shankar Singh, K. Singh, A. Singh “An Exploratory Investigation and Optimization of Taper Cutting Operation with Wire Electro Discharge Machining (paper ID 84)”, International Conference on Advances in Materials and Manufacturing Applications-IconAMMA 2018, Amrita Vishwa Vidyapeetham University Campus, Junnasandra, Carmelaram, Kasavanahalli, Bengaluru, Karnataka 560035 (16-18 August,2018).
- xxii. Anikesh Mittal, Pardeep Gupta, “Quality Improvement of Intermediate Shaft used in Steering Column through TQM: A Case Study”, Proceedings of the 2nd European Conference on Industrial Engineering and Operations Management (IEOM) Paris, France, July 26-27, 2018.
- xxiii. J.S. Gill, Sikandar Singh Dhiman, “Effect of intermetallic compound deposits on wear resistance and microhardness on AISI 1020 steel substrate using GTAW process” in International conference on design and manufacturing engineering ICDME at Monash University, Melbourne, Australia during July 16-18, 2018.
- xxiv. Vivek Kumar, Vikas Rastogi, P. M. Pathak, “Investigation of effect of wheel/track irregularities on the dynamic response of the railway track using bond graph”, International conference on “Bond graph modeling and simulation” (ICBGM'2018), 9-12 July 2018, Bordeaux, France, Simulation Series Vol. 50(12) Pub: The society for modeling and simulation international, 2018.
- xxv. Sunil Kumar, Rastogi Vikas, Pardeep Gupta, “A hybrid control scheme for modeling and control of 1-DOF flexible arm URM for welding applications”, 13th International Conference on Bond Graph Modeling (ICBGM 2018), BORDEAUX, France, 9 – 12 July 2018, Summer Simulation Multi-Conference (SummerSim'18) Society for Modeling & Simulation International (SCS), Simulation Series Vol 50 (12), 2018, 155-162.
- xxvi. Janpriy Sharma, Arvind Jayant “Modelling, Simulation and Optimization of Product Flow in A Multi-Products Manufacturing Unit: A Case Study” presented in the 5th-International conference on Production & Industrial Engineering (CPIE-2018), organized by NIT Jalandhar at Bangkok, Thailand during 26-29 June 2018.
- xxvii. Jitendra Upadhyay, Anuj Bansal, Jagtar Singh, “Effect on Mechanical And Metallurgical Properties Of Cryogenically Treated Material Ss316” presented in Vth International Conference on Production & Industrial Engineering (CPIE 2018), 26-29 June 2018, held in Bangkok, Thailand.

4. Other publications :

a. Book Chapters

Author(s). Title of chapter. Name of Book, Publisher. Year. ISBN no.

1. **Book Chapter:** Arvind Jayant, Neeru “Decision Support framework for smart implementation of green supply chain practices” in the book titled “Studies in Big data” Springer book series (2019), Springer Publishers, New Delhi-New York-London. **(SCOPUS-INDEXED)**

2. **Book Chapter:** Arvind Jayant, Janpriy Sharma “Modelling, Simulation and Optimization of Product Flow in a Multi-products Manufacturing Unit: A Case Study” in the book titled “Operations Management and Systems Engineering”, pp 185-214, April 2019. Online ISBN978-981-13-6476-1. Springer, Singapore.
3. **Book Chapter:** Jitendra Upadhyay, Anuj Bansal, Jagtar Singh, “Effect on Mechanical and Metallurgical Properties of Cryogenically Treated Material SS316” In: Sharma V., Dixit U., Alba-Baena N. (eds) Manufacturing Engineering. Lecture Notes on Multidisciplinary Industrial Engineering. Springer, Singapore, ISBN: 978-981-13-6287-3, pp. 97-108, 2018.

5. Expert lectures organized:

1. Expert lecture on 13th June 2019 by Prof. Noé G. Alba-Baena, Department of Industrial and Manufacturing Engineering, Universidad Autonoma de Ciudad Juarez (Autonomous University of Juarez City) on Nano Composite Processing was organized in Mechanical Engineering Department, SLIET, Longowal under TEQIP-III (Coordinated by: Anil Kumar Singla and Anuj Bansal)
2. An expert lecture on “Properties & Applications of Smart Lubricants” was delivered by Prof. Vijay Kumar Sukhwani, Government Engineering College, Ujjain, on 4th February 2019 in Department of Mechanical Engineering. Prof. Rajesh Kumar and Prof. Ravinder K. Saxena coordinated the activity.
3. An expert lecture on “Laboratory Safety” was delivered by Captain Anil Kumar (Retd.) Indian Navy now heading Training and sourcing Tenon Group of Company, New Delhi on 18th January, 2019 in Department of Mechanical Engineering. Dr. Indraj Singh, coordinated the activity.
4. An expert lecture on “Latest trends in welding” was delivered by Er. Honny Garg, Senior Engineer, ISGEC, Yamunanagar, Haryana on 31st October, 2018. Prof. Kulwant Singh and Mr. Navneet Goyal coordinated the activity.
5. An expert lecture on “Latest NDT inspection methods in welding, forging and casting” was delivered by Er. D. N. Gaur, Ex. Chief Engineer and Scientist-H, NPCI on 10th October, 2018. Prof. Kulwant Singh coordinated the activity.
6. A motivational lecture was delivered by Er. Digant Kumar, Dy. Manager, HMEL Refinery on 4th October, 2018. Dr. Manoj Kumar and Mr. Navneet Goyal coordinated the activity.
7. An expert lecture on “Quality of Welding Electrodes” was delivered by Er. Sanjay Parmar, Quality Control Engineer, Adani Electrode on 31st October, 2018. Prof. Kulwant Singh and Mr. Navneet Goyal coordinated the activity.
8. The experts from GATEFORUM, Chandigarh have delivered Technical Lecture and interacted with students for preparation of GATE 2019 Examination on 10th October, 2018. Prof. Kulwant Singh coordinated the activity.
9. An expert lecture on “Balance between Stress and Excellence in Life” was delivered by Dr. Navneet Arora, Professor, Department of Mechanical and Industrial Engineering, IIT Roorkee on 06 September, 2018. Prof. Kulwant Singh coordinated the activity.
10. Career Counselling in Auto CAD & Solid Works was organized in the Mechanical Engineering Department on 29 August, 2018. Expert lectures were delivered by Mr. Simranjeet Singh Bains (Regional Manager) and Mr. Arun Choudhary (Technical Manager) Autodesk, Chandigarh. Prof. Rajesh Kumar coordinated the activity.
11. Senior Application Engineer Sh. Mukesh Pathak (Kadkraft Systems Pvt. Ltd., Chandigarh) delivered expert lecture on “Benefits of using Casting Simulation Software Adstefan” on 11th May, 2018. Sh. Rakesh Kumar Coordinated the activity.
12. Sh. Sanjay Kumar Hans, Manager-Cold Chain Project Design Services and Technical Training, Emerson Commercial and Residential solutions, Noida delivered specialized

lecture, "Current Industrial Standards and practices available in market HVAC" on 16 May 2018. Er. Sumit Kumar, and Er. Ankita Omer, Coordinated the activity.

13. An expert lecture on "Latest Trend in Manufacturing of Railway Coaches" was delivered by Er. S. S. Monga, Works Manager, RCF, Kapurthala on 24 April, 2018. Prof. Kulwant Singh coordinated the activity.

6. Research projects awarded during the year/ वर्ष के दौरान प्राप्त की अनुसंधान परियोजनाएं :

S No	Name of Faculty (Principal Investigator)	Name of the Funding agency	Title of the Project	Sanctioned order no.	Sanctioned date	Amount Received (In figures)	Amount received (in words)
1.	Rajesh Kumar (Prof. ME)	Funding Agency: AICTE	Development of fault identification system for water turbine making use of vibration signal and artificial intelligence	Sanction Letter Ref. No. : 8-29RIFD/RP S-NDF/POLICY-1/2018-19	18/03/2019	Rs. 17,00,000/-	Seventeen Lac
2.	Surinder Kumar, A.P (ME)	Funding Agency: TEQIP-III (Sub component: 1.3.2.5)	Tribological investigation of synthesized nanoparticles based composite lubricant.	Sanction Letter No.: SLIET/Dean (R&C)/2019/693	26/03/2019	Rs. 1,00,000/-	One lac only
3.	Anuj Bansal, A.P (ME) & Co-PI: Jonny Singla, A. P. (ME)	Funding Agency: TEQIP-III (Sub component: 1.3.2.5)	Design and development of Cavitation test rig to analyse the cavitation erosion of Hydro-machinery steels under surface modifications	Sanction Letter No.: SLIET/Dean (R&C)/2019/693	26/03/2019	Rs. 1,00,000/-	One lac only

7. Conference/STTP/STC/FDP/Workshops/Seminars Organized by the department/

S No	Name of the program	Duration	No of participants	Sponsoring Agency if any	Remarks
1.	Technology Day Event (Workshop)	One Day, 7th February 2019	40	-	Co-ordinated by the Prof. Rajesh Kumar, HOD(ME) and Prof. Ravinder K. Saxena

2.	Recent Trends in Mechatronics and Robotics (RTMR-2018) (STC)	10-14 Dec. 2018.	35	TEQIP III	Coordinated by Dr. Sunil Kumar and Dr. Vivek Kumar
3.	Energy Efficient Building Materials (Workshop)	One day, 29 Oct.2018	111	PEDA and BEE	Chairmanship of Prof. Rajesh Kumar HOD(ME), Convener Dr. Indraj Singh, Coordinator Mr. Sumit Kumar, Co-coordinator Dr. Sunil Kumar
4.	Solid Works (Workshop)	One day, 30 Sep. 2018	136	SMES Mechanical Engg. SLIET	Coordinated by Mohammad Majid

8. Training Programmes held for teachers and staff/

S. No.	Name of the program	Duration	No of participants	Sponsoring Agency if any	Remarks
1	Training on Digital Micro Vickers Hardness Tester	One Day 28.06. 2019	20	Self	Radical Scientific Equipment Pvt. Ltd, for department faculty/staff. The program was organized by Rakesh Kumar, Associate Professor (ME).

9. Linkage with industry

Time to time faculty members visit industries for discussion of issues related to industrial problems, training and placement of the students.

Faculty members of the department visited Chamber of Industrial and Commercial Undertakings (CICU), Ludhiana on 7th of June 2019 and met its General Secretary and MD of M/s New Swan Industries, Mr. Upkar Singh Ahuja,.

Industrial visits for the students are also organized.

- i. An employability Skill test for Mechanical engineering students under TEQIP-III was organized during 15th-18th Oct.2018.The event was coordinated by Dr. Indraj Singh
- ii. The Students of GME 2016 Batch went for an industrial visit at the Shreyans Industries Ltd. Ahmedgarh on 15 May 2018. Faculty of the department Dr. Manoj Goyal and Mr. Jonny Singla accompanied the students.
- iii. The Students of GWT 2015 visited Rail Coach Factory, Kapurthala on 12 May 2018. Dr. Manoj Goyal accompanied the students.
- iv. The Students of PGWLF-17, GWT-16, and GWT-17 visited ISJEC, Yamunanagar on 4 May 2018. Mr. Navneet Goyal and Mr. Vijander Singh accompanied the students.

10. Collaborative activities

1. One week short term course on “Research Methodology” sponsored by TEQIP-III was jointly organized by Mechanical Engineering Departments of NIT Uttarakhand, MNIT Jaipur and SLIET Longowal from 27th May to 31st May 2019.
2. Mechanical Engineering Department of SLIET, Longowal has organized 2nd International Conference “New Frontiers in Engineering, Science and Technology” (NFEST-2019) on the theme Advances in Mechanical Engineering in association with NIT Kurukshetra, Delhi Technological University, NIT Srinagar and Society for Fusion of Science & Technology. The Conference was held at National Institute of Technology (NIT) Kurukshetra campus during February 18-22, 2019.
3. ISHRAE student chapter was started in collaboration with ISHRAE Chandigarh Chapter on 12/10/2018. Sh. Sumit Kumar and Ms. Ankita Omer shall act as Faculty Coordinators.

11. Curricular achievement & Co-curricular achievement

- i. Activities held by IEI, Kolkata-SLIET Students Chapter (Diploma) under guidance of Faculty advisor Mr. Rakesh Kumar. (01 April 2018-31 March 2019)

S.No.	Name of Events Organized	Dated
1.	Poster Competition on Art & Craft	21-04-2018
2.	Cultural Events	08.05.2018
3.	Certificate Distribution Ceremony	08.05.2018
4.	Lecture on CAD Craft Simulation Software	11.05.2018
5.	Technical General Knowledge Quiz	13-8-2018
6.	Technical General Science Quiz	14-8-2018
7.	Certificate Distribution Ceremony	28.09.2019
8.	Cultural Events	28.09.2019
9.	Group Discussion	30.09.2018
10.	Technical Fun Games	30.09.2018
11.	Swachh Bharat Abhiyan (PPT)	02-10-2018
12.	Swachh SLIET Abhiyan	02-10-2018
13.	Bharat Scouts & Guides	10.10.2018
14.	Mathematician Athletic	19.01.2019
15.	Treasure Hunt	23.02.2019
16.	Max Hospital Health Camp Assisted at Sangrur	24.02.2019
17.	Truth-lie & Balloon Race	02.03.2019

ii. Inauguration Ceremony of “Wall of Kindness”

Happy club launched new project named “**WALL OF KINDNESS**” in SLIET campus on 28.02.2019. Hon’ble Director inaugurated WALL OF KINDNESS in Faculty Club.

A little effort can make a difference, and Wall of Kindness is a unique design to unify us with our brothers and sisters who need our help. Wall of Kindness project is a charity work phenomenon and a kind of welfare aimed at encouraging people to donate miscellaneous useful things.

If you don’t need it, leave it,

If you need it, take it.

12. Any other salient achievements by faculty /staff/Research scholars/students

a) Awards/ Prizes won by students and faculty

i. EFFICYCLE- 2018

Team “Green Rangers 2018” under guidance of Dr Shankar Singh, Professor (Mechanical) as Faculty Advisor, fabricated a three-wheeled hybrid human powered vehicle and participated in “Efficycle 2018”- a student competition conducted by Society of Automotive Engineers Northern India section (SAE-NIS) organized during 09-13 October 2018 at Lovely Professional University (LPU), Jalandhar. The team bagged Overall Winner and got a cash award of ₹1 Lakh in addition to Durability Winner (prize money - ₹30,000); Cost Award (prize money - ₹20,000) and Drive Excellence Award (Prize Money- ₹10,000). Abhijeet Singh, Umer Jameel and Iqbal Singh led the team as its Captain, Vice-Captain and facilitator respectively.



ii. BAJA SAE INDIA 2019

Team “**Junkyard Warriors**” consisting of 19 members under guidance of Dr Shankar Singh, Professor (Mechanical) as Faculty Advisor (FA) fabricated a four-wheeled single-seater all-terrain vehicle (ATV) and participated in Baja SAE India 2019 organised during March 06 –10, 2019 at Indian Institute of Technology (IIT), Ropar (Punjab). The Team led by Abhishek Tiwari as its captain and Arshvir Singh Sidhu as driver and its Vice-captain displayed highest 40 laps in the endurance race of four hours. The team bagged the ‘Durability Award’ and ‘Pride of Punjab’ award (Punjab & Chandigarh) along with cash prize



iii. INTERNATIONAL GO-KART CHAMPIONSHIP- 2019

The team 'Juggernauts' consisting of 20 students of the department under guidance of Dr Shankar Singh, Professor (Mechanical) as Faculty Advisor fabricated the Go-Kart and participated in International Go Kart Championship (IGC - 2019) held during 15-18 March 2019 at Lovely Professional University, Jalandhar. The team bagged 'Best Build Quality Winner' in addition to Runnerup Overall Championship's Winner Trophy and Endurance 1st Runner Up Trophy along with cash prizes



iv. EGVC 2019

The team "Green Rangers 2019" under guidance of Dr Shankar Singh, Professor (Mechanical) as Faculty Advisor fabricating a three-wheeled hybrid human powered vehicle and participated in "EGVC 2019"- a student competition by Society of Automotive Engineers Western India section (SAE-WIS) held during 03-06 April, 2019 at LD College of Engineering, Ahmedabad. The team bagged Overall Winner of EGVC

2019 in addition to Endurance Winner; Maneuverability Award and Best Design Runnerup Award.



v. **Mr. Jastej Singh**, Ph.D. Scholar working under the supervision of Dr. A.S. Shahi, Deptt. of Mechanical Engineering participated in AWSAR (Augmenting Writing Skills for Articulating Research) 2018- a National competition organized by the Department of Science and Technology (DST), Government of India. His research story entitled “Welding research: Effect of joint design on the corrosion resistance of welds” was selected among the 100 selected stories (*ranked 33rd*) and won a cash prize of Rs.10,000/- along with a certificate as consolation prize in the Popular Science Writing on National Science Day, 28th February, 2019.

b) Any other

- i. 1st edition of National Level Social Festival (Social Fest-2019) on the theme “**Engage, Motivate & Empowerment of Youth**” was organized during April 11-13, 2019. It was aimed at instilling a sense of responsibility towards the society among the youth by display of various events, exhibitions, lectures, workshops and competitions organized in the festival under chairmanship of Dr. Arvind Jayant, Associate Professor (Mechanical Engineering).



ii. **Nipun Rover Testing Camp organized by Bharat Scouts & Guides
Coordinator (BSG): Jonny Singla**

A team of 47 students led by Coordinator (BSG) Mr. Jonny Singla, AP (ME) and Mr. Sunil Bansal, AP (EIE) participated in Nipun Rover testing camp organized by Bharat Scouts & Guides, Punjab during the period on and from March 17- 21, 2019 at Baba Hardyal Singh, Natural Re-treat Park, Sheilgaon (H.P.). The students grouped into 8 crew teams named after martyrs and freedom fighters were made aware of camping rules, service to humanity, duty, punctuality and sanitation etc. through display of events like trekking, knot preparation, first aid and gadget during rescue operation, campfire, prayer, flag song, and crew leader meeting etc.



Trekking event



A scene of rescue operation

iii. National Voter's Day was celebrated on 25th January 2019 in Department of Mechanical Engineering. The complete procedure for registration as a voter was explained by the experts. Prof. Kulwant Singh coordinated the activity.

- iv. The students of final year Mechanical Engineering attended GATE coaching during 17 December, 2018 to 04 January, 2019 conducted by the GATE Coach, New Delhi at SLIET Longowal under TEQIP-III.
- v. Prof. Shankar Singh of Mechanical Engineering department was selected to teach AT73.17 (Advanced Material Science for Design & Manufacturing) at Asian Institute of Technology (AIT), Bangkok, Thailand, for a period of 16 weeks during August 2018 semester. The sanction was conveyed vide Office Order F.No.19-1/2018-TS.VII, Dt. 16-07-2018, issued by the Under Secretary to the Govt. of India.
- vi. Mr. Rakesh Kumar coordinated the laboratory experimentation of 06 AMI sponsored students from 1st to 7th July 2018.
- vii. Dr Shankar Singh, Professor (Mechanical Engineering) delivered an expert lecture on “Advance Machining Technologies in Automotive Industry” at AICTE-ISTE sponsored, six Days Induction/Refresher/Faculty Development Programme (14th to 19th May 2018) at Gulzar Group of Institutes, Ludhiana.
- viii. Dr. Rajesh Kumar, Professor & Head of Mechanical Engineering Department delivered an expert lecture on “Preventing Plagiarism, and various software’s for checking Plagiarism” in the one week short term course on “Research Methodology” at NIT Jaipur, sponsored by TEQIP-III and Jointly organized by Department of Mechanical Engineering, NIT Uttarakhand, MNIT Jaipur & SLIET Longowal 30th May 2019.
- ix. Mr. Anil Singla, delivered an expert lecture on “Handling of Reference” in the one-week short term course on “Research Methodology” sponsored by TEQIP-III and Jointly organized by Department of Mechanical Engineering, NIT Uttarakhand, MNIT Jaipur & SLIET Longowal 30th May 2019.
- x. Dr. Rajesh Kumar, Professor & Head of Mechanical Engineering Department, is Evaluator of STTP proposals of AICTE under AIQS.
- xi. Dr. Rajesh Kumar, Professor & Head of Mechanical Engineering Department, has been nominated as Member of the Expert Advisory Group on Device Development Programme of Department of Science and Technology (DST), Government of India.
- xii. Dr. Raj Kumar Yadav, Associate Professor (Mechanical Engineering) is a member of editorial board of ‘Sahitya Parivar’ (ISSN 2250-1495)– a Hindi Magazine.
- xiii. Dr. Raj Kumar Yadav, Associate Professor (Mechanical Engineering) delivered expert lectures on ‘Applied Thermodynamics’ during the period on and from April 15-16, 2019 at NIT, Uttarakhand (Satellite Campus at MNIT, Jaipur).