

Newsletter

Department of Mechanical Engineering



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Madhav Institute of Technology &
Science, Gwalior-474005

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Vision

"To develop innovative and creative Mechanical Engineers catering the global industrial requirements and social needs".

Mission

1. To prepare effective and responsible graduate engineers for global requirements by providing quality education.
2. To enhance knowledge through project and internship in the field of Mechanical and allied engineering.
3. To guide students in acquiring career-oriented jobs in the field of Mechanical engineering.
4. To provide academic environment of excellence, leadership, ethical values and lifelong learning to cater the need of society by sustainable solutions.

Editorial Board:

Faculty Incharge

- Dr. Amit Aherwar
- Dr. Neeraj Mishra

Student members

- Bhumika Mishra
- Arun Singh Rajawat

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

1. Graduates of the program will be able to have successful professional career.
2. Graduates of the program will be able to develop attitude of learning and become adaptable to dynamic industrial and social environment.
3. Graduates of the program will be able to design and develop mechanical system by using skills and knowledge of core competency along with allied engineering skill.
4. Graduates of the program will be able to undertake interdisciplinary research needed to build a sustainable society.

PROGRAM OUTCOMES (POs)

Mechanical and Automobile Engineering Graduates will be able to:

- PO 1** Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO 2** Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO 3** Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO 4** Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO 5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools

including prediction and modeling to complex engineering activities with an understanding of the limitations.

- PO 6** *The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.*
- PO 7** *Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.*
- PO 8** *Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*
- PO 9** *Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.*
- PO 10** *Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.*
- PO 11** *Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.*
- PO 12** *Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.*

Departmental Activities

- **Orientation Programme** for the students of **IInd, and IVth year** (Mechanical and Automobile Engineering) was held on 01/01/2024.



Dr. M.K. Gaur Head of Department

welcomes the students and instructs the importance of program, aware of the academic aspects of the course, attendance, discipline, the rules and regulations of the institute and ensuring the performance and progress of students.

- Thereafter a Course Introduction, discussed credit scheme of department to students is presented by Mr. Vedansh Chaturvedi. A well-crafted curriculum serves as a reference to ensure that students are on the right track. Its components are designed to develop concepts, from a basic level

to increasingly complex topics or skills. Introducing the students to the field of Mechanical **engineering** and Automobile Engineering. The four years' curriculum was explained to them in detail. Highlighted the importance of each subject

He also Discuss the full list of all Open Category Courses offered by the other departments.

- **Introduction of OBE** was presented by Prof. Vaibhav Shivhare. And thereafter Importance of

self-learning through SWAYAM was presented by Dr JyotiVimal.

Thereafter Importance of integrity, ethics and institute guideline for plagiarism was presented by Dr. M.K. Sagar. Prof Sharad Agrawal Encouraged students to participate in GATE.

An expert session has been conducted on “**Energy Sector: A brief Overview and Emerging Employment Opportunities**” by department of mechanical

Awareness Program on “**Basics of Investments and Money Management**” for the students of MITS Gwalior conducted on 13th Oct 2023. MKE program focused



engineering on 03rd Nov 2023, Lecture delivered by **Dr. Neel Raj, Associate Professor & Head Corporate Relation, NTPC School of Business, Noida, India** and faculty coordinator: Dr Manoj Kumar Gaur and Dr Gavendra Norkey, Dr Surendra Kumar Chaurasiya.

- **National Securities Depository Limited (NSDL), “Market Ka Eklavya (MKE)”** an online Investor

on basics of investing and Capital Market (Duration: 2 Hours- 04:00PM – 06:00 PM).

MKE has provided a comprehensive learning experience. Market Ka Eklavya has been a transformative initiative aimed at inculcating financial education in students at a young age to build a financially strong Nation. NSDL

has recognized the importance of equipping the next generation with the knowledge and skills necessary to navigate the complex world of finance. Reaching to students, NSDL are laying the foundation for a financially aware and responsible society. Faculty Coordinator: Dr Gavendra Norkey

- **MITS Gwalior and Institute of engineering organized National Energy Conservation Day** with a series of events and initiatives on its campus. In a concerted effort to promote sustainable practices and address the global challenge of energy conservation. One of the highlights of the event was focusing on ground breaking technologies designed to promote energy efficiency. These ideas spanned various disciplines, from advanced materials for **solar energy to smart grid innovations that optimize energy distribution.**

In this event Dr. C.S Malvi, professor in department of mechanical engineering MITS Gwalior, delivered a keynote address emphasizing the critical role of academic institutions in driving innovation for sustainable energy solutions. "MITS is committed to being at the forefront of research and development in the field of energy



conservation. Through collaborative efforts and a focus on cutting-edge technologies, we aim to contribute to a greener and more sustainable planet," said.

Faculty Achievement and Activities

Research Publications

1. **Swati Sharma, D. Anitha, Vedansh Chaturvedi, Jyoti Vimal, Pratesh Jayaswal, Kuldeep K. Saxena, Amit Aherwar, Vimal Kumar Pathak & Sherzod Shukhratovich Abdullaev**, "MIG welding process parameter optimisation of AISI 1026 steel using Taguchi-TOPSIS method". International Journal on Interactive Design and Manufacturing (2023). <https://doi.org/10.1007/s12008-023-01528-w>.

Patents/ IPR

1. Indian Design patent "**Appratus for Composite Fabrication Structure**" has been granted on 30/10/2023. Design Number:395486-001, **Published by Dr Gavendra Norkey, Dr.Surendra Kumar Chourasiya Assistant Professor**, Mechanical Engineering Department, MITS Gwalior (MP).

NPTEL/FDP/workshop/STTP/STC/Conference

1. **Dr Gavendra Norkey** completed a NPTEL-AICTE Faculty Development Programme on "**Fundamentals of Additive Manufacturing Technologies**" during July-Oct 2023, organized by IIT Madras. <https://drive.google.com/drive/folders/1bRlp-IC9GurTRQZo0v6v9Ny8FUtSrzkI?usp=sharing>
2. **Vedansh Chaturvedi** completed a NPTEL-AICTE Faculty Development Programme on "**Research Methodology**" during Aug.-Oct. 2023 organized by IIT, Madras. <https://drive.google.com/file/d/11l6AmqzOmYtwlInEz1V2wWpSfv4LhbK6/view?usp=sharing>
3. **Mr Vaibhav Shivhare** completed a NPTEL-AICTE Faculty Development Programme on "**Accreditation and Outcome Based Learning**" during Aug.-Oct. 2023 organized by IIT, Madras. https://drive.google.com/file/d/1-7S0SfM6hDWsSk75doyGvH55mdmXuo55/view?usp=drive_link

4. **Mr Vaibhav Shivhare** completed a NPTEL-AICTE Faculty Development Programme on "**Python for Data Science**" during Jul-Aug. 2023 organized by IIT, Madras.

https://drive.google.com/file/d/1-7S0SfM6hDWsSk75doyGvH55mdmXuo55/view?usp=drive_link

5. **Dr. Jyoti Vimal** completed a NPTEL online course on "**Research Methodology**" during Aug.-Oct. 2023 organized by IIT, Madras with Elite Certificate. <https://drive.google.com/file/d/103W23sRYm-CVsZ8-Zv-AKdb5CcXec9Dz/view?usp=drivesdk>

Appreciation letter, Recognition



Dr. Surendra Kumar Chourasiya received Appreciation Letter in B.Tech Second Year.



Mr. Sharad Agrawal received Appreciation Letter in B.Tech First Year Engineering Graphics subject with average FFI 4.61.

Students Achievement and Activities

MTech/ PhD Final Dissertation

1. **Mr. Aditya Agarwal** student of **M-tech** submitted his final thesis and appeared in final dissertation/viva voce under the **guidance of Prof B.K Pandey**.
2. **Ms. Swati Sharma** student of **M-tech** appeared in final dissertation Viva-voce under the **guidance of Mr. Vedansh Chaturvedi**.
3. **Saransh Bairagi, Automobile Engineering** final year student Achieved the All INDIA RANK OF 766 in ICPC Preliminary Round Amritapuri 2023 and Qualified for Regionals, under the **Team Name-Team Elderwands MITS**.

Students Placements

1. **Six students** have been shortlisted for **the ANH Engineering Services Pvt. Ltd. New Delhi**.
2. **Three students** have been shortlisted in **the TAFE motors, Indore** for the internship as well as placement.

Outreach Activities

Students of MITS (Madhav Institute of Technology and Science) showcased an exhibition at the National Conference, which is a part of the **All India Gita Sammelan**. In this exhibition organized by students of Madhav Technological and Science Institute, posters related to the Gita were displayed by students of the institute. The exhibition **highlighted the concepts of Karma Yoga, Jnana Yoga, and Bhakti Yoga** as mentioned in the Gita. Additionally, attention was given to Dhyana Yoga and other characters from the Mahabharata.



Student articles

Motivation of the month of October

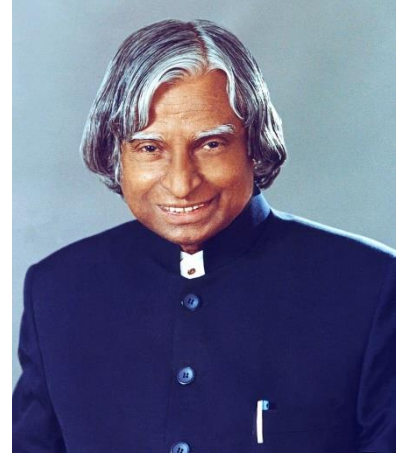
Dr. A. P. J. Abdul Kalam (Missile Man) (Aeronautical Engineering)

Avul Pakir Jainulabdeen Abdul Kalam was born on 15 October 1931, to a Tamil Muslim family in the pilgrimage centre of Rameswaram on Pamban Island, then in the Madras Presidency and now in the State of Tamil Nadu.

Books and publications

Wings of Fire, India 2020, Ignited Minds, Target 3 Billion, *Transcendence: My Spiritual Experiences with Pramukh Swami ji*, Indomitable Spirit
Associated projects

Polar Satellite Launch Vehicle, Project Devil, Project Valiant, *Smiling Buddha Pokhran-II*



Kalam's veena on display at the Rashtrapati Bhavan Museum in New Delhi

न चोरहार्यं न राजहार्यं न भ्रतृभाज्यं न च भारकारि।
व्यये कृते वर्धति एव नित्यं विद्याधनं सर्वधनप्रधानम्॥

-Editor's column

NCC C Certificate: Shaping Tomorrow's Leaders Today

Introduction:

The National Cadet Corps (NCC) in India is a dynamic organization that has played a pivotal role in molding the character and leadership abilities of young individuals for decades. Among the various certificates offered by the NCC, the C Certificate holds a special place. In this article, we will explore the significance of the NCC C Certificate and its impact on the youth of our nation.

The NCC C Certificate: The NCC C Certificate is the highest level of certification attainable within the NCC. It is a testament to a cadet's unwavering dedication, discipline, and leadership skills. To earn this prestigious certificate, a cadet must undergo a rigorous and multifaceted training program that covers a wide range of activities, including drill, shooting, map reading, and more.



Key Highlights of the NCC C Certificate:

Leadership Development: The NCC C Certificate program places a strong

emphasis on leadership development. Cadets are trained to take charge, make decisions, and lead their peers effectively. These skills are not only valuable within the NCC but also in various aspects of life.

National Service: NCC cadets with a C Certificate have often been at the forefront of national service activities. They participate in social and community service projects, disaster relief efforts, and other initiatives that contribute to the welfare of society.

Enhanced Skill set: The comprehensive training provided as part of the C Certificate program equips cadets with a wide range of skills, from marksmanship and first aid to disaster management and communication. These skills make them better prepared for the challenges they may encounter in their future careers.

Personal Growth: Beyond the development of hard skills, the NCC C Certificate fosters personal growth. Cadets learn the values of teamwork, discipline, time management, and responsibility, which are instrumental in shaping their character.

Impact on Cadets: Earning the NCC C Certificate is not just a badge of honor but a life-changing experience. Cadets who successfully complete this program emerge as well-rounded individuals with a strong sense of duty, an unwavering commitment to the nation, and the confidence to face

any challenge that comes their way. The NCC C Certificate is also a significant asset when pursuing higher education or employment opportunities. Many colleges and organizations recognize the value of NCC training and actively seek out cadets with C Certificates.

Conclusion: The NCC C Certificate is a testament to the dedication and hard work of NCC cadets. It not only equips them with essential skills and leadership abilities but also instills in them a sense of duty and responsibility towards our nation. As we look to the future, the impact of the NCC C Certificate will continue to shine through the actions and contributions of the young leaders it produces. These cadets are not just the future of our nation; they are actively shaping it today.

Bhumika Mishra

4th Yr, Mechanical Engineering.
