

## An Inspirational Academic Experience At A Leading Aeronautical School

## ABOUT SCHOOL OF AERONAUTICS

School of Aeronautics was established in 1992 and since then we are into providing world class Aviation Education, in various disciplines. School of Aeronautics (Neemrana) was established in 2006, after successfully running School of Aeronautics (Delhi) for 14 years.

The managing body is Laxmi Narain Verma Memorial Society, is founded in the loving memory of Shri L.N. Verma and registered under Societies registration Act XXI of 1860, registered at New Delhi.

School of Aeronautics (Neemrana) is situated in NCR on New Delhi Jaipur National Highway No. 8 and is just 2 hours drive from New Delhi on six lane express way. The functional & technical infra-structure is operational on sprawling 5 acres campus, set in serene environment. The confluence of minds and cultures from all across the Aviation industry provides the ambience in shaping the students into aviation leaders.

School of Aeronautics (Neemrana) provides platform and environment for open discussions and interactions between the faculty and students and is designed to ignite and serve the urge to explore and learn beyond boundaries. Diversity and flexibility of options of courses to choose from is aimed at enabling students to pursue studies most suited to their intellect and talent. This would enable the students to discover, nurture and expand their individual talents, skills and interests so that they emerge as leaders and path breakers wherever they go.

ABOUT Mr. Laxmi Narain Verma



We have simply received his blessings by being in right place at the right time. We are then custodians of the financial resources that have been bestowed upon us and, as such, we should deploy them for the benefit of mankind to the best of our ability. Our mission is to provide opportunities for young people who are in need of education so they can forge a better future for themselves. We seek to improve our formative years through infrastructural improvements and ultimately, the quality of our educational experience.

Mr. (Late) Laxmi Narain Verma, an eminent and visionary IRS Officer, who lived an honest and dedicated life, was having a very high vision to help the nation, by educating the youth of the country. Due to his restrictions he was unable to start any organization to help the needful. Taking care of his vision and blessings, Mr. C.C.Ashoka, formed Laxmi Narain Verma Memorial Society, in his loving memory, with the main objective of dispersion of knowledge in the field of Aeronautical Sciences, Aircraft Engineering and other Engineering professional fields.

The Society was also established with the objective of development of social, educational and intellectual level of boys & girls. The Society also aims to develop new institutions for imparting higher education.

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## Message from the Director



To meet the challenges of the ever-changing world, the one and only resource that we can safely and constantly turn back to is human resource. Just as man turns inward to find strength and vigour to battle the vagaries of life, the nation has to turn and look to manpower for development.

In an endeavour to empower the human resource with the necessary education, the Laxmi Narain Verma Memorial Society Group of Institutions prepares the young citizens of today to meet the future confidently.

With dedicated and high-calibre professional expertise, the institution imparts the best of theory and practical knowledge and sends forth professionals of every discipline into the global society.

It is my privilege to welcome the fresh batch of students and I can assure, that they are in an institution which would help them to be at the forefront of technological revolutions. They can be confident of their competence and their quality standards, also of their integrity and their ability to deliver. Because these are the hallmarks of the various institutions in the Laxmi Narain Verma Memorial Society Group of Institutes.

**Er. C.C. Ashoka**

## Message from the Dy. Director



Going to School of Aeronautics (Neemrana) should be a career and life enhancing experience. We believe that, here at School of Aeronautics (Neemrana), we have the right balance, with excellent teaching matched by an enviable quality of life.

By choosing to study at School of Aeronautics (Neemrana) you will join a friendly and lively community. The academic environment is outstanding and provides an ideal foundation for your personal and professional development.

This institution has been rendering service since 20 years in the field of education and enlightening the lives of youngsters. It is one of the most sought after Engineering Institutions in India, reputed for its high level of academic excellence, excellent infrastructure for curricular, co-curricular activities, sports and recreation facilities.

The momentum we have gained as one of the most ambitious, research-led aviation school has made us a choice for a great many talented students, and the increase in applications to study here are a clear indication of our growing success.

Students choose our aviation school because we offer access to quality education and challenging career paths. We aim to produce graduates who have the knowledge and skills to play significant roles in the Global Community.

Let us help you climb new heights in your dreams and aspirations to create a first-class future for yourself.

Welcome to a rewarding experience at School of Aeronautics (Neemrana).

**Ms. Vijay Lakshmi**

## Message from the C.E.O.



At School of Aeronautics (Neemrana) we believe that the rights and privileges of education brings the responsibility to make a good use of knowledge, to change the world for the better and to help ensure that succeeding generations have the same opportunities to grow, to excel and to set benchmarks. Education is a gift that one generation gives to the next. Indeed, this aviation school owes its existence to our Founder Director Mr. C.C. Ashoka's generosity and commitment to help future generations.

Here you are surrounded by astonishing resources: fascinating fellow students from all over the country, a learned and caring faculty, a magnificent library, superb athletic facilities and student organizations covering every conceivable interest - the performing arts and community service among them. You will have complete freedom to explore, learn about new subjects, meet new people, and pursue new passions. I want to encourage you, in every way that I can, to make the most of this rare and unique opportunity.

You will not only emerge as a more broadly educated person, but you will also stand a better chance of discovering an unsuspected passion that helps to shape the future course of your life. Each of the scholarly disciplines provides a different perspective on human experience; each allows you a different window on our accumulated knowledge of nature and culture; and each, quite literally, allows you to see the world with a different perspective.

In engineering, we have unprecedented opportunities to develop new materials, new aeronautical devices and new sources of energy. One of the virtues of studying science and engineering at a place like School of Aeronautics (Neemrana) is that you can practice science and engineering while you study it; you can work in research laboratories alongside your professors on problems at the very frontier of knowledge.

I welcome you to search the never ending arch of amalgamated knowledge, walk the untrodden path of seizing opportunities never thought of and be the beacon for the generations to come.

I welcome you to School of Aeronautics (Neemrana), the ocean of opportunities.

**Er. D. Pattanayak**

## The Vision

To make every man a success  
and no man a failure.

## The Mission

To provide every individual with a conducive environment suitable to achieve his/her career goals with a strong emphasis on personality development and to offer the academically inclined resources to gain quality education in all spheres of engineering, applied sciences and management, without compromising on the quality and code of ethics of each student of the institution.

To achieve this mission the institution offers a well planned course structure, aesthetically built building, well furnished class rooms, library, workshops and sport facility, an ideal environment for pursuit of a professional career.

The mission is being accomplished in the sense that in most courses a good percentage of result is maintained

## Instructional Pattern



1 Class Room Instructions and Practicals

2 Assignment and Project Allotment

3 Fortnightly Class Test

4 Debriefing of Class Tests

5 Class Room Instructions and Practicals

6 Assignment

7 Monthly Tests

8 Debriefing of Monthly Tests

9 Procedure 1 to 8 Continues for five months followed by revision, submission of projects, assignments and their assessments

10 Term End Examination Conducted by SOA

11 End of Semester



## Faculty



**Dr. Samsher Bahadur Batra**  
Ph.D, M.E., B.E., B.Sc.

**Dr. Vijay Shankar Bajpai**  
Ph.D, M.Tech., LLB, MBA

**Mr. Debadarshi Pattanayak**  
M.Tech., B.E.

**Mr. Jyoti Mohapatra**  
M.Tech., B.E.

**Mr. Bipin Kumar Dwivedi**  
M.Tech., A.M.Ae.S.I.

**Ms. Vijay Laxmi Verma**  
M.Sc., B.Sc.

**Mr. Sudesh Kumar**  
B.E., BAMEL

**Mr. Raviraj Shrikrishna**  
M.Tech. (Pursuing), B.Tech.

**Mr. K.I.A. Siddiqi**  
M.Sc., B.Ed.

**Mr. Ram Naresh Jha**  
M.Tech., B.E.

**Mr. Pankaj Tomar**  
M.Sc. (Math), B.Sc.

**Mr. Rajender Prasad (Ex-Indian Navy)**  
Dip. Airframe & Engine, AME

**Mr. Manish Yadav (Ex-Indian Navy)**  
Dip. A/C Electrical, AME

**Mr. B.S. Mann**  
Dip. (Electronics), BAMEL (ES, RN)

**Mr. G. Mandal**  
Dip. (Mech.), AME

**Mr. Ashim Kumar Das**  
CTI (Carpentary)



**Mr. Raj Kumar Singh**  
CTI (Machining)

**Dr. Anu Sharma**  
Ph.D., M.Sc., B.Sc.

**Mr. S. S. Mohapatra**  
M.Tech, B.Tech

**Mr. Kuldeep**  
M.Tech, B.Tech

**Ms. Kavita Rawat**  
M.Sc., B.Sc.

**Mr. Srikant Tripathi**  
M.E., B.E.

**Ms. Archana Dutt**  
M.Sc., B.A.C.A.

**Mr. Manbir Singh**  
M.Tech, B.E.

**Ms. Navneet Kaur**  
M.Sc., B.Sc.

**Mr. Bhupender Bakshi**  
B.Tech, AME

**Dr. Balraj Gupta**  
Ph.D, M.Tech, B.Tech

**Mr. Sudhir Kumar Jain**  
M.Tech, B.E.

**Mr. Arjun singh**  
B.Tech Equivalent

**Mr. Sanjay Kumar**  
M.Tech., B.E.

**Mr. Anubhav Goel**  
B.Tech (CAD, CATIA Trainer)

**Mr. Saurav Panday**  
M.Sc., B.Sc.

**Mr. Rinesh T.**  
M.Sc., B.Sc.

**Mr. Rajender Singh**  
M.Tech, B.E.

**Mr. Lav Verma**  
M.Tech, B.Tech

**Ms. Makupan Wijunamai**  
M.A.

**Ms. Ambika Bhatnagar**  
M.A., B.A.(H)

**Mr. Naresh Kumar**  
M.Tech, B.Tech

**Mr. Praveen**  
M.Tech, B.Tech

**Ms. Rabarioelina Nirisoa Nantenaina**  
M.A., B.A., French Teacher



## Infrastructure



Laxmi Narain Verma Memorial Society, needless to say, provides all required infrastructural facilities to its students and teachers to live up to its own expectation.

- The state-of-the-art, air-conditioned classrooms equipped with audio visual facility.
- Well equipped modern laboratories suitable for experiments and learning.
- Hi-Tech Computer Lab and Communication Lab.
- Wi-Fi Campus and online college management system.
- Tutorial Rooms for interaction and exploratory learning in small groups.
- Housekeeping and Laundry facilities at Hostels.
- Library well designed as Learning Resource Center.
- Sports facilities of Tennis, Badminton, Gymnasium etc.
- In-house catering services offering Excellent Food.
- A serene and beautiful campus in the lap of surrounding Aravali mountains, a perfect environment for studies and recreational activities.
- Safe, secure and separate Hostel facilities for boys and girls with option of Airconditioned accommodation.
- Common room for boys and girls with LCD and indoor games.
- Provides extra practical to make them industry ready.
- Design softwares like CAD, CATIA, CFD, MATLAB and ANSB.
- Foreign language is being taught.



## Library as Resource Centre



The library of School of Aeronautics (Neemrana) library is established as a centre for knowledge and learning, dedicated to foster intellectual growth that supports the students and faculty for their research pursuits. The main strength of our library is to continuously collect, organize and preserve the precious collections of genius' thought and creativity. Its rich collection of resources, includes books, national and international journals, magazines, multi-media resources, case studies, project reports etc. The library also has an online catalogue system where students can find books from any LAN connected computer. Library as is also connected with various e-Journals and books.



## Interdisciplinary Teaching & Learning



School of Aeronautics (Neemrana) strongly believes that there is much to share and learn by interdisciplinary teaching among faculty members and students from different disciplines such as AME, Aeronautical and technology etc. Our vision is to achieve breakthrough at the junction of interdisciplinary convergence of the highest form. Therefore, School of Aeronautics (Neemrana) inculcates and bring various disciplines of teaching on a common platform for discussions as well as for learning.

To make sure that our teaching standards are outstanding, we have appointed and are further bringing in world-class faculty from India and abroad.

## Students Lounge and Incubator



Where classroom provides a rigorous setting to the students, Students Lounge gives them a modern and relaxed environment to discuss assignments and team work over a cup of coffee with their mentors and facilitators. The students incubator gives the students an opportunity to exercise entrepreneurship while studying.



## Placements

School of Aeronautics (Neemrana) is a preferred destination for students who are looking for an outstanding career and growth. School of Aeronautics (Neemrana) with its world class infrastructure, faculty, teaching practices, curriculum, practical work, exposure and experience with relevant industries, international network, connectivity with the world, prepares students to accept global challenges. The environment of Laboratories and workshops for Aviation students, project work on different subjects, grooms our students to shine in all spheres of life. A perfect result oriented learning environment is the key feature of School of Aeronautics (Neemrana).

At School of Aeronautics (Neemrana) we have built exceptional industrially integrated programs where there is an extreme connectivity between our curriculums and applicability of the taught content in the real life scenarios or industrial perspectives. Our prime motive is to enable our students for a successful career in the field of their expertise, so the activities for the placements of our students happen all year around. Our placement office regularly interacts and coordinates with the local industries, companies in Delhi NCR and across India for organizing placement training workshops for our students throughout the academic session. The companies also visit the campus for Pre-Placement talks both before the selection processes and the final recruitment. Based on the information about the requirements of the companies, our placement office regularly communicates with the students through various notice boards of the School of Aeronautics (Neemrana) and online interaction forums, whereby interested students contact the placement officers.

'Subsequently the CVs are forwarded to the companies for further processing. 'The companies then shortlist candidates that fit their job profiles from the application pool and sends the same to the Placement Office. 'A mutually convenient date is finalized for the selection processes. The companies are required to furnish the final list of students preferably on the same day, or as soon as possible, after completion of the selection process. 'The offer letters are sent to the Placement Office to be handed over to the students. 'Offer acceptances (from the students) are then forwarded to the respective companies by the placement officer.





## Academics



Education at School of Aeronautics (Neemrana) is not be limited to known curricular and narrow fields of specialization. Absorption and Integration of new worldwide trends in higher education, and flexibility of course is aimed at enabling students to pursue studies to discover and explore their individual talents.

## Teaching & Faculty

The innovative teaching methodology of School of Aeronautics (Neemrana) results in outstanding performance by the students and is fed by informed research.”



It is a well known fact that students can learn more effectively when actively involved in the learning process. At School of Aeronautics (Neemrana), we believe that effective teaching is not a destination; rather it is a never ending journey that has to be navigated through with the involvement of the students. Advances in the internet and social technologies have made enormous learning content available on the internet, in such times the role of an effective teacher is that of a facilitator of learning. We have developed a unique approach of teaching, development and delivery at School of Aeronautics (Neemrana) with continuous research. We follow a unique pedagogy for teaching the concepts of its technical and professional programmes, so that students can learn with altitude and empathy: The pedagogy lays emphasis on:

- Reinforcement of learned concepts through case studies, simulations, experimentation, collaborative team exercises, presentations, experimental learning techniques, participatory learning experiences and portfolio/project development work.
- Communication development through guest lectures, conferences, seminars, group discussions and simulations.
- Development of wide range of human skills and techniques for creative thinking & decision making.
- Practice through projects, experiments and hands on/on the job training.
- Leadership & Teamwork skills gained through various group activities. Application by real life training, Industrial visits, tours and Industry apprenticeship.



## Learning Beyond the Classroom

In a world where more business deals are done at a golf course or a tennis court than the traditional board room, it is of prime importance to School of Aeronautics (Neemrana) to involve our students beyond the classroom too. At School of Aeronautics (Neemrana), we are proud to offer our students extensive range of activities. The activities make full use of the talents and personal skills of our students thus continuously motivating them and giving them energy and courage to compete in the world of opportunities.

There are many clubs and activities available for the students after the college hours such as, Outdoor Club (Biking, Hiking, Golf, River rafting, Go carting, Bowling etc.). Here are just a few more activities at School of Aeronautics (Neemrana):

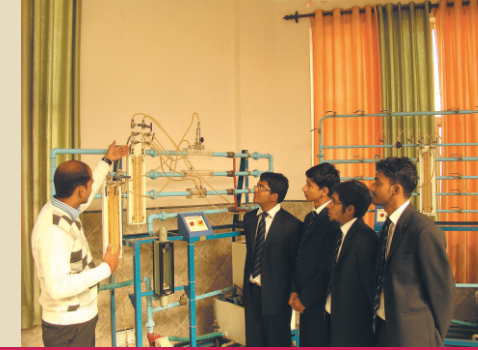
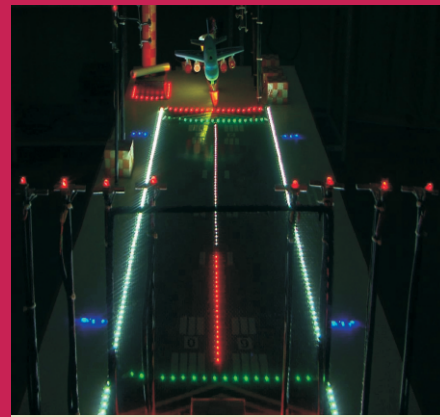
- Aero club
- Sports Club
- Cultural & Dramatics Club
- Art Club
- Photography Club
- Editorial Club
- Audio/Visual Club
- Books Club
- Adventure Club
- Intellectual Club
- Green Club
- Meditation Club
- Techno Club



We strongly believe that student-organized clubs and activities play an important role in campus life. Besides sharing common interests and having fun, these clubs and activities offer immense opportunities to expand network, converge with the peers of other streams, strengthen leadership styles and managerial experiences, develop interpersonal skills and most importantly become a part of the School of Aeronautics family.



## Photo Gallery









## Academic Programs

The course curriculum of Aeronautical Engineering is made up of maintenance as well as design aspect of the present day aviation and aerospace engineering.

It prepares graduates with knowledge, problem solving ability, hands-on skills to enter career in the design, installation, manufacturing, testing, evaluation, technical sales, or maintenance of aeronautical systems.

In the present ongoing boom in the aerospace and civil aviation industry, globally there is a continuous demand for skilled and well-trained AMEs (Aircraft Maintenance Engineers). At School of Aeronautics (Neemrana), our continued growth and success has created standing opportunities, yet again in the ever expanding and feverishly competitive field of aviation.

At School of Aeronautics (Neemrana) we assure you, as and when you culminate your course, You will be well armed to take on any task assigned maintenance, inspection, monitoring, and overhauling of power-plant, airframe, electrical system, Instrument & Radio Navigation system, head on with confidence and a smile eventually becoming an integral contributor to the ever demanding and expanding standards in the world of Aviation.

### Our Academic Programs are:

#### B.Tech

1. Aeronautical Engineering
2. Mechatronics







# School of Aeronautics Neemrana

## B.Tech. (Aeronautical Engineering)

You have chosen the best time to begin your career in aviation. The aviation industry has “come of age”. It is vital part of world's economy and way of life. The demand for skilled Engineers continues to grow year after year.

School of Aeronautics (Neemrana) is the first college to be approved by AICTE for Aeronautical Engineering in Rajasthan. It has got all the relevant modern and advance lab facilities for Aeronautical Engineering.

### What is Aeronautical Engineering

Basically aeronautical involves activities of designing, developing and constructing of machine planes that can fly, as commonly known by the word - aircraft.

The aeronautical engineers are primarily responsible for creation of safer and more energy efficient economical methods for travelling, including aircraft, helicopters, satellites, missiles and spacecrafts. These includes science of propulsion and aerodynamics, even it covers the development and selection of materials and equipment that are utilized in aircraft.

Aero Engineer's are part of the designing process to make that fastest vehicle. Eg: Airplanes that weights over a million pounds can ease into the air and spacecraft travels 17.000 miles an hour.

### What do Aeronautical Engineers do?

Aero engineers bring concept into reality by emphasizing on the design of aerofoils (wings). Propulsion is another aspect in aeronautical engineering. The force of propulsion helps an airplane to remain in flight, and encompasses the design and development of engines. These two basic principles are considered when choice of material for aircraft design, strength and weight. Selection of material is a crucial area of specialization for the aeronautical engineering.

As an Aero graduates you can specialize in any areas including Structural designing, Flight mechanic and control system, Aerodynamics, Instrumentation and communication, Manufacturing and maintenance.

### Aeronautical Engineering Career Opportunities

- Commercial aviation industry
- Government defence forces
- Flight crew in both commercial and defence aviation
- Research institutes
- Space exploration centres.

### Aeronautical Engineers Employers Includes

HAL, NAL, Defence services, ISRO, DRDO, Taneja Aerospace, Mahindra Aerospace, GE, Snigma, Infotech on national basis to name a few, where as on internationally one can look for employment in Aer Lingus, Airbus the Air Corps, FLS Aerospace, Rolls Royce and Ryanair.

### Higher Studies

They can also go for higher studies in the filed Aerospace, Rocket Propulsion, Aerodynamics Structure etc.

### Aeronautical Engineering Future Prospects

- Create new, innovative methods of transportation to meet future demands.
- Improve safety of an aircraft travel with more energy-efficient, economical methods.
- Develop and manufacture of rockets and satellites.
- Research and development formula one racing cars
- Perform and supervising the design of military aircraft.

Considered as the most challenging of all the trades in engineering, Aeronautical Engineering is the most sought after course among numerous Engineering Colleges in India. Enrolled into this course, you get the privilege to function with the finest created and developed and technologically advanced branches of engineering. Aeronautical Engineering is all about designing and construction, testing and operation as nicely as maintenance of aircraft and aircraft components. The engineers would be working for the most guarded and expensive equipments that the investigation and development people have come up with. And they would be subjected to world class facility when they are by way of with the course. There are different Career Alternatives in Engineering.

Basically, the thrust in this region is on development and style of equipments which extends even to space and satellite investigation. It is a real exciting field with immense scope of opportunities which ensure that you grow professionally, understand and get the satisfaction of job. Somebody going in for Aeronautical Engineering has to be physically fit and fully committed to the work at hand. Several students are generating a bright Career in Aeronautical Engineering.

### Accreditations

Approved by All India Council for Technical Education and Affiliated to Rajasthan Technical University, Kota, Rajasthan.



# Aeronautical Engineering Programs

## Semester I

1. Communicative English	2. Engineering Mathematics-I	3. Physics-I
4. Engineering Chemistry	5. Basic Electrical & Electronics Engg.	6. Physics Lab-I
7. Engineering Chemistry Lab	8. Practical Geometry	9. Workshop Practice
10. Discipline & Extra Curricular Activities		

## Semester II

1. Communication Techniques	2. Engineering Mathematics-II	3. Physics-II
4. Chemistry & Environmental Engineering	5. Engineering Mechanics	6. Fundamentals of Computer Programming
7. Physics Lab-II	8. Chemistry & Environmental Engg. Lab	9. Computer Programming Lab
10. Machine Drawing	11. Communication Technique Lab	12. Discipline & Extra Curricular Activities

## Semester III

1. Mechanics of Solid	2. Engineering Thermodynamics	3. Manufacturing Processes
4. OOPS	5. Materials Sciences & Engineering	6. Advanced Engg. Mathematics-I
7. Strength of Materials Lab	8. Material Science Lab	9. Production Practice Lab
10. Computer Engineering Lab	11. Discipline & Extra Curricular Activities	

## Semester IV

1. Introduction of Aeronautics	2. Fluid Mechanics	3. Instrumentation & Control Engg.
4. Theory of Machines	5. Aircraft Materials	6. Machine Design
7. Machine Design Sessional	8. Instrumentation Lab	9. Fluid Mechanics Lab
10. Introduction to Aeronautics Lab	11. Discipline & Extracurricular Activities	

## Semester V

1. Heat Transfer	2. Vibration Engineering	3. Aircraft System
4. Aircraft Structure-I	5. Propulsion	6. Reliability & Maintenance Engg.*
7. Fatigue and Fracture*	8. Total Quality Management*	9. Thermal Engineering Lab
10. Aircraft Structures Lab	11. Aircraft System Lab	12. Propulsion Lab
13. Discipline & Extracurricular Activities		

## Semester VI

1. Digital Techniques	2. Mechanics of Composite Materials	3. Aerodynamics-I
4. Aircraft Structure-II	5. Aircraft Design	6. Maintenance of Power Plant System*
7. CFD*	8. Helicopter Theory*	9. Aircraft Design Lab
10. Aerodynamics Lab	11. Airframe Lab	12. Soft Skill Development Lab
13. Discipline & Extra Curricular Activities		

## Semester VII

1. Aircraft Communication & Navigation	2. FEM	3. Aerodynamics-II
4. Civil Aviation & Regulation	5. Aircraft Instrument	6. Maintenance of Airframe System*
7. Theory of Plate & Shells*	8. Rocket & Missile Design*	9. Finite Element Lab
10. Aircraft Communication Systems Lab	11. Aircraft Instruments Lab	12. Practical Training & Industrial visit
13. Project-I	14. Discipline & Extracurricular Activities	

## Semester VIII

1. Avionics	2. Aircraft Performance	3. Aircraft Stability and Control
4. Aircraft Electrical Systems*	5. Aeroelasticity*	6. Space Dynamics*
7. Avionics Lab	8. Aircraft Electrical Lab	9. CAD Lab
10. Project-II	11. Seminar	12. Discipline & Extra Curricular Activities

**Note :** Subjects with \* marking are elective subjects, any one has to be chosen in the relevant semester.





# School of Aeronautics N e e m r a n a

## B.Tech (Mechatronics)

### Introduction of Course

Mechatronics is a design process that includes a combination of mechanical engineering, electrical engineering, tele-communication engineering, control engineering, computer engineering, robotics, product design and manufacturing, in order to improve and /or optimize the products functionality.

### Nature of Job

Mechatronics is a new, interdisciplinary field involving synergistic combination of precision mechanical engg., electronic control and systems thinking in the design of products and manufacturing processes, that is to say, it rejects splitting engineering into separate disciplines. Originally, it just included the combination of mechanics and electronics, hence the word is combination of mechanics + electronics = Mechatronics, however as technical systems have become more and more complex the word has been broadened to include more technical areas.

### Scope

The course prepares the student for new emerging, cutting edge technologies of present and future machine vision, Automation and robotics, servomechanism, sensing and control systems, computer, such as computer driven machines like IE CNC milling machines, expert systems, Diagnostic, reliability and control system techniques, computer aided & integrated manufacturing systems, computer added design etc. In short, after completion of the course, the student will be fully equipped to undertake all future R & D Challenges.





# Mechatronics Programs

## Semester I

1. Communicative English	2. Engineering Mathematics-I	3. Physics-I
4. Engineering Chemistry	5. Basic Electrical & Electronics Engg.	6. Physics Lab-I
7. Engineering Chemistry Lab	8. Practical Geometry	9. Workshop Practice
10. Discipline & Extra Curricular Activities		

## Semester II

1. Communication Techniques	2. Engineering Mathematics-II	3. Physics-II
4. Chemistry & Environmental Engineering	5. Engineering Mechanics	6. Fundamentals of Computer Programming
7. Physics Lab-II	8. Chemistry & Environmental Engg. Lab	9. Computer Programming Lab
10. Machine Drawing	11. Communication Technique Lab	12. Discipline & Extra Curricular Activities

## Semester III

1. Mechanics of Solid	2. Engineering Thermodynamics	3. Manufacturing Processes
4. Electromagnetic Properties of Materials	5. Analog Electronics-I	6. Advanced Engineering Mathematics
7. Machine Drawing	8. Thermal Engineering Lab-I	9. Production Engineering Practices
10. Analog Electronics Lab-I	11. Discipline & Extra Curricular Activities	

## Semester IV

1. Fluid Mechanics	2. Dynamics of Machinery	3. Control Systems
4. Measurement and Control	5. Engineering Metrology	6. Microprocessors & Applications
7. Fluid Mechanics Lab	8. Microprocessors Laboratory	9. Dynamics of Machine Lab-I
10. Mechanical Measurement & Control Laboratory	11. Discipline & Extracurricular Activities	

## Semester V

1. Design of Machine Elements	2. Power Electronics	3. Sensors & Signal Processing
4. Modeling and Simulation	5. CNC Technology	6. Principles of Turbo Machine*
7. I.C. Engine*	8. Modern Control Engineering*	9. Power Electronics Lab
10. Sensors & Signal Processing Lab	11. CNC Lab	12. Electrical Machines & Drives Lab
13. Discipline & Extracurricular Activities		

## Semester VI

1. Principles of Management	2. Micro Controller & PLC	3. Applied Hydraulics & Pneumatics
4. Design Of Mechatronics System	5. Object Oriented Programming	6. Automobile Engineering*
7. Robotics & Machine Vision System*	8. Aircraft Electronics System*	9. Micro Controller & PLC Lab
10. Object Oriented Programming Lab	11. Applied Hydraulics & Pneumatics Lab	12. Automobile Engineering Lab
13. Discipline & Extra Curricular Activities		

## Semester VII

1. Internal Combustion Engines & Diesel Power Point	2. Medical Mechatronics	3. Robotics and Machine Vision System
4. Refrigeration and Air Conditioning	5. Hydraulic Machines & Hydro Electric Power Plant	6. Operations Research*
7. Steam Turbines & Steam Power Plant*	8. Product Development & Launching*	9. Project Stage-I
10. Robotics Laboratory	11. Computer Aided Design & Computer Aided Manufacturing Lab	
12. Discipline & Extra Curricular Activity	13. Practical Training & Industrial Visit	

## Semester VIII

1. Noise, Vibration and Harshness	2. Digital Image Processing	3. Gas Turbine & Gas Power Plant
4. Total Quality Management*	5. Marketing Management*	6. Project Engineering*
7. Database Management System*	8. Mechanical Vibrations Lab	9. Industrial Engineering Lab
10. Heat Transfer Lab	11. Seminar	12. Project Stage-II
13. Discipline & Extra Curricular Activity		

**Note :** Subject with \* marking are elective subjects, any one has to be chosen in the relevant semester.



## The Strengths Builder Program

There are some key qualities required for a successful life, which are not touched upon by traditional academic programs with full focus, these areas based on research programs conducted around the world become more important in paving the way to success, than the academic prowess alone. These are the attributes like : communicative abilities (beyond the linguistic strengths), creativity & ideation, methodical planning abilities, leadership qualities, team skills, resourcefulness and adaptability. Together with our corporate partners we understand the power of these attributes for a student's successful career progression. To strengthen these attributes in our students, we run a strength builder program parallel to our curriculum. We involve our students to develop these strengths by participating in case studies, discussions, problem solving sessions, role plays, simulations, team exercises, live business projects and mentoring sessions. Different tools are used to polish each one of these special attributes.

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2

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## Profiling

The most important step before you embark on a journey to fulfil your true potential is to 'Understand Yourself'. At the profiling stage, we create an extensive account of every student's attributes, likes, dislikes, strengths, weaknesses, potential areas and learning styles. There are series of psychometric tests, assignments, presentations, role playing scenarios and other activities, which are presented in front of the student to build and accurate profile. These activities are mapped on to the academic curriculum, based on extensive research these programs have been developed by international experts.

## Personal Development

Personal Development Programs at School of Aeronautics (Neemrana) are based on the principles of Neuro Linguistic Programming, 7-Habits framework of Stephen R. Covey and Gallup's Strength building techniques. Students' attend extensive workshops and training sessions to sharpen their leadership, team-skills, creative thinking abilities, principle foundations and psychological self-awareness. These sessions are delivered by trained visiting experts, video webinars with internationally renowned Gurus and in house trainers.

## Skill Development

From project management skills, time management, business writing, technology readiness to planning and execution of ideas through mind maps, students learn various skills essential for an outstanding contribution in the business environment. With training material & support from international experts these, programs are offered to students as optional capsule programs. Students are assessed on their ability to apply the learned concepts to solve real-life problems and based on their expertise in implementing these skills in the academic / placement phase. Backed by extensive research, these programs have been developed by international experts.

## Building Connections

The world is changing so rapidly, that the things we imagined would create opportunities passed away so quickly and the opportunities we never thought would be there are so powerful now. What can keep students ready for the changing world is their ability to learn continuously and the ability to connect with people. School of Aeronautics (Neemrana) career center helps the students in preparing their profiles for jobs, writing CVs, interview tips & mock interviews, access to company profiles, placement directories & guides and then also connects them to HR personnel in various relevant companies. On extensive research these programs have been developed by international experts.



## Accommodation



## Hostel

Accommodation at School of Aeronautics (Neemrana) is spacious, beautiful and well maintained. School of Aeronautics (Neemrana) offers hostel on sharing basis, separate for both boys and girls. There is 24 hours security and facility management for the Hostels. The administration and discipline at the Hostels are taken care by a faculty member. The Boys Hostel and the girls Hostel have separate resident wardens in addition to the supervisors and support staff. There is a provision of room with air-conditioner which is optional for students.

Our hostels are equipped with world-class facilities like:

- 24-hour internet connectivity through a Wi-Fi backbone.
- On campus, laundry services.
- Music clubs, library access and an extensive tuck shop.
- Doctors visit on Campus and tie up with nearby Hospitals for medical support.
- Electricity back up, water heaters and RO water for drinking.
- Common rooms with Television sets, Table Tennis, Snooker, and Indoor Sports.
- Dining-rooms are well maintained and hygienic kitchen managed by professional agency offering cuisines from all across India along with continental choices.
- On campus cafeteria offering wide range of refreshments, snacks and beverages.





## Join the School of Aeronautics Community!

The admission process at School of Aeronautics (Neemrana) goes beyond looking for academically accomplished student. For each new session, we aspire to bring passionate and intellectual students with diverse backgrounds, looking at their accomplishments both in and outside the classroom,. The application form is designed to let you showcase yourself as to what is special about you.

Application Process: School of Aeronautics (Neemrana) application process has four main levels:

1. Submission - The first step is to submit the Application form with all the necessary details. All applicants can submit a hard copy of the application form or fill in the online application form available on the website [www.soapalam.org](http://www.soapalam.org). To submit the application on paper, you will have to either get the application form from the College office or download and print a PDF version from the college website.
2. Evaluation - The application form is then evaluated by the admission committee and students are asked to come for an interview at the college campus.
3. Interview - The interview process would help us to know more about the students' personality, interests and achievements.
4. Selection - The successful students will be intimated about their admission at the School of Aeronautics (Neemrana). They will also be sent a pre-induction kit.

### Division of Seats

Management Kota	:	15%
AIEEE	:	15%
REAP	:	70%

To apply for our programs visit : [www.soaneemrana.org](http://www.soaneemrana.org) or write to: [ccashoka@gmail.com](mailto:ccashoka@gmail.com)

**Students who have qualified and successfully cleared counselling done by REAP/AIEEE will also be admitted.**



## Admission Process (Management Seats)

1. Application for admission should be made in the prescribed form which is attached with this prospectus.
2. Application form properly filled should be sent along with Registration fee of ₹ 400/-
3. Candidates seeking admission to the course should attach the following with the application.
  - a. Photostat or certified copies of mark list of the highest qualification, and that of Date of Birth Certificate.
  - b. Four Passport size Photographs.
4. Applications which are either incomplete or unaccompanied by prescribed fees are liable for rejection.
5. Application can be submitted in person at the office along with required documents between 10 a.m. and 5 p.m. on any working day, or, can also be submitted by post.
6. Fee concession of 5% will be given to girl students in Tuition Fee only.
7. Student may be called for interview/written test, depending on the number of application received.
8. If the student qualifies in the Interview/Written Test a seat is provided to him and he will be required to pay the admission fee on that particular day only.
9. In the event of a candidate fails to deposit the fees, admission shall be given to the next candidates in the merit waiting list in order to complete the intake. Such candidate will have to deposit their fees on or before scheduled date and time for admission to the relevant course.
10. However admission to School of Aeronautics (Neemrana) for B.Tech (Aeronautical) and B.Tech (AME) will be made by a selection committee comprising of three highly qualified staff under the chairmanship of the Director of the Organization, and his decision will be final and binding.



## Admission Criteria

School of Aeronautics believes in one teaching philosophy, 'Effective teaching in modern times cannot follow traditional pathways alone.'

## World Class Infrastructure & Facilities

### LABS

#### Workshops & Labs:

Practical training is a essential part of any engineering course. The institute has a well equipped workshop to impart practical training to students in basic workshop technology. The other laboratories include electrical lab, instrument lab and Radio navigation lab. These labs are equipped with all required training aids and other equipments required for practical demonstration and training.

#### Avionics Lab / Electrical Lab:

Avionics Lab is well-equipped with the basic as well as state-of-the-art technology-Radio Communication and Navigation equipments. Other significant equipments, worth mentioning are : Radar System, Automatic Distance Finding System , VOR, Instrument Landing System, G.S. and Marker System. The highlight of the Lab is an Electro Static Device (ESD) Safe Work Station. Mock-ups of all the Instruments and Electrical equipments of Aircraft systems are available.

#### Computer Labs:

Our Computer Labs are well-designed for entry-level as well as advanced computing. The Labs are full-fledged and equipped with latest configuration PCs, printers, scanners and multimedia devices. The computers are configured in LAN as well high-speed broadband for Internet access. Packages like Visual Studio 6.0, AUTO-CAD R-2000, Visual Basic, Web-page designing software, JAVA, Turbo C/C++, VC, VC ++ are available on Windows as well as DOS platforms.

#### Electronics Lab:

Electronics Labs are well equipped with all kinds of electronic equipments and components. In the Labs, the latest models of Cathode Ray Oscilloscopes, Function Generators, Dual Power Supply Units, Television Trainers, Digital Trainer Kits, Microprocessor kits, Micro-controller kits, Measuring Instruments, Digital Multi-meters, etc., are available.

B.Tech. (Aeronautical Engineering and Mechatronics) [As per govt. norms]

Must have passed 10+2 class with at least 45% marks from a recognized board with Physics, Mathematics and Chemistry/Computer Science/Biology/Biotechnology.





## French Language

### Special Practical

#### Library:

Institute has a library fully equipped with numerous course text books, reference books, solved/ unsolved exam papers, news / bulletins, magazines, personality development books, general knowledge and also competitive exam books. Each student is provided with a library card for issue of books for a fixed duration of time. The library also receives a number of popular magazines and current aviation journals. Our institute has also collaboration with other libraries from where the student can obtain membership too read books as they want on any subject.

#### Sports Facilities:

At School of Aeronautics (Neemrana) we believe that the time spent by our student at College should be much more important than just getting a degree. The College's Physical Recreation & Sports Facilities offer an exciting range of sporting opportunities for both students and staff. The philosophy behind this is to stay healthy, raise confidence, compete and have fun with your friends. Physical Recreation & Sports facilities like Yoga, Tennis, Badminton, Gymnasium etc. are being provided to the students.

#### Co-curricular Activities

The technical associations of the various disciplines play an active role in organizing discussions, seminars, guest lectures, educational tours etc.

In addition, there are cultural associations, a photographic club and a music club, each of which arranges Programs and competitions with the help of the students' academic council. We are proud to state that our students are continuously winning prize at various inter collegiate cultural and sports festivals.



## Rules & Regulation

### GENERAL RULES & REGULATIONS

1. Great emphasis is laid on discipline and character building and students are expected to maintain a high standard of discipline. Rules and regulations of the Institute/hostel have to be followed by each student.
2. If any student violates or tries to violate rules and regulations, a severe disciplinary action will be taken against the student.
3. Regular attendance of classes is must for every student, if any student fails to attend a minimum of 90% attendance he/she will not be allowed to appear in the final exam. In addition to this 90% will be calculated month wise, and if for any particular month this percentage is below 90%, he/she will have to pay fine of ₹ 200/- per month.
4. Periodical test has to be taken by every student, if any student fails in a test, he/she may not be allowed to take up next periodical test.
5. No smoking or drinking is allowed in the Institution.
6. Student once struck up from LNVM Society Institutions on disciplinary ground, will under no circumstances be readmitted.
7. No student is allowed to take part in any political activity in the Institute.
8. The loss caused due to any damage to equipment or building or furniture of the Institution by the student, will be directly recovered either from identified student/his/her parents/guardian or else collectively from such groups/batches as responsible for such activities.
9. It is compulsory for the student to have a valid identity card while in the premises of the Institute.
10. Any change in rules and regulations at any stage during the course will be duly notified to the students and will be applicable to all students on roll.
11. For fee refund cases, in case student leaves the college, AICTE norms will be followed.
12. For obtaining Bonafide Certificate from the institute, student will have to pay ₹ 100/- towards printing and miscellaneous charges.
13. The management reserves the right to rusticate any student for misbehavior with staff or students or for lacking of any student like qualities. No refund of fees will be made in such a case.
14. All the students shall abide by rules & regulation of the institute and shall have to give an undertaking to this affect.
15. Admission is not transferable from one course to another or from one student to another student.
16. No student is allowed to carry/use any cell phone in the Institute's premises. If any one is found to do so the strict disciplinary action will be taken against the defaulter and cellphone will be confiscated, which may or may not be returned depending on the discretion of the Director of the Institute.
17. Gatepass (duplicate) will be issued on payment of ₹ 100/- by the students. All the gate passes are required to be re-validated after each fortnight.
18. The management reserves the right to remove from the rolls the name of any student for
  - a. failure to pay dues of the Institute/hostel.
  - b. failure to come upto the prescribed standard, and
  - c. unsatisfactory conduct.

### LIBRARY RULES

1. Only School of Aeronautics (Neemrana) students and teaching faculties are members of the library.
2. A student with an Library card only is entitled to draw books from the library and is personally responsible for the books so taken by him/her. Only four books can be drawn at a time and that too for a maximum period of 15 days.
3. A fine of ₹ 10/- per day will be charged from the student for the book not returned by due date.
4. The borrower shall have to replace any book which is lost or damaged or mutilated in any way.
5. Reference books will not be issued. These are available only for reference.
6. The books can be drawn from the library after the classes or in accordance with the schedule as may be prescribed from time to time.
7. Same book will not be issued again in the same month.
8. Books once issued will not be transferred from one student to another.



## Why To Join Us

- Highest Placement record for both OJT'S & Jobs.
- Only Institute in India to provide Free inhouse OJT on its own two heavy aircrafts.
- Institute has two 52 seater heavy aircrafts [Fokker Friendship (F27)] for practical trainings.
- One of the few institutes in India to have it's own Wind Tunnel for Aerodynamics Practical workshop.
- Attractive scenic campus at Neemrana, Delhi-Jaipur highway, just 110 km. from New Delhi.
- Well equipped laboratories and workshops.
- Fully experienced & highly adaptive & motivated faculty .
- Regular Seminars for students & faculty.
- Well equipped library with thousands of books & magazines, periodicals & journals and e-books.
- 100% ragging free environment.
- Separate hostels for boys and girls. (Air conditioned accommodation is also available).
- Well cooked hygienic food and comfortable environment in the Hostel.
- Separate administrative and academic Wardens.
- Separate training and placement cell for students.
- Industrial Training for students with different airlines (Indian Airlines, Air India, HAL Kanpur, HAL Lucknow etc.)
- The management has proven record of excellence in technical education.
- Special care for extra curricular activities of the students.
- Regular Excursion & Educational trips for Students.

## Fee Structure

For fee structure, please see college website :

[www.soaneemrana.org](http://www.soaneemrana.org)



# Immerse yourself in the Neemrana Experience

Where history meets opportunity

School of Aeronautics (Neemrana) is situated in NCR region, at Neemrana on Delhi Jaipur National Highway No. 8 and is just 2 Hours drive from New Delhi, very well connected by a six lane express way. Entry to the College is through the first entry to The Neemrana Fort (well known address is jahajwala college) and infront of the College are the Aravali mountains.

Neemrana is an ancient historical town in Rajasthan, India. It is the site of 14th Century Hill-Fort which was ruled by Chauhans till 1947. The erstwhile ruling family, considered to be the direct lineage of Prithvirj Chauhan, being unable to maintain the fort after abolition of privy purses sold the fort to the group, Neemrana Hotels, that has converted it into a heritage hotel. The fort Sited atop the rare, dark Hornstone Breccia rocks, commands splendid agrarian views from its ramparts, which rise to 50-65 meters. Some distance from Neemrana is another fort Kesroli in Alwar district that is one of the oldest heritage sites. Historians trace it to the Matsya Janapada of the Mahabharata times. The origins of the Fort Kesroli are traced back to over six centuries. It is reputed to have been built by the Yadavs, descendants of Lord Krishna, who converted to Islam in the mid-14th century to be called Khanzadas. In Kesroli one gets to see the oldest remains of Buddhist Vihara at Viratnagar where the Pandavas spent the last year of their exile incognito; Pandupole, with the only reclining statue of Hanuman; the samadi of the ruler saint Bhatrihari and Talavriksha with ancient water reservoirs.

Neemrana now is also home to the Japanese Zone, Industrial area developed by RIICO which is spread in 1500 Acres and the Japanese have already committed an investment of over 500 Million US Dollars. The residential complexes, Shopping Malls and commercial areas are also developing fast due to this investment in the Japanese Zone.



## Maps & Directions

### Associated Information

#### Hotels and Place of Stay

Neemrana Fort Hotels	:	<a href="http://www.neemranahotels.com">www.neemranahotels.com</a>
Aju Japanese Hotel	:	<a href="http://www.ajuguesthouse.com">www.ajuguesthouse.com</a>
Hotel Shiva Oasis	:	<a href="http://www.shivacon.com">www.shivacon.com</a>
Rajasthan Motels Behror	:	<a href="http://www.rajasthanmotels.com">www.rajasthanmotels.com</a>

Neighbouring Towns to Neemrana are well populated with all basic facilities and development.

On National Highway towards Jaipur-Behror, Kotputli

On National Highway towards New Delhi-Shahjahanpur, Bawal, Bhiwadi

Within 50Kms Radius-Alwar, Riwari, Narnaul, Mahendragarh, Kesroli etc.

