



IDEMI

प्रौद्योगिकी केंद्र, मुंबई

MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES, GOVERNMENT OF INDIA
MSME - TECHNOLOGY CENTRE, MUMBAI
INSTITUTE FOR DESIGN OF ELECTRICAL MEASURING INSTRUMENTS
ISO: 9001-2015 | NABL ISO:IEC 17025:2017



MSME - TECHNOLOGY CENTRE, MUMBAI

Diploma in Tool & Die Making



PROSPECTUS

AICTE Approved and
MSBTE Equivalent Diploma Course

Diploma in Robotics & Mechatronics



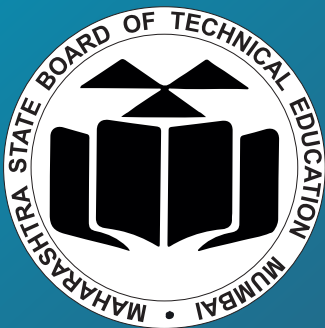
Diploma in 3D Animation & Graphics



Diploma in Robotics & Mechatronics

Diploma in Tool & Die Making

Diploma in 3D Animation & Graphics



IDEMI, Eastern Express Highway, Opp. Everard Nagar bus stop, Chunabhatti, Sion, Mumbai - 400 022, Tel.: 022 - 2405 0301 / 2 / 3 / 4
Fax: 022 - 2405 0016 ~ E-mail: training@idemi.org ~ Website: www.idemi.org

Institute for Designing of Electrical Measuring Instruments



IDEMI was established in September 1969 with joint efforts of UNIDO / UNDP, Vienna and Ministry of Industry, Govt. of India. It is a Govt. of India Society under the Ministry of Micro, Small & Medium Enterprises for Service-to-industry organizations.

IDEMI is providing services in the following areas:

1. Training for Skill Development & Capacity Building of Man Power in various subjects
2. Calibration of Electrical, Electronic, Pressure, temperature, Flow, Mass, Volume & Dimension Measuring Instruments.
3. Electrical & Environmental Testing of Domestic Appliances & Electrical/Electronic products.
4. EMI / EMC Testing on Electronic gadgets & various testing for CE Marking
5. Field Services in Calibration & Testing
6. Design & Development of Prototype Instruments.
7. Tool Design & Documentation.
8. Manufacturing of Tools, Jigs & Fixtures, Critical Components, Precision jobs.
9. Batch Production services
10. Consultancy services for Laboratory accreditation as per ISO/IEC 17025
11. Consultancy services for QMS certification as per ISO 9001.

Training for Skill Development & Capacity Building of Man Power

IDEMI Training Division has been devoted to Technical Manpower Development particularly from “Industrial sector” & “Information Technology Sector”. Skill Development Training is a continuous education & is required by every Practicing Professional and Student for improving his/her competency to meet the greater demands & challenges of Industry.

IDEMI is not only giving the class-room training but it is also supported with various Laboratories for complete hands on experience through practical & demonstrations. **IDEMI** is having State of Art Laboratories in Calibration, Industrial Automation, Embedded Technology, CAD / CAM & Animation.

In tool room **IDEMI** is also equipped with high precision Tool Room Machines like CNC Milling, CNC Lathe, CNC EDM, CNC Wirecut apart from Conventional Lathe Milling Machine.

Dimensional Metrology of **IDEMI** is equipped with precision measuring equipment & CNC CMM.

IDEMI faculty members are well qualified & having immense practical experiences, profound insights, broad perspectives and ready to part tips, tricks and techniques gained during their lifetime to the attending participants. We always ensure that every participant carry back home lot of clarity & confidence on the subject through Theory, Practical, Demonstrations, Role Play, Live Project etc. This enhances the work performance of participant & there by fulfilling our objective of Skill Development.

IDEMI's “Skill-Development Training Programmes” has built-in potential to generate Employment or a possibility to start working independently as a Self Entrepreneur.

IDEMI is also conducting the Capacity Building Training Programme for Principals, Faculty members & Senior officers with main focus on Behavior Science through several Soft Skills like Inter Personnel Skills, HR Management, Communication & Presentation skills, Leadership, Decision making, Team Building, Stress & Conflict Management etc.

IDEMI is also conducting various Sponsored Training Programmes for various states of India.



GENERAL RULES & REGULATIONS FOR TRAINEES



1. IDEMI reserves the right to reject any application without assigning any reason. Incomplete applications are liable to be rejected.
2. Medium of instruction is English only.
3. Registration fee is non-refundable, in case any candidate cancels his/her admission for any reason.
4. One application form is applicable for one course only. If the candidate wish to apply a second course s/he will have to collect another application form.
5. Admission to the course will be given only on deposition of first semester fee by DD & on submission of relevant documents Or Online Payment.
6. Registration fee will be converted as security deposit after confirmation of admission along with payment of requisite fee by the trainee and shall be refunded on successfully completion of the course/cancellation of admission after payment of requisite fee for first semester.
7. Course fee once paid will not be refunded under any circumstances.
8. Registration/course fee is non-transferable.
9. Course fee for the higher/next semester has to be paid within one week from the starting date of semester and all the candidates belonging to SC/ST category have to fill in fresh application form within one week from the starting date of each semester. Late fee will be charged as a fine from due date as applicable.
10. Insurance and other charges as specified for the course to be paid by the trainee in addition to the course fee as applicable.
11. Security deposit shall be forfeited, in case of loss of original receipt of the security deposit.
12. All the trainees will ensure discipline within the campus.
13. Trainees shall be required to wear uniform and shoes as prescribed by the institute and posses I-Card compulsory during training.
14. Mobile Phone, Pen Drive, CD/DVD or any other related items are not permitted inside IDEMI premises.
15. Regular attendance will have to be maintained by the trainee as per course schedule & 85% attendance is compulsory in all subjects individually.
16. Trainees will abide by the examination rules and regulations displayed on Notice Board of IDEMI and as amended from time to time.
17. Leave without information/permission will not be entertained.
18. Trainees going on leave or home during vacation should inform the Course Coordinator compulsorily.
19. All the internal assessments, assignments, evaluations will have to be attended/completed from time to time as per course schedule only.
20. No trainee shall organize/conduct any meeting within the campus.
21. The machines/equipments/furniture must be handled carefully. No act of damage to IDEMI property shall be carried out by the trainee. Any loss or damage to property, fine as charged to be paid by the trainee.
22. Trainees have to ensure the proper utilization of IDEMI property including water and electricity usage.
23. Smoking and chewing tobacco, possessing or drinking alcoholic beverages in any form is strictly prohibited within IDEMI premises.
24. Ragging is strictly prohibited in the premises.
25. Writing any comment/remark/name on doors, walls, toilet, notice board is strictly prohibited.
26. Study material shall be provided on extra cost as applicable.
27. Working hours are 6 hrs/day (excluding lunch) in different shifts/timing as prescribed by the institute.
28. Violations of above & any other rules, regulations, disciplines and conduct etc. are liable for disciplinary action.
29. The parents of the selected candidates are required to execute a bond of Rs. 20,000/- (Rupees twenty thousand only) stating that their ward will continue the course for full duration.

GENERAL INFORMATION

Working Hours: 6 hours per day (excluding lunch), As per Academic Calender

Attendance: It is compulsory to attain 85% attendance for appearing semester and final exam in all the training courses.

Original Certificate: Original certificates of school leaving certificate and mark sheet of 10th standard (caste certificate for reserved candidates) are to be deposited with IDEMI by the selected candidates at the time of admission, which will be returned after completion of the course only.

Institute Security Deposit: Institute security deposit is to be paid towards the caution money against the tools & instruments, etc. whichever will be issued to the trainees. This amount is refundable at the time of leaving after completion of course and on production of no dues from the concerned sections.

Uniform & Safety Shoes: Trainees shall be required to wear uniform/apron & shoes as prescribed by the institute on his/her own cost.

Fees: Total tuition fees and caution money to be paid fully at the time of admission process.

HOLIDAYS AND LEAVE

Holidays: There are maximum of 12 holidays fixed by the management during each calendar year.

Vacation: There are maximum of 15 days vacation after completion of each semester. The period of vacation will be declared at the end of each semester (there will be a variation on the duration of vacation).

DISCIPLINE AND PERFORMANCE: The trainee is bound by the rules and regulations of IDEMI as laid down by the management from time to time. The trainee is required to strictly abide by the rules of IDEMI failing which disciplinary action may be taken against them. The trainee and his/her guardian will have to give an undertaking to this effect.

Whenever it is found necessary, IDEMI will take strict disciplinary action as stipulated in the rules of the IDEMI. This may amount to a warning, suspension or termination as the case warrants. In case of unsatisfactory progress of a trainee, the management will fix a period of probation and give notice in writing to the trainee and the guardian. In case no improvement is evident within the specific period, the traineeship will be terminated.



SYLLABUS FOR WRITTEN TEST

(Test will be in English medium only)



I. MATHEMATICS:

Arithmetic: Percentage, Profit, Loss, Simple & Compound Interest, Discount, Commission, Highest Common Factor & Least Common Factor, Multiple of Polynomials, Binary Numbers, Probability, Arithmetic Progression & Geometric Progression.

Mensuration: Areas & Circumference of Different Geometries, Surface Area & Volume of Different Geometries Such As Cylinders, Cones, Cubes, Etc.

Ration and Proportion: Ratio of Real numbers, Order in Ratio, Word problems of ratios, Properties of ratios, theorem on equal ratios, proportion, k-Method.

Variation: Direct variation & inverse variation, formulae & the concept of variation

Simultaneous Linear Equations: Graphical method & algebraic method

Quadratic Equation: Quadratic Equation, solution of a quadratic equation, method of solving quadratic, factorization, perfect square method, formula method

Algebraic Expressions: Polynomials, degree of polynomials, sum, products & division of polynomials. Co efficient form of polynomials, synthetic division etc.

Trigonometry: Trigonometrical ratios, measure of angle, relationships, identities & their applications, etc.

Statistics: Numeral data & its presentation, cumulative frequency table, representation of statistical data by different methods.

Geometry: Similarity, theorem of Pythagoras, circle & geometrical Construction, Coordinate geometry.

II. SCIENCE & TECHNOLOGY

Electricity, Electric Spark & Electromagnetism: Electrical current, potential difference, current in conductors & electrolytes, coulomb, volt, ampere, ohms law, concepts of resistance, electromotive force & potential difference, heating effect of electric current, joules law, magnetic field due to electric current different cells.

Sources of Energy: Energy from Sun, energy from flowing water, nuclear energy & its uses.

Moving objects & of Motion: Types of motion, distance & displacement, fundamental quantities & system of units, uniform & non- uniform motion, scalars & vectors, first, second & third laws of motion, concepts of force, inertia, force equation, acceleration & deceleration, law of conservation of momentum, gravitation & law of gravitation, Mass & weight of an object.

Work, Power & Energy: Concept of work, power & energy, their units and measurements, types of energy – potential energy & kinetic energy, pressure in fluids, Archimedes principle.

Sound: Nature sound, production, propagation, characteristics of sound, speed of sound

Light: Conversion & diversion of light, lenses, human eye, defects of eye vision, refraction of light, law of refraction, refractive index, dispersion of light and scattering of light.

Matter: Properties & states of matter, change of state, absorption of heat, elements, compounds, mixtures, solutions & their types, laws of chemical combination, law of conservation of matter, law of constant proportion, molecular mass, mole concept, valency & chemical symbol of elements & chemical formulae of compounds.

Atom: Atomic structure, different theories, mass of Atom, atomic no. & valance, isotopes, Periodic classification of elements, etc.

Metals, Non Metals: Metal, non-metals & their physical & chemical properties, occurrence of metals & corrosion of metals.

Acid Base Theory: Acids, bases, indicators, strength, reactivity & ionization of Acids & bases, salts.

Carbon & Carbon Compounds: Carbon & its properties, carbon compounds, their properties & application, hydrocarbons, saturated & unsaturated carbon, functional groups & nomenclature of organic compounds

Chemical Reactions & Their Types: Concepts of chemical reactions, oxidation, reduction & neutralization.

III. GENERAL ENGLISH: Grammar, Vocabulary, Spell check

IV. GENERAL KNOWLEDGE: National and international current affairs and general knowledge.

V. MECHANICAL ABILITY: Logical thinking, aptitude test.

VI. Art, Drawing, Compositing & Visualization (Only for Diploma in 3D Animation & Graphics): Light & shadow, Animal Drawing, Human Figure, Design aptitude and Creative Thinking Skills.

VII. Paper Pattern: The exam paper for Diploma in 3D Animation & Graphics will be in two sections, i.e. "A" and "B". Section "A" will contain questions with multiple choice option and section "B" will be on Art, Drawing, Compositing & Visualization.



COURSE DETAILS

Course Highlight:

- o Industry-relevant curriculum.
- o Includes concept-based modules such as Animation Design & Visualization, Anatomy Study/Drawing & Painting, Perspectives, Study of Light & Shade, Concepts of 2D Digital Animation, Concepts of Storyboarding, Concept of 3D Animation Graphics & VFX. Application of Principles of Animation. Practical application of tools & software.

The course leads to job opportunities in:

- o Animation & film production studios
- o Television channel & production houses
- o Advertising and Print Media
- o E-learning/Interactive companies
- o Medical animation studios
- o Animation Colleges & Institutes
- o Digital Marketing
- o Virtual Reality & Augmented Reality
- o Graphics Designing (Internet Advertising)
- o Fashion Designing & Interior Designing
- o Development of Computer/Mobile Games
- o Architecture and Landscape
- o IT Industry
- o UI/UX Design And Web Development



Objectives

- o Develop Art drawing, creative & technical skills in 2D/3D Animation, Graphics & Web, Compositing & Editing, Film-Making with a focus on character animation & VFX. Train for a career in TV/Films/development of computer/mobile games/digital simulations/educational e-learning, motion graphics, Digital Marketing & UI/Ux Design advertising commercial, engineering & Virtual reality in decence, fashion designing industry with the 3D Animation & Graphics program

Duration

- o 3 years (Total 6 semesters)

Intake

- o 30 nos./Batch(Institute reserves the right to vary intake)

Pattern

- o Semester

Eligibility

- o Preferably 10th Standard pass But the Eligibility in based on the upcoming Notification / Guideline AICTE / MSBTE
- o Age limit: 15 to 18years (3 years relaxation for SC/ST Candidates)

Selection Process

- o Written test, Creative Aptitude Test and Personal Interview

Admission

- o 1 batch/year based on the merit list in the Common Entrance examination & interview conducted academic year
- o Reservation of seat as per Central Govt. norms.

Affiliation

- o Autonomous, Recognized by AICTE,



Brief Course Contents:

- Perspective, Light & Shadow and Colour Theory
- English Literature & Communication Skills
- Virtual Reality & Augmented Reality
- Drawing, Painting & Sketching
- Scripting with Film Language
- Storyboarding / Character Design
- Pre-production / Post Production
- Digital Design/ Concept Art
- Stop Motion
- 2D & 3D Character Development
- BG Modeling/Layout and Surfacing
- Texturing & Look Development
- Rigging & Character Set-up
- Character Animation
- Particle Dynamics
- Digital Painting / Matte Painting
- 3D Character Design & Modeling
- Lighting & Rendering
- Graphic Designing
- Concept of Webpage Designing
- Editing & Compositing
- Visual Effects/Motion Graphics
- Acting & Voicing for Animation



Software Covers:

Adobe Photoshop, Adobe Illustrator, Adobe InDesign, Adobe Soundbooth, Animate, Adobe Sound Forge, Autodesk Maya, Autodesk 3Ds Max, Pixologic Z-Brush, Adobe Premier Pro, Toon Boom Studio, Toon Boom Storyboard, Corel Draw, Final Cut Pro, Monkey Jam, Adobe After Effects.



COURSE DETAILS

Course Highlight:

- Provide a sound broad-based foundation in Mechatronics and Robotics technologies with an emphasis on developing problem-solving skills.
- Design ,specify ,plan, organize and implement a Mechatronics system
- Manage and work effectively with a team of domain specialist in the core technologies of Mechanical systems, Power systems, Control Systems, embedded systems and Automation Systems.
- Integrate and test multi-disciplinary Mechatronics projects

The course leads to job opportunities in:

- Designing and creation of innovative mechatronics products
- Designing smart products and automated system with an integrated use of electronics, mechanical and computer technology.
- In wide spectrum of industries as diverse as electronics, manufacturing, food processing, Pharmaceutical, and chemical and aviation where trained mechatronics professional are high in demand
- In companies where planning of mechatronics and robotics related projects , project management as well as technical sales and marketing.



Course Objectives:

Mechatronics & Robotics is rapidly evolving field with growing applications in all engineering branches. It is four disciplines engineering field with concurrent methodology. This course has been framed in such a way that it will fulfill all the requirements of industries for perfect Mechatronics & Robotics system design engineer.

Duration:

- 3 years (Total 6 semesters)

Intake:

- 30 nos./batch (Institute reserves the right to vary intake)

Pattern:

- Semester

Eligibility:

- Preferably 10th Standard pass But the Eligibility is based on the upcoming Notification / Guideline AICTE / MSBTE
- Age limit: 15 to 18 years (3years relaxation for SC/ST Candidates)

Selection Process:

- Aptitude Test and Personal interview

Admission:

- 1 batch / year based on the merit list in the Common Entrance Examination & interview conducted in July every year.
- Reservation of seats as per Central Govt. norms.

Affiliation

- Autonomous, Recognized by AICTE



Brief Course Contents:

- Business English and Communication Skills
- Applied Physics
- Modern Engineering Materials
- Engineering Mathematics
- Manufacturing Technology
- Engineering Drawing and CAD
- Applied Mechanics
- Theory of Machines
- Strength of Materials
- Digital Electronics
- Electrical and Electronics Measurement Systems
- Electrical Machines
- Introduction of Industrial Automation
- Instrumentation and Control Systems
- Hydraulics and Pneumatics
- Mechatronics
- Industrial Electronics
- Robotics Technology
- PLC and SCADA
- Project and Seminar
- CAD/CAM and FMS
- Industrial Organization and Management



Teaching Scheme for the course:

This course is divided into 6 semesters and each semester will be of 5-6 months duration. There will be the semester exam at the end of each semester and students must clear the exam as per the passing criterion set of the institution. Final Award of diploma is given only after completing all the semesters and fulfilling Industrial Training requirements.



COURSE DETAILS

Course Highlight:

Mechanical - Knowledge of machines, measuring instruments and tools, jigs, fixtures, press tools, moulds, die casting dies, including their designs, manufacturing, uses, repair and maintenance.

Design - Knowledge of Design techniques, tools and principles involved in production of precision technical plans, blueprints, drawings, and models. Knowledge of CAD-CAM CAE software

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications

Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

The course leads to job opportunities in:

- Product Design & Development in automobile , aeronautical, medical , electrical industry
- Tool Design & Development in various field
- Design &, development & training of mechanical software
- Product Design with help of Reverse Engineering
- Companies where manufacturing of tool & dies
- Project management as well as technical sales & marketing
- Job inspection in quality control field
- High tech production (CNC, FMS) units

Objectives

- To Design & Manufacturing intricate tools like press tools, Plastic Moulds, Jigs, Fixtures & Gauges etc. with exposure modern Die Design & Die Manufacturing interdependently.

Duration

- 3 years (Total 6 semesters)

Intake

- 30nos./Batch(Institute reserves the right to vary intake)

Ratio of Theory & Practice

- 30:70

Pattern

- Semester

Eligibility

- Preferably 10th Standard pass But the Eligibility in based on the upcoming Notification / Guideline AICTE / MSBTE
- Age limit: 15 to 18 years(3 years relaxation for SC/ST Candidates)

Selection Process

Admission

- Aptitude Test / Personal Interview
- 1 batch/year based on the merit list in the Common Entrance examination& interview conducted in July every year.
- Reservation of seats as per Central Govt. norms.

Affiliation

- Autonomous, Recognized by AICTE



Brief Course Contents:

- Communication Skills
- Entrepreneurship Development
- Industrial Management
- Applied Mathematics
- Applied Physics
- Applied Chemistry
- Engineering Drawing
- Applied Mechanics
- Strength of Materials
- Electrical/ Electronics Engineering
- Workshop Practice
- Workshop Technology
- Advance Machine Tool Technology
- Tool Room Machine Maintenance
- CNC Technology
- CNC Programming
- CAD (AutoCAD)
- CAD (Solid Works)
- CNC Machining (Lathe, Milling, WEDM & EDM)
- Engineering Metrology
- Hydraulics & Pneumatics
- Computer Applications
- Industrial Engineering
- Tool & Die Making Practice - Jigs, Fixtures, Gauges.
- Press Tools, Moulds, Die Casting Dies & SPM
- Tool Design - Jigs, Fixtures, Gauges, Press Tools, Moulds,
- Die Casting Dies, Forging Dies Cutting Tools
- Material Technology
- Heat treatment
- Tool & Die Manufacturing (Prod. Orders)
- Live Projects Tool Design / Tool Manufacturing /CAD - CAM

Software Covers:

Auto CAD, Pro-E, Master CAM





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