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NAVPRAYAS
(A GROUP OF INNOVATIVE THOUGHTS)

WELCOME TO THE CAREER COUNSELLING

PCM

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COLLEGE: NIT Trichy
YEAR: 2nd year

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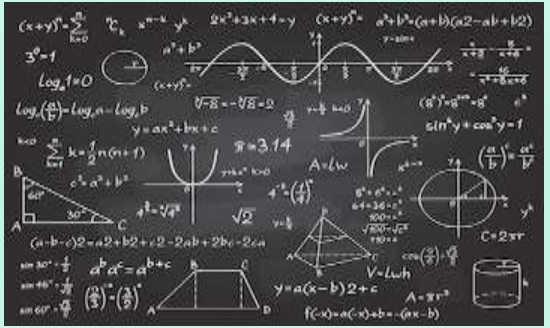
INTRODUCTION

- PCM is a popular academic choice for students who are interested in pursuing careers in engineering, architecture, defence, or pure sciences.
- It provides a strong foundation in analytical and problem-solving skills and is often chosen by students preparing for competitive exams like JEE, NDA, and CUET.



SUBJECTS TO BE EXPLORED

Mandatory

- Physics
- Chemistry
- Mathematics

Optional

- English
- Hindi
- Physical Education
- Computer Science and many more…

Note : It is necessary to appear for at least 5 papers in intermediate.

CAREER OPTIONS AFTER 12th

- B.Tech/ BE
- B.Sc
- BCA/ BCS
- B.Plan/ B.Arch

➢B.Tech

- Bachelor of Technology (B.Tech)
- It is an undergraduate professional degree that makes you job ready in 4 years.
- It is specifically in the field of engineering and technology.

➢B.Sc.

- Bachelor of Science (B.Sc) degree in PCM (Physics, Chemistry, Mathematics) (UG Programme)
- It typically takes three to four years to complete the degree.
- Not a professional degree i.e. higher studies opens up job and better research opportunities.

➢BCA/ BCS

- 3 or 4 year program designed for students interested in the field of computer applications and software development.
- Not a professional course i.e. you need to do higher studies for job or research opportunities.

➢B.Planning/ B.Architecture

- Bachelor of Planning or Architecture is an UG programme.
- B.Planning (4years) is a degree focused on urban planning, infrastructure, and sustainable development.
- B.Architecture (5years) is a professional degree that teaches building designs, construction, and architectural theory.

POPULAR ENTRANCE EXAMS

- **JEE Main** (Joint Entrance Examination Main)
- **JEE Advanced** (Joint Entrance Examination Advanced)
- **CUET** (Common University Entrance Test)
- **WBJEE** (West Bengal Joint Entrance Examination)
- **NATA** (National Aptitude Test in Architecture)
- **BITSAT** (Birla Institute of Technology and Science Admission Test)
- **VITEEE** (Vellore Institute of Technology Engineering Entrance Examination)
- **BCECE** (Bihar Combined Entrance Competitive Examination)
- **IMU CET** (Indian Maritime University Common Entrance Test)

ENGINEERING COLLEGES

IITs

- IIT MADRAS
- IIT DELHI
- IIT BOMBAY
- IIT KANPUR
- IIT KHARAGPUR
- IIT ROORKEE
- IIT GUWAHATI
- IIT HYDERABAD
- IIT BHU
- IIT DHANBAD
- IIT INDORE
- IIT GANDHINAGAR
- IIT ROPAR
- IIT JODHPUR
- IIT MANDI
- IIT PATNA
- IIT BHUBANESWAR
- IIT TIRUPATI
- IIT JAMMU
- IIT PALAKKAD

NITs

- NIT TRICHY
- NIT SURATHKAL
- NIT ROURKELA
- NIT WARANGAL
- NIT CALICUT
- VNIT NAGPUR
- NIT SILCHAR
- MNIT JAIPUR
- NIT DURGAPUR
- NIT DELHI
- NIT PATNA
- NIT JALANDHAR
- SVNIT SURAT
- MNNIT ALLAHABAD
- IIEST SHIBPUR
- NIT RAIPUR
- MANIT BHOPAL
- NIT SRINAGAR
- NIT KURUKSHETRA
- NIT AGARTALA

IIITs

- IIIT HYDERABAD
- IIIT DELHI
- IIIT BANGALORE
- IIIT ALLAHABAD
- ABV-IIITM GWALIOR
- IIITDM JABALPUR
- IIITDM KANCHEEPURAM
- IIIT GUWAHATI
- IIIT KALYANI
- IIIT DHARWAD
- IIIT BHAGALPUR

OTHER COLLEGES

- VIT VELLORE
- BITS PILANI, HYDERABAD, GOA
- ANNA UNIVERSITY
- GFTIs
- Chandigarh University
- Chandigarh Group of Colleges
- NIST, Odisha
- WBJEE Colleges (like JU, TMSL, IEM, HIT, NSEC, BPPIMT etc.)
- Bihar Engineering Colleges (like MIT, GCE, DCE etc.)

BRANCHES TO EXPLORE

1. Computer Science Engineering

- Programming Languages(Python, C++, Java).
- Data Structures and Algorithms.
- Computer Networks and Operating Systems

2. Electronics and Communication Engineering

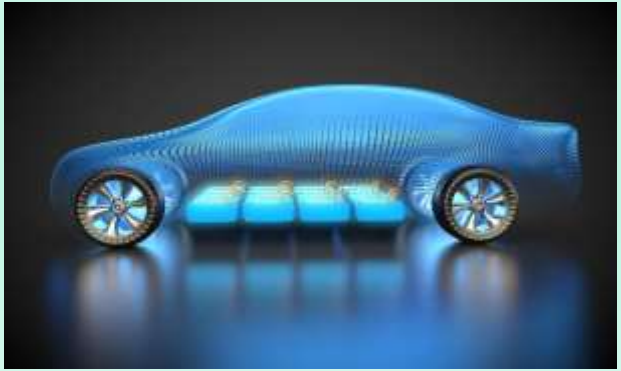
- Telecommunication: Mobile Network Development and IoT
- Consumer Electronics
- Semiconductor Industry

3. Electrical Engineering

- **Circuit Theory and Analysis** – Understanding how electrical circuits work and how to design them.
- **Power Systems** – Studying generation, transmission, and distribution of electrical power.
- **Electronics** – Learning about devices like diodes, transistors, and microcontrollers

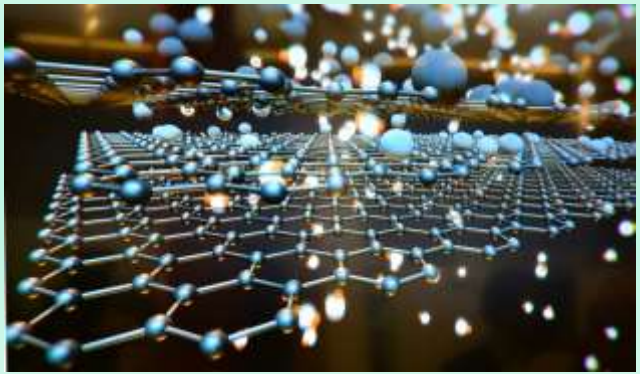
4. Mechanical Engineering

- **Thermodynamics** – Study of heat, energy, and their transformation in machines and engines.
- **Strength of Materials** – Understanding how materials respond to forces and stresses.
- **Fluid Mechanics** – Analyzing the behavior of liquids and gases in motion or at rest.



5. Chemical Engineering

- **Chemical Reaction Engineering** – Studying how chemical reactions occur and how to design reactors
- **Thermodynamics** – Understanding energy changes and equilibrium in chemical processes.
- **Transport Phenomena** – Learning about heat, mass, and fluid transfer in industrial systems.



6. Metallurgical and Materials Engineering

- **Physical Metallurgy** – Study of the structure and properties of metals and alloys.
- **Extractive Metallurgy** – Learning methods to extract metals from ores (e.g., pyrometallurgy, hydrometallurgy).
- **Materials Characterization** – Using techniques like XRD and SEM to analyze material structure..

Non-Engineering Careers

1. Architecture

- A professional field for designing and planning buildings, malls, stadiums, and urban spaces.
- **Entrance exams**: NATA, JEE Main
- **Top colleges**: SPA Delhi, CEPT Ahmedabad, IIT Roorkee, IIT Kharagpur.
- **Subjects**: Drawing, Mathematics, Physics, Design Aptitude.
- **Good demand in smart city projects, construction firms** — suitable for creative minds preferring design over coding or mechanics.

2. Pure Sciences

- Involves deep study in Physics, Chemistry, Mathematics, or Statistics with focus on research and academia.
- **Entrance exams**: CUET, IISER Aptitude Test, JEST, or institute-specific.
- **Top institutes**: IISc Bangalore, IISERs, St. Stephen's Delhi, Loyola College Chennai.
- **Subjects**: Physics, Chemistry, Mathematics, Biology, and Research Methodology.
- Great scope in research labs, ISRO, DRDO, or teaching; better for those passionate about discovery over industry jobs.

3. Merchant Navy

- Career in marine engineering, ship operations, and nautical sciences with global job opportunities.
- **Entrance exams**: IMU-CET, Sponsorship exams by shipping companies.
- **Top colleges**: IMU Campuses, Tolani Maritime Institute, Anglo Eastern Maritime Academy.
- **Subjects**: Marine Engineering, Navigation, Physics, Maths, and Maritime Laws.
- High-paying international jobs; good for adventurous students preferring travel-based careers over office jobs.

4. National Defence Services

- Serving in Indian Army, Navy, or Air Force as an officer through competitive selection.
- **Entrance exams**: NDA (after 12th), CDS (after graduation), AFCAT for Air Force.
- **Top training academies**: NDA Pune, IMA Dehradun, INA Ezhimala, AFA Hyderabad.
- **Subjects**: Maths, Physics, General Ability, and SSB interview rounds.
- Highly respected, adventurous, and secure job — best for those valuing discipline and national service over corporate life.

5. Commercial Pilot

- Involves flying commercial aircraft, with strong physics and mathematics foundation.
- **Entrance exams**: DGCA Class 1 Medical, SPL, and institute-specific pilot aptitude tests.
- **Top institutes**: Indira Gandhi Institute of Aeronautics, CAE Oxford, IGRUA Amethi.
- **Subjects**: Air Navigation, Air Regulations, Aviation Meteorology, Aircraft Technical General.
- Excellent scope in airlines like Indigo, Air India, or international carriers; perfect for those valuing sky-high careers over desk job.

THANK YOU !!

QUERIES ??