DECCAN

College of Engineering and Technology

(Established by Dar-Us-Salam Educational Trust) Approved by the A.I.C.T.E. New Delhi and Affiliated to Osmania University, Hyderabad
Dar-Us-Salam, Hyderabad - 500 001, Telangana, India

Engineering Branch & Course Selection Booklet

Darussalam Rd, Darus Salam, Aghapura, Nampally, Hyderabad, Telangana 500001

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What is Branch?

- ***Area, Domain or Type of work*** *where you will* ***work for entire life.***

= Goal, Destination, Career

Branch

= ***Path*** to achieve Goal

College

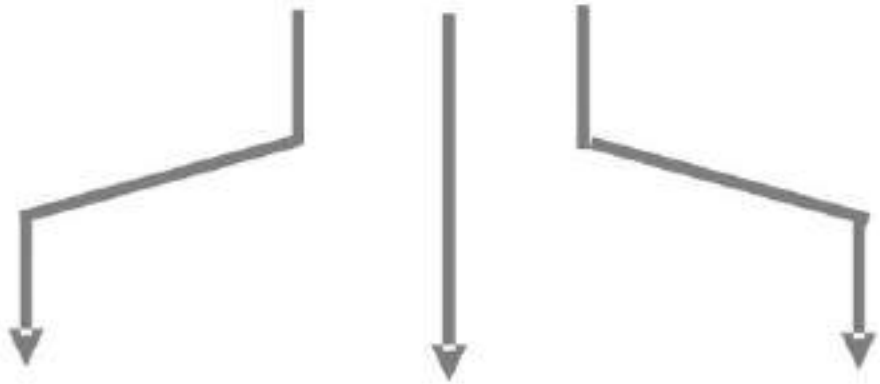
Types of Branch

Branches

40+

Colleges

130+



Basic (Core) Branches

Specialized Branches

Other Branches

Basic Branches

- Used or applicable in ***most of the industries***
- Wide spectrum of ***jobs***, ***job areas***, ***location*** & ***business scope***

Aeronautical

√ propulsion systems,
√ Flight mechanics
√ guidance and control systems,
√ aerodynamics
√ robotics

Civil

√ Transportation
√ Buildings
√ Water Resources
√ Geotech
√ Environmental

Computer

√ Software
√ Website
√ ERP
√ Mobile Apps
√ IoT

Electrical

√ Electrification
√ Power Supply
√ Electric Machines
√ Power
- Generation
- Transmission
- Distribution

EC

√ Hardware
√ Communication
√ Automation
√ Software

Mechanical

√ Machines
√ Production
√ Physical Conversion

IT

√ installation
√ development
√ implementation of computer systems
√ and applications

Civil Engineering

- *Civil engineering is the oldest branch in the history of human kind. It is related to civilization*
- *It deals with the planning, design, construction of buildings, highways, bridges, dams, airports, etc.*
- *Civil engineer gets job in the public sector from municipal corporation to central governments, and in the private sector from individual builders to international companies.*
- *Specialization can be done in many areas like Structural, Construction, Water Resources, Architectural, Environmental, Geotech, Transportation, etc.*
- ***Who should select Civil Engineering?***
  - Students who are rough & tough by nature, can work in any season and ready for physical work on site.
  - If a student is looking for government job or planning to start construction business.
  - Good command on mathematics and drawing are expected

Electrical & Electronic Engineering

- *Electrical engineering surrounds us everywhere in modern society.*
- *The electrical engineer supplies us with the ability to harness electricity which has transformed our lives. It gives us light, heat, entertainment, communication systems and comfort.*
- *Electrical engineers create and design products and information systems using scientific principles combined with natural curiosity, problem-solving and innovation.*
- *It covers a wide range of careers including Power Generation and Transmission, Control Systems, Communications, Robotics, Electronics and Nanotechnology, just to name a few.*
- *Electrical engineers work on anything from small pocket devices to large aircraft electrical systems.*
- ***Who Should Select Electrical Engineering?***
  - If you are interested in electrical systems, electronics devices and related technologies.
  - If you are inspired and motivated by technology and by the physical sciences or if you have a curious and analytical mind that enjoys the study and application of science, technology and mathematics.
  - If you are willing to embark in the serious study and practice of those subjects.

Mechanical Engineering

- *Mechanical engineering is one of the largest, broadest and oldest engineering discipline, that's why it is also known as Mother of all engineering disciplines.*
- *Mechanical engineers design and manufacture an enormous range of products from washing machines, copying machine to complex items like turbines, racing cars, planes and even faster rockets and yes, they even create robots. In a word, mechanical engineers creates - almost anything.*
- *Almost every industry you can think, depends on mechanical engineering to thrive. That's why there is such a huge global demand for mechanical engineers.*
- ***Who should select Mechanical Engineering?***
  - If you enjoy creating practical solutions to problems and like turning your ideas into reality,
  - The student who is inventive, good interest in basic math and science, can work according to environment i.e. team work, multitasks at a time, love to work with man and machines, etc.
  - Those who have family business or planning to start should give preference to mechanical engineering.

Electronics & Communication Engineering

- *ECE broadly deals with systems related to acquiring, communicating, manipulating and analyzing information.*
- *ECE covers wide range of systems from sensor to satellites, calculators to computers, robots to radars,mobile phones to medical electronics, automation to electronics in automobiles, etc.*
- *ECE has played a major role in technology revolution that we see today and has highly influenced all domains of engineering and our day-to-day life.*
- *Study in ECE covers both hardware (system/circuit) and software (programming) skills hence varieties of job profiles are available that covers office job as well as field job.*
- *In addition to core ECE, job opportunities are also available in fields related to IT, ICT, Instrumentation, Bio-medical, etc.*
- ***Who should select Electronics & Communication Engineering?***
  - Students who are interested to work with latest technology and MNC kind of work environment.
  - Students who do not mind migrating to metro cities for higher salary and fast career growth.
  - Students who are interested to go abroad for higher studies or job.

Compute Science and Engineering

Computer Science is the study of the theory, design, implementation, and performance of computer softwareand computer systems, including the study of computer-based devices

► Skills Gained:

- Deep knowledge of algorithms and data structures, and coding skills in languages like C, Java Python and open source technologies.
- Analytical approach to create the code for automatic complex process and solve problems.
- Design, implement, and evaluate computer-based systems, services and applications employing the methods of software engineering as an instrument to ensure quality.

► Job Opportunities:

- Software Developer
- Computer Software Engineer
- Software Analyst
- programmer
- Database Administrator
- Systems Architect

Information Technology

Information Technology is the study of processing, transmitting, administeringand storing of information and databases. Information Technology build communication networks, safeguard data, information and help to troubleshoot problems with computers or mobile devices

►Skills Gained:

- Complete projects using relevant information technologies.
- Develop/maintain/test business support and IT systems.
- Project management skills including documentation and presentations for completion of project with varying complexities/durations.
- Identify priorities, manage multiple projects and meet deadlines.
- Designing and building systems that will meet the needs of consumers today and in the future.

►Job Opportunities:

- IT Consultant
- Cloud Architect
- Mobile Specialist
- Web Developer
- Vendor Manager
- System Administrator

Computer Science and Information Technology

Computer Science and Information Technology provides a *realistic balance build the* between and how to *theoretical understanding of computation secure databases and systems*

► Skills Gained:

- Deep knowledge of algorithms and data structures, and coding skills in languages like C, Java Python and open source technologies.
- Analytical approach to create the code for automatic complex process and solve problems.
- Design, implement, and evaluate computer-based systems, services and applications employing the methods of software engineering as an instrument to ensure quality.
- Designed and build systems ranging from a small business needing a new technology tool, to managing the many and varied IT resources in a big business.

► Job Opportunities:

- Computer Systems Analyst
- Security Architect
- Web Developer
- Cloud Architect
- Information Technology Consultant
- Mobile Application Developer

Aeronautical Engineering

- Aeronautical engineering deals with science involved in building aircrafts and spacecrafts.
- It is a specialization of Mechanical Engineering which deals only with flying vehicles
- This branch deals with thermodynamic, fluid dynamics, propulsion, control engineering and material engineering of working with flying vehicles.
- ***Who should select Computer Engineering?***
  - Strong sense of responsibility and Ability to work speedily with accuracy - since aircrafts have to be serviced in a short time
  - Ability to work as members of a team
  - Students who are interested to work in Airlines, Air Force, Corporate Research Companies, Defence Ministry, Helicopter Companies, Aviation Companies, NASA and many others.

Branches in Emerging Areas

- Design for *specific type of work*
- More *scope changing industry demands*
- Emerging markets are *increasingly recognized* as being *incubators of innovation*

Computer Science and Engineering (Artificial Intelligence & Machine Learning)

Artificial Intelligence and Data Science are two complementary areas of *Intelligent Systems*, with data science focusing on *statistical techniques*and *artificial intelligence*on algorithmic techniques

► Skills Gained:

- Create Expert Systems – The systems which exhibit intelligent behaviour, learn, demonstrate, explain, and advice its users.
- Implement Human Intelligence in Machines – Creating systems that understand, thin learn, and behave like humans Knowledge of computer science concepts in automation and specialist skills in artificial intelligence.
- Data science provides meaningful information based on large amounts of complex data or big data.
- Extract insights from data and report the results in data-analytic contexts.

► Job Opportunities:

- Business Analyst
- Data Analyst
- Intelligence Analyst
- Data Manager
- Information Security Analyst
- Risk Analyst

Computer Science and Engineering (Data Science)

Data science is a method for transforming business datainto assets that help organizations improve revenue, reduce costs, seize business opportunities, improve customer experience, and more.

► Skills Gained:

- Help organizations to respond faster
- Business analytics can assist entrepreneurs and company executives in making timely decisions based on market trends.
- Enable more accurate diagnosis through better analysis of images.

► Job Opportunities:

- Data Scientist
- Data Engineer
- Data Architect
- Business Analytics Specialist
- Data and AI Consultant
- Data Visualization Developer

Computer Science and Engineering (Cyber Security)

Cyber Security combines work in *computer science* and *mathematics with a security-driven*focus, essential to find creative, effective solutions to issues of *security and information assurance* as internet has brought the threat of *cyber terrorism*, attacks on *critical installations* and the *misuse of social media*

► Skills Gained:

- Build skills related to cyber threat intelligence, digital forensics and risk management technology environment.
- In-depth knowledge of penetration testing, cyber forensics, malware reverse engineer and software vulnerability.
- The socio-ethical and legal aspects of cyber Security.
- Analyseand Identify new and existing cyber-attacks and determine methods to mitigat them.

► Job Opportunities:

- Security Programmer/Analyst
- Penetration and Vulnerability Tester
- Forensic Investigator
- Security Consultant
- Malware Analyzer
- Information Security Manager

Computer Science and Engineering (Internet of Things)

Internet of Things, or "IoT" for short, is about extending the *power of the internet computers and smartphones things,* beyond to a whole range of other *processes, and environments*

► Skills Gained:

- Understand internet of Things and its hardware and software components
- Interface I/O devices, sensors & communication modules
- Remotely monitor data and control devices.

► Job Opportunities:

- IoT software developer
- IoT product manager
- IoT solution Architect
- Cloud Architect
- IoT research developer
- FP&A IoT service manager

Computer Science and Engineering (Block Chain)

Blockchain is a decentralized, distributed, and oftentimes public, digital ledger consisting of *records* called *blocks* that is used to *record transactions* across many computers, so that any involved block *cannot be altered* retroactively, without the alteration of all subsequent blocks

► Skills Gained:

- Develop block chain based solutions and write smart contract using Hyperledger Fabric and Ethereum frameworks.
- Build and deploy block chain application for on premise and cloud based architecture
- Integrate ideas from various domains and implement them using block chain technology in different perspectives.

► Job Opportunities:

- Blockchain Project Managers
- Blockchain Developers
- Blockchain Quality Engineer
- Blockchain Legal Consultant
- Blockchain Web Designer
- Blockchain Engineer

Computer Science and Engineering (Robotics)

Robotics has to do with the *creation and building of robots*, as well as computer programming. It is interdisciplinary, using mechanical, electrical and othe kinds of engineering. Some robots look *like humans*, but most just look *like machines*.

► Skills Gained:

- Perform kinematic and dynamic analyses with simulation.
- Design control laws for a robot.
- Integrate mechanical and electrical hardware for a real prototype of robotic device.
- Select a robotic system for given application.

► Job Opportunities:

- Mechanical Engineers
- Aerospace Engineering and Operations Technicians
- Electro-mechanical Technicians
- Computer Programmers
- Computer and Information Research Scientists
- Robot Troubleshooter

Computer Science and Engineering (Quantum Computing)

Quantum computing is an area of *computing*focused on developing technology based on the principles of *quantum* theory, which explains the behavior of energy and material on the atomic and subatomic levels

► Skills Gained:

- Explain the working of a Quantum Computing program, its architecture and program model
- Develop quantum logic gate circuits
- Develop quantum algorithm
- Program quantum algorithm on major toolkits.

► Job Opportunities:

- Quantum Physicist R&D Engineer
- Security Architect
- Quantum Solution Scientist
- Quantum Computer Architects
- Quantum Algorithms Researchers
- Quantum Software Developers

Computer Science and Engineering (3D Printing and Design)

3D printing is a way of *creating three dimensional* (3D) solid objects. 3D printing is done by *building*up the object layer by layer. Usually, 3D printers *use plastic*, because it is easier to use and cheaper

► Skills Gained:

- Develop CAD models for 3D printing.
- Import and Export CAD data and generate .stlfile.
- Select a specific material for the given application.
- Select a 3D printing process for an application.
- Produce a product using 3D Printing or Additive Manufacturing (AM).

► Job Opportunities:

- 3D Printed Electronics
- 3D computer-aided designer
- Mechanical Engineer
- Service Technician
- Applications Engineer
- 3D Printing Specialist

Computer Science and Engineering (Virtual Reality)

Virtual reality is an *artificial environment* that is created with *presented* to the user in such a way that the *software and user suspends belief* and accepts it as a real environment.

- Skills Gained:
  - Understand geometric modelling and Virtual environment.
  - Study about Virtual Hardware and Software
  - Develop Virtual Reality applications.
- Job Opportunities:
  - Virtual Reality Designer
  - Computer Programmers
  - Web Developer
  - Cloud Architect
  - Information Technology Consultant
  - Mobile Application Developer

Other Branches

- ►Fancy or attractive names
- ►Available in few colleges
- ►If you have family business related to this branch then only i is advisable to choose it
- ►If you have enough information about the branch and ready to relocate anywhere in the country then only choose it.

Automobile Engineering

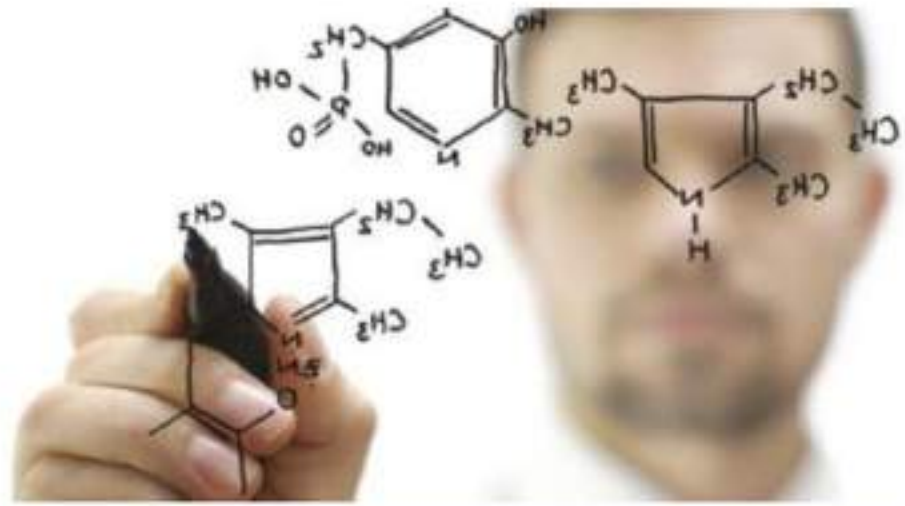
Mechanical Engineer ✓ 

Automobile Engineer ✗ 

Demand is very limited.

Chemical Engineering

- ***Tough competition*** from B.Sc. (Chemistry)
- Job location in metro cities
- Should be very careful in ***work environment***



Few More Branches

- Instrumentation and Control (IC)
  - Works for industries with automated process, such as bio-medical or manufacturing
- Mechatronics
  - Difficult branch compared to other branches
  - Combination of Mechanics & Electronics
- Production, Industrial
  - Areas of Mechanical Engineering
- Bio-Technology
  - Better to do Chemical Engineering and the Ph.D
- Environmental
  - Part of Civil Engineering, better to go for Civil Engineering

Branch Selection Matrix

Tick your preferences & consider the branch with higher ticks

Branch / Parameter	Aero	Mech.	CSE Allied Courses	EEE	ECE	Civil
Job Type	Field Job (60%) Office Job (40%)	Field Job (80%) Office Job (20%)	Office Job	Field Job (70%) Office Job (30%)	Field Job (40%) Office Job (60%)	Field Job
Nature of Job	Hard (Physical Work)	Hard (Physical Work)	Soft (No Physical Work)	Medium to Hard	Soft to Medium	Hard (Physical Work)
Government Jobs	Medium Scope	Low Scope	Very Low Scope	Huge Scope	Low Scope	Huge Scope
Private Sector Jobs	Huge	Huge	Highest	Medium	High	Limited
Campus Placement	High	High	Highest	Low to Medium	Huge	Low
Salary Growth	Medium	Medium	Very Fast	Medium	Fast	Medium
Business with Low Capital	Moderate Scope	Moderate Scope	Huge Scope	Moderate Scope	Moderate Scope	Huge Scope
Job Locations	Local to Global	Local to Global	Local to Global	Local to Metro	Metro to Global	Local to Metro

How to select college ?

Branch

V/S

College

If you ***like a college***, then pursue ***any branch available*** in that college

If your ***focus is on branch***, then pursue in ***any college*** where it is available

Most Important Parameters to choose college

College profile 

Affordability ₹

College Selection Criteria

1. Affiliation & AICTE Approved Campuses

- **Academic Trustworthiness:** Osmania University affiliation and AICTE approval signify that the college maintains recognized academic standards and quality.
- **Relevance and Employability:** These affiliations ensure that the curriculum is industry-relevant, increasing students' employability upon graduation.
- **National Recognition:** Degrees from such colleges are nationally recognized and respected by employers and other institutions.
- **Financial Support:** Students may be eligible for government scholarships and financial aid when attending approved colleges.
- **Networking and Career Opportunities:** Approved colleges often offer strong alumni networks and connections to industry professionals, benefiting students in their career development.

2. Faculty

- Faculties are the soul, heart & brain of the college
  - Number of Faculties w.r.t. Intake (Faculty – Student Ratio)
  - Stability of Faculties
  - **Experience** of faculties in **field** and **academics**
  - Industrial Exposure & Consultancy

3. Campus Environment

- Disciplined and Academic
- Student Monitoring System
- Daily Reporting to Parents

4. Infrastructure

- Building is not main infrastructure of the college,
  - Equipment in Laboratories
  - Machine Tools in Workshop
  - Books & Resources in Library
  - Class Rooms
  - Student Store & Cafeteria
- *Easy access to resources is real infrastructure !!!*

5. Result

- University Results is direct reflection of
  - Faculty Quality
  - Teaching Standard
  - Academic Environment
- Compare result with reference based on how many joined and completed their degree with in stipulated period

7. Placement

Placement is the result of previously listed parameters.

Always remember,
Placement is a side product of Quality Education.

7. Placement

- ***Now a day, Companies arrange common placement***
- They choose any one college as campus drive venue
- Students from good colleges are invited for the drive
- Students of good colleges get equal opportunities
- Most important thing is that ***Placement is branch specific.***
  - Higher Placement: Computer, EC, Mechanical
  - Lower Placement: Civil, Electrical

8. Intake

- Quality of Education degrades in overcrowded campus
- Quality and Quantity never goes together, specially in education
- Intake has direct effect on campus environment, teaching, result & placement

9. College Timing

- College timing should be optimized not stretched
- It should give sufficient time for
  - career development
  - other activity of interest

10. Affordability

Tution Fee Fixed for Academic Year 2016-17

Course	Tution Fee Amount	University Fee
B.E.	60,000/-	13,000/-(for 4 years)
M.E / M.Tech.	57,000/-	12,000/-(for 2 years)
MCA	27,000/-	10,500/-(for 3 years)

The above mentioned details are for information purpose only.

Deccan College of Engineering and Technology (DCET) is proud to offer one of the most affordable educational options when compared to other colleges. We believe in making quality education accessible to all, and our commitment to affordability ensures that students can pursue their dreams without the burden of exorbitant costs

How to collect information?

Information Type	From
Faculties, Fee, Placement, Transportation, College Timing	college website
Results of University Exam	University and college website
Infrastructure, Campus environment, Quality of faculties & teaching, etc.	Current Students of the College

To Do for College Selection

Sort list 3 to 4 colleges that match your criteria

Personally visit those colleges

Meet professors, students. ***Observe*** environment

Currently studying students are real testimony

Respect what you get

Don’t regret for others

Information is your best friend

Ignorance is your worst enemy

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Thank You !

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