ENGINEERING EDUCATION IN INDIA
An Emerging Economy

Engineering is a stream of education that always attracts students in India, due to the availibility of best quality education offered by top engineering colleges here, not only students from this country, but many foreign students are also attracted to take up education in these colleges.

Brief history of engineering education:-

Emergence of centers for Engineering Education came from the British rule of India. The first engineering college was established in the Uttar Pradesh in 1847 for the training of Civil Engineers at Roorkee, Thomason College (which later become IIT Roorkee).

The establishment of an Engineering college at Roorkee was suggested by Honorable James Thomason, Lieutenant-Governor of the North-West Provinces, about 1846, by Colonel Cautley of the Royal Artillery, who had been Superintendent General of Canals since 1836 and was busily engaged in the scheme, first contemplated by Colonel Colvin of the Bengal Engineers, for the employment of the waters of the Ganges for irrigation. While the immediate requirements of the Ganges Canal in engineer officers and subordinates were chiefly responsible for the foundation of the Thomason College, it is probable that broader issues also influenced the minds of Mr. Thomason and his advisers and that an important point was the necessity for some systematic training for Civil Engineers in India, or at least in Northern India. The Western Jumna Canals were commenced in 1817 and the Eastern Jumna Canal in 1822. In Dehra Dun, Rohilkhand and near Delhi, works for drainage and irrigation were maintained requiring skillful superintendence. The roads from Jubbulpur to Mirzapur, the grand trunk roads from Calcutta to Delhi and from Agra to Bombay and the Land Revenue Settlement Survey had been completed. It was apparent that there existed a large demand for skill in every branch of Civil Engineering. To meet this demand, there were officers of the Army, European noncommissioned officers, soldiers and Indians. To make these men efficient agents, the well-educated Europeans, lately arrived in the country, required instruction in Indian languages and in the peculiarities of materials and construction in India, The European soldiers required scientific instruction and the Indians, from their local experience and ability to bear exposure to the climate were likely to prove efficient instruments if they were well taught and inspired with a proper sense of responsibility.

The establishment formed at Roorkee, near the Solani Aqueduct on the Ganges Canal has facilities for instructing Civil Engineers. There are large workshops and most important structures in course of formation. There are also a library and a model room. Thus roorkee became first engineering University and later in 2001, it named as IIT.

Present Scenario: Making Engineers Employable

Engineering not only gives technical skills, but it also gives Attitude and Aptitude towards problem solving. We have now 23 IIT centres, more than 30 NIT centres, IIIT centres and a few IIIT centres are expected in 2017 also many other universities such as Delhi Technological University, Visvesvaraya Technological University, University of Mumbai, Anna University, Hindustan University, Rajiv Gandhi Institute of Petroleum Technology, Nirma University, The Institution of Engineering and Polytechnic Institute are producing many engineers every year. After the concern around the employability of many engineers, institutions have worked closely with the industry to improve their education system and making curriculum compatible with the industry expectation for example:

Amity University and Tata Technologies came together:

Amity University is India's leading not-for-profit Private university with strong focus on research and innovation. It has been ranked amongst top universities globally by QS.

Tata Technologies enables ambitious manufacturing companies in automotive, aerospace and industrial heavy machinery spheres to design and build better products.

Amity and Tata have now partnered to establish and industry-led technology institute with the aim to create a world-class institution for education, training and research which is led by the industry, for the industry. This type of mergers provides students:

1. Industry oriented, innovation-led curriculum designed by company.

2. Collaborative learning using innovative technology solutions from company experts.

3. Highly advanced factory stimulated environment equipped state of art machines and high end industries software.

4. Gaining real world, unique experience at top global OEMs.

In the next few years, the role of Engineering Colleges is going to be critical in producing a talent pool which is worth employing in industry. In addition, these institutions will play a huge role in meeting the requirements and goals of government of India's Skill India Mission.

SRI RAMAKRISHNA
ENGINEERING COLLEGE

Autonomous Institution, Accredited by NAAC with 'A' Grade
ISO 9001-2008 Certified, All Eligible Programmes accredited by NBA
Permanently affiliated to Anna University, Chennai and Approved by AICTE
Vattamalaipalayam, NGGO Colony Post, **COIMBATORE 641022**
Web: www.srec.ac.in, Email: office@srec.ac.in, Ph:0422-2460088

Programmes Offered

B.E / B.Tech

- Mech
- ECE
- CSE
- Civil
- EEE
- IT
- Aero
- EIE
- Biomedical

M.E / M.Tech

Manufacturing Engg
Thermal Engg
Power Electronics & Drives
VLSI Design
Computer Science & Engg
Control & Instrumentation
Embedded Systems
Nanoscience & Technology

MBA

Industry Interaction

- MoUs: Cameron Manufacturing India Pvt. Ltd, Tamil Nadu Energy Solutions Pvt. Ltd, Pricol Technologies, Roots Industries India Ltd, UTL Technologies, COINDIA, Texas Instruments, AVIAN Aerospace Ltd, Tech Mahindra, SIEMENS, L&T Valves Ltd, Pricol Ltd, FICE-Intel India Pvt.Ltd, National Instruments, and CoreEL Technologies
- Industry internships for students in major corporates
- Extensive Consultancy & Research Funding
- Industry Centres in Campus - (Pricol - SREC Innovation Centre)
- One Credit Courses offered by Industries

Indicative List of Our Recruiters

Medical Benefits for all our students, alumni and their families at Sri Ramakrishna Hospital, Coimbatore

Distinctions

- ISTE-Bharathiya Vidhya Bhavan National Award for Engineering College with Best Overall Performance
- INFY Makers Award 2016—Awarded for healthcare category, National level contest by Infosys—Cash award of INR 5 lakhs
- IEEE Woman in Engineering-Best Student Branch Affinity Group Global Award - 2016
- IIT-HTIC Wearable Club in the campus
- Centre for Innovation to promote Interdisciplinary Research & Product Development

Research Activities

- Research funding from AICTE, DRDO, CSIR, DST, UGC and other agencies

- Annual conferences funded by CSIR, AICTE, DRDO, IEEE, ISRO and other agencies

ENGINEERING COLLEGES SURVEY 2017

"Civil Services Chronicle" is presenting the most comprehensive "All India Engineering Colleges Survey -2017". This survey is of great importance for the aspirants who seek complete information and do thorough research before taking admission in Engineering Colleges. To measure the progress of our participants, we have relied on distinctly designed parameters. The survey findings are completely based on the data submitted by the respective colleges and data obtained from various sources on perceptual view. However, students are required to personally visit the institute & seek information regarding the institutes before taking admission. This is the 6th All India Engineering Colleges Survey being published by Civil Services Chronicle.

Methodology:-

The survey was conducted by Chronicle Research Team in three phases in 16 states covering 32 cities: Delhi, Dhanbad, Pune, Mumbai, Hyderabad, Bhilai, Noida, Gurgaon, Tumkur, Mohali, Coimbatore, Chennai, Gandipet, Raipur, Manesar, Ahmedabad, Bengaluru, Erode, Salem, Guntur, Vijayawada, Bhalki, Mangalore, Patiala, Moradabad, Meerut, Vadodara, Ambala, Bhubaneshwar, Udaipur, Lucknow & Nellore.
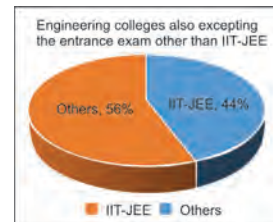
Factual Information

Factual Information was collected in the month of March and April 2017 through designed questionnaire by the Chronicle Research Team which was sent to 685 Engineering Colleges present all over India. A dedicated web link was provided on the website www. chronicleindia.in so that the questionnaire can also be downloaded by the Engineering Colleges from the provided interface. Online advertisements were also published for the Engineering Colleges to participate in the survey. Responses were sought by several reminders, phone calls and emails. Within the stipulated time, 45 colleges responded with their information, out of which 39 were used for ratings as 6 colleges either did not meet the eligibility criteria set

by the Research Team viz institutes which are fully functional for more than 3 years or lack of complete information & the supporting documents were not send by the colleges. However, some of the prominent institutes like the IITs and NITs did not participate in our survey inspite of several reminders. They insisted us to take data from their websites but the data was insufficient for complete research, so they were not included in the survey.

Validation of Data through physical survey

The Research Team of Chronicle visited various participating institutes. The team took a perceptual view from the directors, faculty members, current students, academicians, aspiring students and recruiters. The data submitted by the institutes was validated thoroughly by the research team. Different parameters were critically analyzed and perceptual rating was given to the participating institutes by the research team on the findings of physical survey.

Calculation of score & final rating

Finally, in the third phase, an exhaustive scrutiny of gathered information was conducted with the help of rationalized research tools to arrive at the parameter as well as overall rankings. While scrutinizing the data, important aspects like quality of students, curriculum, intellectual capital of faculty, infrastructure (library, recreational rooms, canteens, entertainment, hostels, faculty, accommodation and wellness), placement record and industry interaction were taken into consideration. Consequently, and logically too, post this exercise, the marks were then calculated using the weightage decided by the specialist panel for all parameters and sub-parameters. As per the score allotted to each institute, the colleges were categorized by giving different ratings - A+++, A++, A+, A and B++. The placement data was analyzed critically. Also, the average package offered by different streams of companies is represented graphically.
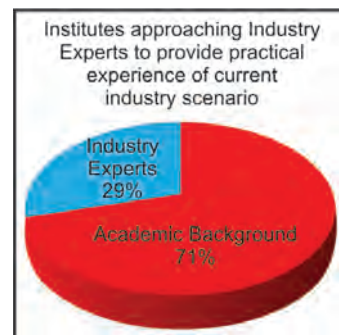
A+++

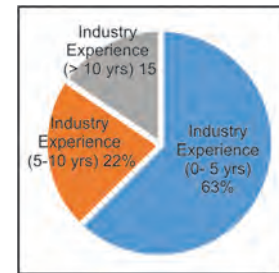| Institute	State
BIT Sindri, Dhanbad	Jharkhand
College of Engineering, Pune	Maharashtra
National Institute of Technology, Delhi	New Delhi
National Institute of Technology, Rourkela	Odisha

Engineering colleges also excepting the entrance exam other than IIT-JEE

Others, 56% | IIT-JEE, 44%

IIT-JEE ■ Others

A++

Institute	State
Chandigarh Engineering College, Mohali	Punjab
CMR Institute of Technology,Hyderabad	Telangana
CMR Technical Campus, Hyderabad	Telangana
Institute of Technology, Nirma University, Ahmedabad	Gujarat
Nandha Engineering College,Erode	Tamil Nadu
S.A.Engineering College, Cheenai	Tamil Nadu
Shri Shankaracharya Technical Campus, Bhilai	Chhatisgarh
Siddaganga Institute of Technology, Tumkur	Karnataka
Sri Ramakrishna Engineering College,Coimbatore	Tamil Nadu

Institutes approaching Industry Experts to provide practical experience of current industry scenario

Industry Experts 29%

Academic Background 71%

CHRONICLE ENGG. COLLEGES' SURVEY 2017

A+

Institute	State
Amity School of Engineering & Technology (ASET), Manesar	Haryana
Chaitanya Bharathi Institute of Technology, Hyderabad	Telangana
College of Engineering, Guindy	Tamil Nadu
Gandhi Institute of Technical Advancement (GITA), Bhubaneswar	Odisha
Ganeshi Lal Bajaj Institute of Technology & Management, Gr. Noida	Delhi NCR
MLR Institute of Technology, Hyderabad	Telangana
Rajagiri School of Engineering & Technology,Ernakulam	Kerala
The Oxford College of Engineering, Bengaluru	Karnataka

Faculty Background of Industry Experience

A

| Institute	State
Asia Pacific Institute of Information Technology SD India, Panipat	Haryana
Bheemanna Khandre Institute of Technology, Bhalki	Karnataka
Chitkara University Institute of Engineering & Technology, Patiala	Punjab
CMR College of Engineering & Technology, Hyderabad	Telangana
CMR Engineering College,Hyderabad	Telangana
Francis Xavier Engineering College, Tirunelveli	Tamil Nadu
Hindustan College of Science & Technology, Mathura	Uttar Pradesh
K L University, Guntur	Andhra Pradesh
Srinivas Institute of Technology, Mangaluru	Karnataka
Velagapudi Ramakrishna Siddhartha Engineering College, Krishna	Andhra Pradesh
Veltech High Tech DR. Rangarajan DR.Sakunthala Engineering College, Chennai	Tamil Nadu

B++

Institute	State
Aalim Muhammed Salegh College of Engineering, Chennai	Tamil Nadu
Aditya College of Engineering, Madanapalle	Andhra Pradesh
Annamacharya Institute of Technology & Sciences, Kadapa	Andhra Pradesh
Geetanjali Institute of Technical Studies, Udaipur	Rajasthan
Maharishi Markandeshwar Engineering College, Ambala	Haryana
N.B.K.R. Institute of Science & Technology, Nellore	Andhra Pradesh
RajaRajeswari College of Engineering, Bengaluru	Karnataka

Faculty ratio in engineering colleges
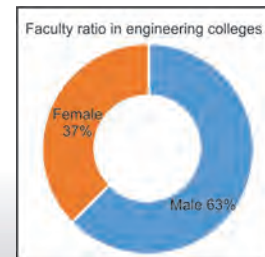
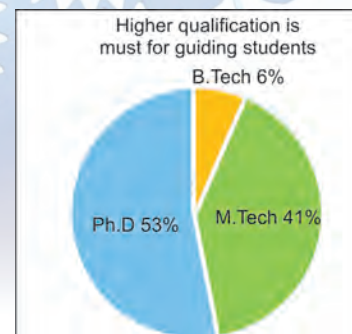### 10 TOP Colleges in terms of Admission & Selection Process

- BIT Sindri, Dhanbad
- CMR Institute of Technology,Hyderabad
- College of Engineering, Pune
- Institute of Technology, Nirma University, Ahmedabad
- National Institute of Technology, Delhi
- National Institute of Technology, Rourkela
- Shri Shankaracharya Technical Campus, Bhilai
- Siddaganga Institute of Technology, Tumkur
- Sri Ramakrishna Engineering College,Coimbatore
- The Oxford College of Engineering, Bengaluru

Admission Scenario 2016-17
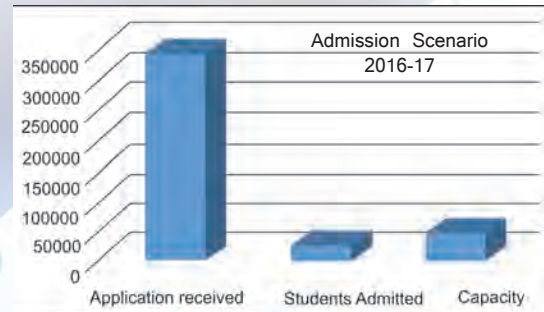
10 TOP Colleges in terms of Intellectual Capital

- Amity School of Engineering & Technology (ASET), Manesar
- BIT Sindri, Dhanbad
- Chandigarh Engineering College, Mohali
- College of Engineering, Pune
- Gandhi Institute of Technical Advancement (GITA), Bhubaneswar
- K L University, Guntur
- National Institute of Technology, Delhi
- National Institute of Technology, Rourkela
- Rajagiri School of Engineering & Technology,Ernakulam
- S.A.Engineering College, Cheenai


Higher qualification is must for guiding students

CHRONICLE ENGG. COLLEGES' SURVEY 2017

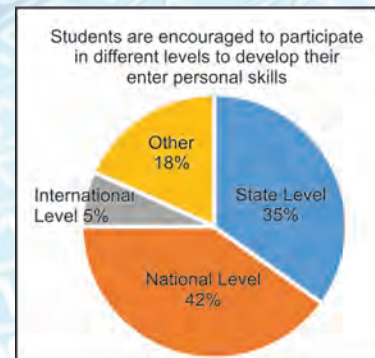## Colleges in terms of Placement

- BIT Sindri, Dhanbad
- Chandigarh Engineering College, Mohali
- College of Engineering, Pune
- Ganeshi Lal Bajaj Institute of Technology & Management, Gr. Noida
- Nandha Engineering College,Erode
- National Institute of Technology, Delhi
- National Institute of Technology, Rourkela
- S.A.Engineering College, Cheenai
- Siddaganga Institute of Technology, Tumkur
- Sri Ramakrishna Engineering College,Coimbatore
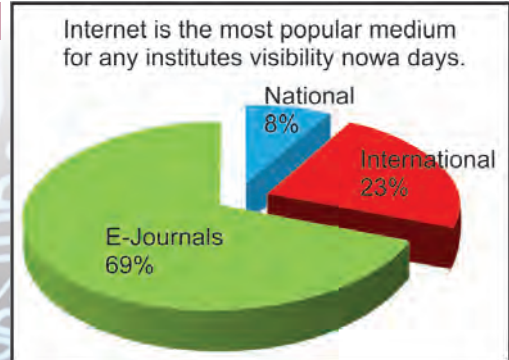
Colleges in terms of Industry Interface

- BIT Sindri, Dhanbad
- Chandigarh Engineering College, Mohali
- CMR Institute of Technology, Hyderabad
- Chitkara University Institute of Engineering & Technology, Patiala
- College of Engineering, Pune
- MLR Institute of Technology, Hyderabad
- National Institute of Technology, Delhi
- National Institute of Technology, Rourkela
- Nandha Engineering College, Erode
- Sri Ramakrishna Engineering College,Coimbatore

Colleges in terms of Academic Excellence

- Amity School of Engineering & Technology (ASET), Manesar
- BIT Sindri, Dhanbad
- Chandigarh Engineering College, Mohali
- College of Engineering, Pune
- National Institute of Technology, Delhi
- National Institute of Technology, Rourkela
- S.A.Engineering College, Cheenai
- CMR Institute of Technology, Hyderabad
- Shri Shankaracharya Technical Campus, Bhilai
- The Oxford College of Engineering, Bengaluru
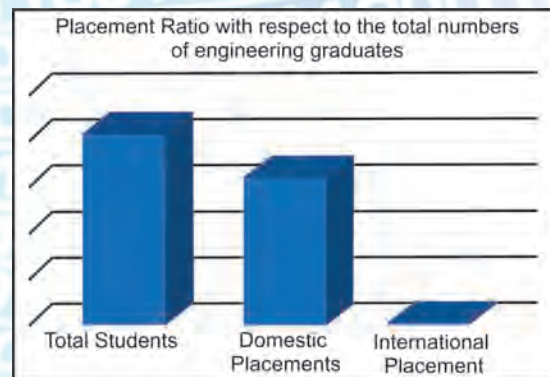
Colleges in terms of Infrastructure

- Amity School of Engineering & Technology (ASET), Manesar
- BIT Sindri, Dhanbad
- College of Engineering, Pune
- Institute of Technology, Nirma University, Ahmedabad
- National Institute of Technology, Delhi
- National Institute of Technology, Rourkela
- Rajagiri School of Engineering & Technology,Ernakulam
- Siddaganga Institute of Technology, Tumkur
- Shri Shankaracharya Technical Campus, Bhilai
- Veltech High Tech DR. Rangarajan DR.Sakunthala Engineering College, Chennai
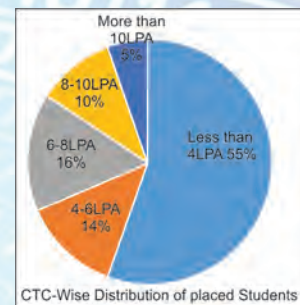
Top Emerging Colleges

- Amity School of Engineering & Technology (ASET), Manesar
- Aditya College of Engineering, Madanapalle
- Annamacharya Institute of Technology & Sciences, Kadapa
- CMR Engineering College,Hyderabad
- National Institute of Technology, Delhi
- Srinivas Institute of Technology, Mangaluru

Internet is the most popular medium for any institutes visibility nowa days.

National 8%
International 23%
E-Journals 69%

Students are encouraged to participate in different levels to develop their enter personal skills

Other 18%
International Level 5%
State Level 35%
National Level 42%

Placement Ratio with respect to the total numbers of engineering graduates

Total Students
Domestic Placements
International Placement

More than 10LPA 5%
8-10LPA 10%
6-8LPA 16%
4-6LPA 14%
Less than 4LPA 55%

CTC-Wise Distribution of placed Students

Recruitment by Different Sectors

Sector	Value
Commerce	26
Software & IT Services	14
Marketing Education	8.89
Manufacturing	8.2
Government	5.64
Banking & Finance	5.6
Consulting	5.5
Telecommunications	4.5
FMCG	4
Health care	3

CHRONICLE ENGG. COLLEGES' SURVEY 2017

IIT's

S. No.	Name Of Institute	Establishment Year	State
1.	Indian Institute of Technology (IIT), Roorkee	1847	Uttarkhand
2.	Indian Institute of Technology (IIT), Kharagpur	1950	West Bengal
3.	Indian Institute of Technology (IIT), Mumbai	1958	Maharashtra
4.	Indian Institute of Technology (IIT), Kanpur	1959	Uttar Pradesh
5.	Indian Institute of Technology (IIT), Delhi	1961	Delhi
6.	Indian Institute of Technology (IIT), Guwahati	1994	Assam
8.	Indian Institute of Technology (IIT), Bhubaneswar	2008	Odisha
9.	Indian Institute of Technology (IIT), Gandhinagar	2008	Gujarat
10.	Indian Institute of Technology (IIT), Hyderabad	2008	Telenga na
11.	Indian Institute of Technology (IIT), Jodhpur	2008	Rajasthan
12.	Indian Institute of Technology (IIT), Patna	2008	Bihar
13.	Indian Institute of Technology (IIT), Ropar	2008	Punjab
14.	Indian Institute of Technology (IIT), Indore	2009	Madhya Pradesh
15.	Indian Institute of Technology (IIT), Mandi	2009	Himanchal Pradesh
16.	Indian Institute of Technology (BHU), Varanasi	2012	Uttar Pradesh
17.	Indian Institute of Technology (IIT), Palakkad	2015	Kerala
18.	Indian Institute of Technology (IIT), Tirupati	2015	Andhar Pradesh
19.	Indian Institute of Technology (IIT), (ISM) Dhanbad	2016	Jharkhand
20.	Indian Institute of Technology (IIT), Bhilai	2016	Chhatishgarh
21.	Indian Institute of Technology (IIT), Goa	2016	Goa
22.	Indian Institute of Technology (IIT), Jammu	2016	Jammu & Kashmir
23.	Indian Institute of Technology (IIT), Dharwad	2016	Karnataka

NIT's

S. No.	Name Of Institute	Establishment Year	State
1.	National Institute of Technology, Patna	1886	Bihar
2.	National Institute of Technology, Raipur	1956	Chhattisgarh
3.	National Institute of Technology, Warangal	1959	Telangana
4.	Maulana Azad National Institute of Technology, Bhopal	1960	Madhya Pradesh
5.	National Institute of Technology, Durgapur	1960	West Bengal
6.	National Institute of Technology, Jamshedpur	1960	Jharkhand
7.	Visvesvaraya National Institute of Technology, Nagpur	1960	Maharashtra
8.	National Institute of Technology, Srinagar	1960	Jammu & Kashmir
9.	National Institute of Technology, Surathkal	1960	Karnataka
10.	Motilal Nehru National Institute of Technology, Allahabad	1961	Uttar Pradesh
11.	National Institute of Technology, Calicut	1961	Kerala
12.	National Institute of Technology, Rourkela	1961	Odisha
13.	Sardar Vallabhbhai National Institute of Technology, Surat	1961	Gujarat
14.	Malaviya National Institute of Technology, Jaipur	1963	Rajasthan
15.	National Institute of Technology, Kurukshetra	1963	Haryana
16.	National Institute of Technology, Tiruchirappalli	1964	Tamil Nadu
17.	National Institute of Technology, Agartala	1965	Tripura
18.	National Institute of Technology, Silchar	1967	Assam
19.	National Institute of Technology, Hamirpur	1986	Himachal Pradesh
20.	Dr. B. R. Ambedkar National Institute of Technology, Jalandhar	1987	Punjab

21.	National Institute of Technology, Yupia	2010	Arunachal Pradesh
22.	National Institute of Technology, Ravangla	2010	Sikkim
23.	National Institute of Technology, Farmagudi	2010	Goa
24.	.National Institute of Technology, Shillong	2010	Meghalaya
25.	National Institute of Technology, Dimapur	2010	Nagaland
26.	National Institute of Technology, Imphal	2010	Manipur
27.	National Institute of Technology, Aizawl	2010	Mizoram
28.	National Institute of Technology, Pauri Garhwal	2010	Uttarkhand
29.	National Institute of Technology, Delhi	2010	New Delhi
30.	National Institute of Technology, Puducherry	2010	Puducherry
31.	National Institute of Technology, Tadepalligudem	2015	Andhar Pradesh

IIIT's

S. No.	Name Of Institute	Establishment Year	State
1.	ABV-Indian Institute of Information Technology and Management, Gwalior	1997	Madhya Pradesh
2.	Indian Institute of Information Tehnology (IIIT), Allahabad	1999	Uttar Pradesh
3.	Indian Institute of Information Technology, Kalyani	2000	West Bengal
4.	Indian Institute of Information Technology, Pune	2003	Maharashtra
5.	Pandit Dwarka Prasad Mishra Indian Institute of Information Technology, Design and Manufacturing (IIITDM), Jabalpur	2005	Madhya Pradesh
6.	Indian Institute of Information Tehnology, Design and Manufacturing (IIITDM), Kancheepuram	2007	Tamil Nadu
7.	Indian Institute of Information Tehnology, Design and Manufacturing (IIITDM), Kurnool	2007	Gujarat
8.	Indian Institute of Information Tehnology Sri City, Chittoor	2013	Andhra Pradesh
9.	Indian Institute of Information Tehnology, Guwahati	2013	Assam
10.	Indian Institute of Information Technology, Vadodara	2013	Gujarat
11.	Indian Institute of Information Technology,Kota	2013	Rajasthan
12.	Indian Institute of Information Technology, Tiruchirappalli	2013	Tamil Nadu
13.	Indian Institute of Information Technology, Una	2014	Himachal Pradesh
14.	Indian Institute of Information Technology, Sonepat	2015	Haryana
15.	Indian Institute of Information Technology, Senapati	2015	Manipur
16.	Indian Institute of Information Technology, Lucknow	2015	Uttar Pradesh
17.	Indian Institute of Information Technology, Kottayam	2015	Kerala
18.	Indian Institute of Information Technology, Dharward	2015	Karnataka
19.	Indian Institute of Information Technology, Nagpur	2016	Maharashtra
20.	Indian Institute of Information Technology, Ranchi	2016	Jharkhand
21.	Indian Institute of Information Technology, Bhopal	2017 Expected	Madhaya Pradesh
22.	Indian Institute of Information Technology, Agartala	2017 Expected	Tripura
23.	Indian Institute of Information Technology, Kakinada	2017 Expected	Andhra Pradesh
24.	Indian Institute of Information Technology, Surat	2017 Expected	Gujarat

WHAT ARE THE CRITERIA TO IMPROVE ENGINEERING EDUCATION IN INDIA

With 700 universities and more than 35,000 affiliated colleges enrolling more than 20 million students, Indian higher education is a large and complex system. By 2030, India will be amongst the youngest nations in the world. With nearly 140 million people in the college-going age group, one in every four graduates in the world will be a product of the Indian higher education system. More than 85% of students are enrolled in bachelor's degree programs with majority enrolling in three-year B.A., B.Com. or B.Sc. degrees. One-sixth of all Indian students are enrolled in Engineering/Technology degrees.

The clamour to jump and cling on to the engineering education bandwagon is on an unprecedented ascendancy in an India under the effects of a middle class boom. Come the higher secondary classes, and if one is anything near decent at math, she is hastily shunted into the "non-medical" stream at school, the parents star-struck at the hefty sums offered to fresh graduates by technology giants and reported with gloss in national media, and motivated by the middle-class aspirations of a "settled" life for their ward.

It's a known fact that engineering graduates have a strategic and long-term impact on productivity growth in industry and service sectors. To produce sophisticated industrial products and services that are competitive in the global market and to realize the 'Make in India' initiative, India will need a really high number of well trained and extremely qualified engineering graduates. There are many engineering colleges which are producing huge number of engineers every year but the quality is not maintained equally in comparison with the number. Quality of engineering education should not get affected with the scaling up process. This leads to closure of many engineering colleges.

**Dr. B. Pattnaik, Director
(Chandigarh Engineering College)**

Figure-1 shows the percentage of students joins in different undergraduate courses in India.

Figure-1: Stream-wise undergraduate enrolment (Ref: AISHE 2013-14, Fig 7)
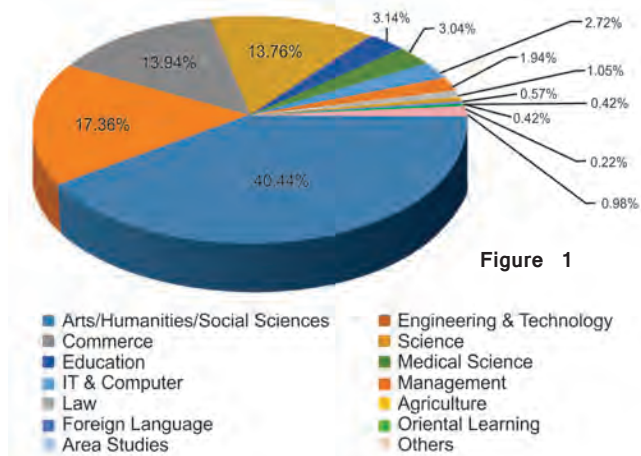
Institutions could not perform as per expectations because of following reasons.

- Largely affiliated colleges following the curriculum of universities
- Only a small number of autonomous colleges are emerging
- Focus of most of the institutions is undergraduate teaching and the post-graduate programs are weak
- Employers are not happy with engineering talent pool
- Very little focus on research
- Absence of academic framework to constantly respond to the changing needs
- No serious engagement between education providers and employers
- Lack of enterprising character / innovation mindset
- Lack of systemic capacity building effort in education and research
- Accreditation is more of compliance rather than an improvement tool
- No participation in regional development
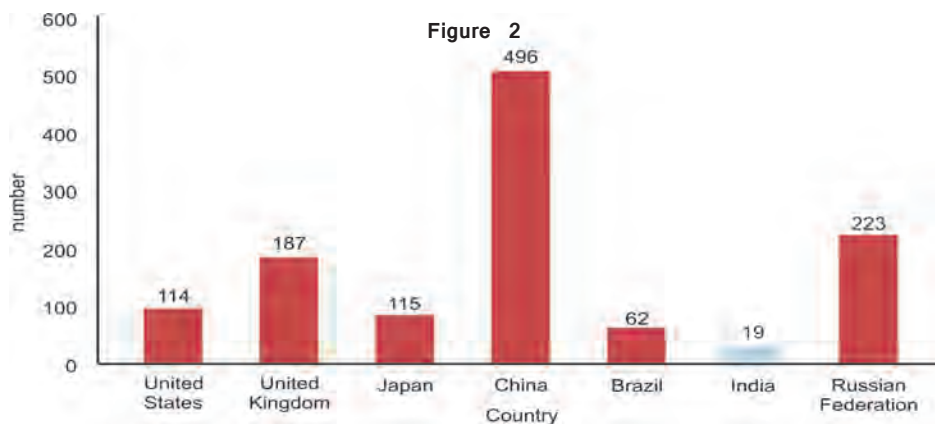- Low key entrepreneurship promotion activities

Figure 1

Arts/Humanities/Social Sciences — 40.44%
Engineering & Technology — 17.36%
Commerce — 13.94%
Science — 13.76%
Education — 3.14%
Medical Science — 3.04%
IT & Computer — 2.72%
Management — 1.94%
Law — 1.05%
Agriculture — 0.57%
Foreign Language — 0.42%
Oriental Learning — 0.42%
Area Studies — 0.22%
Others — 0.98%

Figure 2

Country	number
United States	114
United Kingdom	187
Japan	115
China	496
Brazil	62
India	19
Russian Federation	223

Shri Shankaracharya Technical Campus

(Managed by Shri Gangajali Education Society, Bhilai)
ISO 9001:2008 Certified Campus
www.sstc.ac.in

Shri Shankaracharya Group of Institutions (SSGI)   **Shri Shankaracharya Engineering College** (SSEC)
Shri Shankaracharya Institute of Technology & Management (SSITM)

KNOWLEDGE | EXPERIENCE | INNOVATION

Recognition

No. **1** Engineering College in Central India

All India Ranking within **100** by Outlook & Dataquest

All India **21st** Rank by Outlook-Money

A Grade by NPTEL

A++ by Chronicle

Courses Offered

ENGINEERING
B.E.
EN-111, EN-137, EN-136
M.Tech
PhD
Diploma
DE-138

PHARMACY
B.Pharma PH-108

MANAGEMENT
M.B.A., PhD
MB-118,119, 120

COMPUTER
M.C.A. MC-109 MC-110 **PhD**

Institute Credentials

- **NBA Accredited**
- First & Only **Business Incubation Center** for Start-Ups in C.G. supported by **MSME, Govt. of India**
- **40+** Industrial Visits and **30+** Workshops every Year
- **Research Grants** from **DST, AICTE, CGCOST** etc.
- In-house **EDRP** (i-Classes : A digital study material)
- **Center of Excellence: Siemens, TCS Academic partner Microsoft IT Academy, NPTEL, IEDC & redhat**
- **PhD Research Center**
- **65+ PhD** Faculties
- First **IEEE Student Branch** in C.G.

Our Students Placed

TATA TATA CONSULTANCY SERVICES | Tech Mahindra IT Services and Telecom Solutions
RENAULT | HDFC BANK
ITC PAPERBOARDS AND SPECIALTY PAPERS DIVISION | Mindtree Welcome to possible
amazon | Alembic
Nestlé | ZYCUS PROCURE PERFORMANCE
WIPRO | AREVA
ICICI Bank | Hexaware TECHNOLOGIES
POLARIS live your dream | LAFARGE

Campus Recruitment
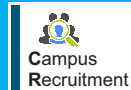
| **65+** Companies Visited Campus | **95%** Placement in Campus | **10K+** Alumni Strength |

Admission Enquiry

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Campus: Junwani, Bhilai, Durg Chhattisgarh 490020
Tel:+91 788 408 8888, +91-788 2298 605/6/7
Fax: 0788 - 2298606 | email: sstc@sstc.ac.in

SSTC is approved by AICTE & Affiliated to Chhattisgarh Swami Vivekanand Technical University Bhilai

[1]Figure 2 and 3 show how Indian engineering institutions comparatively poor in total number of faculty available in the institutions and the student faculty ratios

Figure-2:   Faculty per institution in engineering departments (Ref: Aspiring Minds, Report-2015)

Figure-3: Student-to-faculty ratio in engineering institutions (Ref: Aspiring Minds, Report-2015)

Figure 3
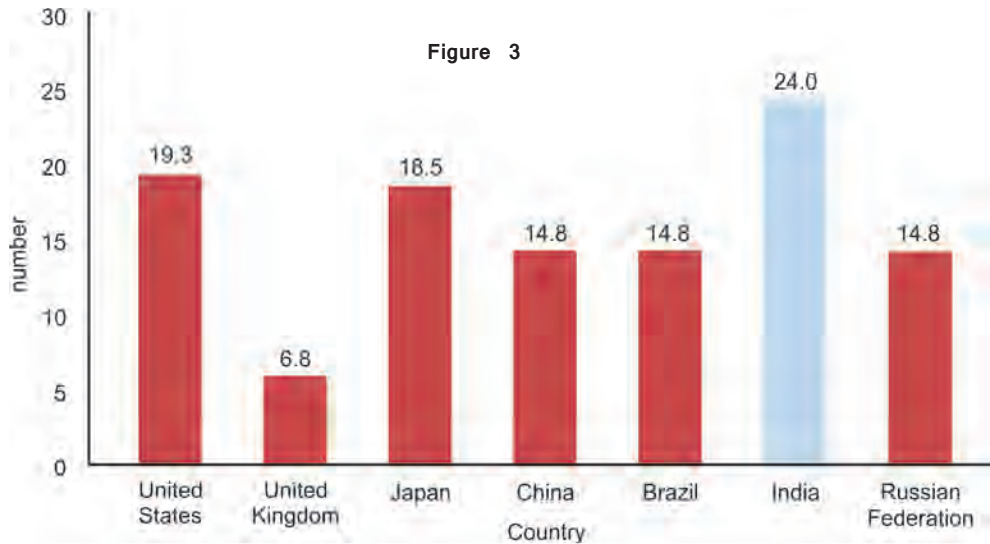
Criteria to Improve Engineering Education in India.

- Institutions must have a clear vision and mission policy
- Institution with full academic autonomy and adequate financial autonomy
- Excellent teaching and research-intensive / research-led institution
- Adaptation of academic framework that is responsive to stakeholders needs
- Student learning outcomes in tune with employers' expectations
- Strong link with industry in design, development and delivery of the courses / programs
- Employers satisfied with quality of the talent pool
- Faculty training that is strongly linked to institutional processes and aspirations
- Effective ICT technology adaptation to enhance student learning and faculty competence
- Strong post-graduate and research programs
- Led by strong academic leaders and administrators who continually drive institutional aspirations
- Institutions must have other means of revenue generations other than government subsidies and/or student fees
- Contributing to the regional socio-economic development through entrepreneurship and innovation activities
- Centres of Excellences in priority areas for the college

Figure-4: Bottom up and Top down initiatives (Reference: The EEI 2025 Workshop)

Figure 4

ARE ENGINEERING COLLEGES
REALLY PRODUCING PROFESSIONALS?

Dr. M. Janga Reddy, Principal
(CMR Institute of Technology)

India is a developing country. With the rapid rise of middle-class sector, students' admission into engineering colleges is equal to attaining a specific status in the society. And right from the day the students start going to engineering college their first aim is to "get a job and secure their future". The pathetic part of the whole process is that no individual is interested in dreaming for any other profession or interested in welcoming risks associated with various professions. The result of such mass mentality is that all students wanting to tread a safe and common route called engineering and get a so called dream job in Software industry in the ongoing IT Revolution. In such a mad race where can true professional exist?

That means the level of education, particularly in private engineering colleges is at stake as every enrolled aspirant is not up to the required standard. With only a few good private colleges focusing on standard, all the mushrooming colleges are remaining stagnant. Almost all the colleges advertize that they offer quality education and collect capitation money and high fees, take students through three to four years and give them a degree but the required placement is affected. Unfortunately, there are deemed universities too among such lot. This shows how quality is lacking everywhere without proper higher authority to monitor the same.

The body to regulate and fix the minimum standard required for engineering education should function uniformly in the whole country. The scene should not be an IIT producing a top-class person and some unknown college across the country producing an engineering graduate with absolutely no match in their quality to an IITian or an engineering graduate from any other prestigious engineering institution such as NIT, IIIT, etc. The regulatory body should also be made responsible for the conduct of engineers on the whole even in the professional sphere.

The students too should take pride in their profession and develop the necessary passion for the profession is required. The remuneration, the position offered and the company one is getting placed at should not be whole and sole criteria. Remuneration is not the reward for an engineer. The reward is the satisfaction of doing a job well.

While the current approaches to teaching used in engineering schools serve the development of analytical skills rather than creative acumen, the purpose of professional identity is lost. The Accreditation Board for Engineering and Technology (ABET) identifies engineering as "that profession in which knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature "for the benefit of mankind" (emphasis added).

Further, engineering education should be quality bound as the degree holder or the graduate can pursue a productive engineering career only through continued professional growth. To conclude, analytical skills are much needed professional tools for engineers but are not the only parameter for a complete engineering education. Because, a system of education that focuses in solving only classroom problems in which all variables are accurately known and only one correct answer exists does not match with the real professional life situation where young professionals encounter varieties of unforeseen problems in their jobs for which lots of creative acumen is necessary.

And such education does not stimulate the creativity of budding aspirants. The teaching/ learning phenomenon should concentrate on discussing open-ended problems in the engineering classroom as this move would serve towards laying healthy educational foundation among young engineers and the country also can experience the work of professional with more complete and relevant engineering education.

Dr. N. R. Alamelu, Principal Shri Ramkrishna Engineering College

WHAT ARE THE CONDITIONS OF ENGINEERS IN INDIA NOWADAYS?

India, the largest democratic country in the world, today has a population of 1.34 billion. Out of the total Indian population a recent survey projects that 100,215,890 million people are below the age group of 15 and all these young minds are at cross roads having a huge task in front of them to decide as to what should be their planning to settle well in their lives with ambitious career prospects. In Indian education scenario as recently as a decade ago, most of the parents wanted their wards to pursue any of the professional programmes only and to most of the parents professional programmes meant either medicine or engineering. The school education system currently prevailing does not offer the right kind of inputs to the students enabling them to evaluate their aptitude to opt for the right professional course. One another aspect of school education system is that the combination of courses available in higher secondary level provide options of choosing courses on engineering, medicine and other professional degree, till such a time the results of higher secondary examinations are published. This is a serious problem because of which the students have the mind set to have all the options open and unable to identifiy their right aptitude till the age of 17. They finally land up taking a decision on the choice of higher education purely based on some statistics and also because of parental and peer pressure.

The engineering education in India has gone through several transformations during the last two decades. According to the recent AICTE report approximately 16% of the students pursuing higher education in India study engineering and technology. The number of graduates coming out of technical colleges is increasing year on year. Now the question is, are all these huge number of engineers graduating every year truly good engineers? This question draws very serious attention because most of the engineering graduates have not done engineering out of passion, to develop their skills and competence in a niche technology area.

As an academician with three and half decades of experience and as an academic administrator during the last one decade, I feel that most of the engineering aspirants today, look for a job and not a career. A career is something which would kindle the enthusiasm to learn new things to grow and sustain the professional challenges. A job would give them a responsibility to be completed for which they are being paid. Looking at the number of engineering colleges in India and the engineers graduating every year the question that comes to the minds of everybody is, do we need so many engineers ? Are they all employable? If the same question is extended to the global scenario, what is the answer? Both globally and also in the Indian context the answer is a big 'YES' The world and also India needs in plenty, talented, competent and well equipped engineering graduates. The problem today is not that of unemployment but the problem of the aspirants tuning themselves to the requirements of the industry. The engineering graduates today are expected to not only have a good academic record and a good CGPA, it is much more than that. The engineers are expected to be creative, innovative and to be out of the box thinkers. The engineers are expected to understand the problems of the society and apply technology to solve those problems which in turn will improve the quality of life. Engineering graduates who think different, who have the right aptitude will definitely make a difference in the society and will have a prosperous career. The engineers today can never stop learning after graduation. They must be willing to constantly update their knowledge on the current technologies, willing to learn and relearn. They will have to be curious for continuous learning and to experiment something totally new. The engineering graduates who possess and develop these qualities will always have a good career, a career very much related to their skills and aspiration. In the current trend of multidisciplinary requirements of engineering graduates, all the engineering graduates who are passionate, who are problem solvers will definitely find a good career in the world wherever they are from.