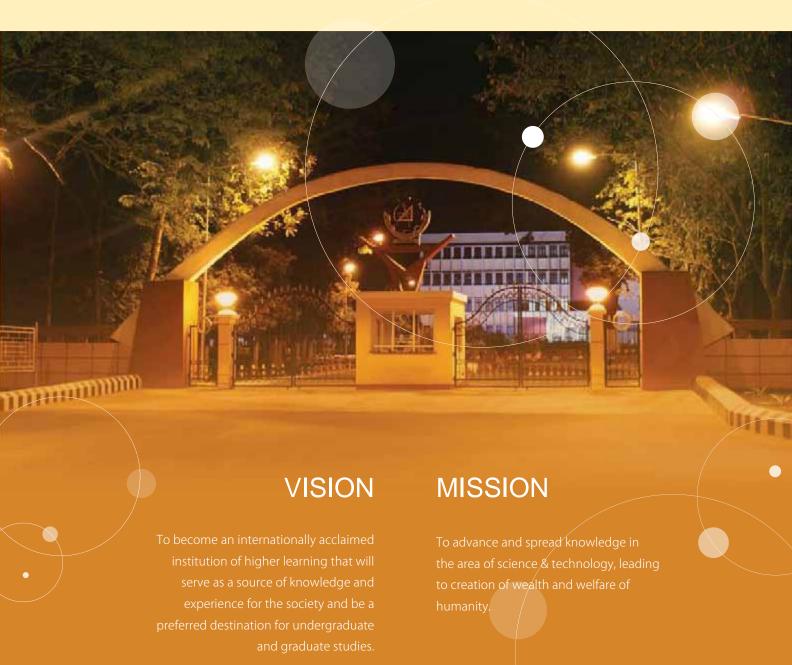
# PLACEMENT 2009



National Institute of Technology Rourkela

## About NIT Rourkela

Established in 1961, NIT Rourkela is one of the oldest and most renowned institutions in the country. Since its establishment, NIT Rourkela has attracted many of the brightest minds in india. Located at the picturesque conjunction of Rourkela's industrial landscape and civilization, NIT Rourkela has grown to be amongst the most respected institutions across the country. Today, the institution has been recognized as an institution of national importance along with the IITs and IIMs by the NIT Act. The collective accomplishments of our highly successful alumni is in a large measure responsible for the ever-growing tradition and reputation of NIT Rourkela as one of the best engineering education and research institutions in the country.



# Why recruit at NITR?

## Not a college, but an institution

NIT Rourkela distinguishes itself not as a college of engineering but an institution. A college is a place where one can just get a degree but an institution of national importance like NIT Rourkela, is here to serve a larger purpose where getting a degree doesn't form the primary objective of the institution. The idea of creating better technologists, better leaders and importantly better citizens runs deep down through the teaching pedagogy of the curriculum.

#### Survival of the fittest

Of the 5 Lakh students who take the All India Engineering Entrance Examination (AIEEE) only about 8000 make it to NITs of which only about 400 make it to NIT Rourkela. This highly rigorous procedure ensures that only the best of the best make it to NIT Rourkela.

#### Choices in curriculum

NIT Rourkela offers a plethora of choices to its students in the field of engineering and sciences. The 14 departments offer a wide range of courses which are designed to meet the current requirements of the industry and the academia. The curriculum encourages students to apply theoretical learning to real-life scenarios in the form of case studies, research, events, live projects and the likes. The overriding principle behind all of the activities taken up by the students is aimed at developing a better individual and a better personality as a whole and not merely a good engineer.

#### NITR culture

If there's any thing that has remained intact throughout the 49 years of establishment of NIT Rourkela, it is the spirit of NIT Rourkela. Its this spirit that NITRans imbibe and carry forward wherever they go. The hallmark of this spirit has been to not walk on the path already taken but to establish new routes, to take the less trodden path and be the first to respond to the needs of the people and the nation.

## Rankings

The excellence of NIT Rourkela's education has been time and again recognized by the various surveying agencies. The most recent survey conducted by India Today puts NIT Rourkela at 3rd spot amongst all NITs and at 18th spot all over the country.





# Message from Director

Prof. Sunil K. Sarangi
Director

On behalf of the National Institute of Technology, Rourkela it is my pleasure to welcome you to this beautiful campus. This Institute has been known for its loving hospitality for more than four decades, and we strive hard to keep up the tradition. In case we have inadvertently slipped somewhere, I offer my sincere apologies. Our academic programme is amongst the best in the country. It provides an optimum mix of theory and practical, with strong bias on industrial applications. In more recent years, introduction of modern computational tools and digital equipments have further improved the programme. While the depth of training in engineering subjects is unquestioned, the breadth of our curriculum is often overlooked. The NITR graduate learns subjects across departmental boundaries and excels in extracurricular activities. The mix of technology and management skills that a NITRan possesses makes him an invaluable asset to any company he works for.

With fourteen departments awarding degrees in engineering and science, we are one of the most diversified institutions. Whether you are young or old as a company, whether your business is in coal mining or in data mining, whether the job you are offering is in the shop floor or in R&D, we have the right engineer scientist for you. We give you freedom and extend to you all physical facilities to carry out your own recruitment process on our campus. In case you have a time pressure or other inconvenience, we shall only be too glad to meet your selection team in another city.

Whether you have regularly recruited our graduates and post graduates, or you are visiting us for the first time, I am sure you will find our students very competent and you will visit us again, year after year. We look forward to a warm and enduring relationship.





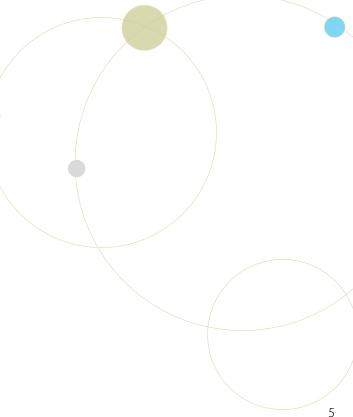
# Message from HOD T&P

n behalf of National Institute of Technology, Rourkela, it is my Training and Placement. pleasure to invite you to our beautiful academic campus for conducting campus selection programmes for our students, It is my privilege to mention that this institute was established in 1961 and over the years it has earned recognition not only in India but all over the globe. The students of this institute are occupying enviable positions in various organisations at home and abroad. Many of them have been the driving force behind the industrial landscape of our nation. Our Institute enjoys the status of Institute of National Importance. Our institute has been modernised by two foreign collaborative funding agencies, viz. Indo-UK-REC Project for the Materials theme in the Metallurgical and Materials Engineering Department and the World Bank-cum-Swiss Development corporation IMPACT project in the Computer Science and Electronics Departments. Presently a massive developmental work has been completed under the World Bank funded Government of India's TEQIP scheme for all the Departments.

The Institute has earned fame not only for its excellent academic and extracurricular activities but also for its research, consultancy and development activities. Further the National Board of Accreditation constituted by the All India Council for Technical Education has been pleased to grant accreditation to all our academic courses on the basis of thorough review of performance of the institute in field of Academic Administration. With this brief background I am furnishing in the pages to follow all pertinent information about us. I would request you to kindly visit our campus for selecting candidates of your choice on any date convenient to both of us. Expecting our interaction to grow over the years to come.

Prof. B.B. Biswal

Professor & Head



# Infrastructure

Spread across a mammoth 675 acres carpeted by a lush green cover, the campus of NIT Rourkela is situated right at the conjugation of the hills of Rourkela. The campus is characterized by aesthetically pleasing buildings which have inspired generations of students to strive for excellence. The new extension of campus, following the High Court order, will be adding another 400 acres to the already huge campus. The campus is a mini township in itself with all the modern amenities. There are eight halls of residence, seven for boys and one for the girls with an over all accommodation capacity of over 3000 boarders.

The entire campus is connected by a state-of-the-art network with almost 4000 nodes. Every student and faculty member has a networked personal computer at his/her disposal. With an internet bandwidth of 20Mbps, NIT Rourkela hosts one of the most advanced computer networks in the country.



# Biju Patnaik Central Library

The Biju Patnaik Central library, named after the former Chief Minister of Orissa, serves as the powerhouse for research and studies of the entire institution. Spread over three floors, the library is an invaluable resource with over 60,000 volumes, 1400 journals and periodicals, 700 CDs and video cassettes. The library also hosts a digital online library, providing access to over 1200 video courses online and a number of other journals and an online-wiki page hosted on the intranet for the benefit of the students. The online repository hosted by the library also hosts every paper, dissertation and thesis published by the students and faculty not only making it one of the biggest online resources for both the students and the faculty but also making the publications visible throughout the globe.

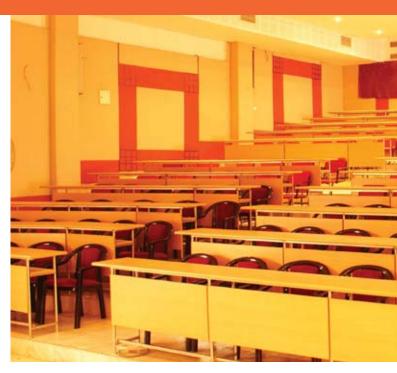


## **Computer Centre**

The Central Computer centre offers round the clock services with an uninterrupted power supply to students on the campus with the latest infrastructure supporting the research and studies at the campus. The computer centre hosts the latest IBM servers with storage capacity up to 6 TB.

# Auditorium, Lecture Halls and Conference Rooms

The campus also hosts a newly renovated Auditorium with a seating capacity of over 1000 and centralized air conditioning system. The campus also has a newly constructed Lecture Gallery with a seating capacity of over 300 and 6 other conference rooms, all of which are adequately equipped with uninterrupted power supply, air conditioners and LCD projectors. Facilities to conduct tests online are also available to conduct tests on a large scale at a time.







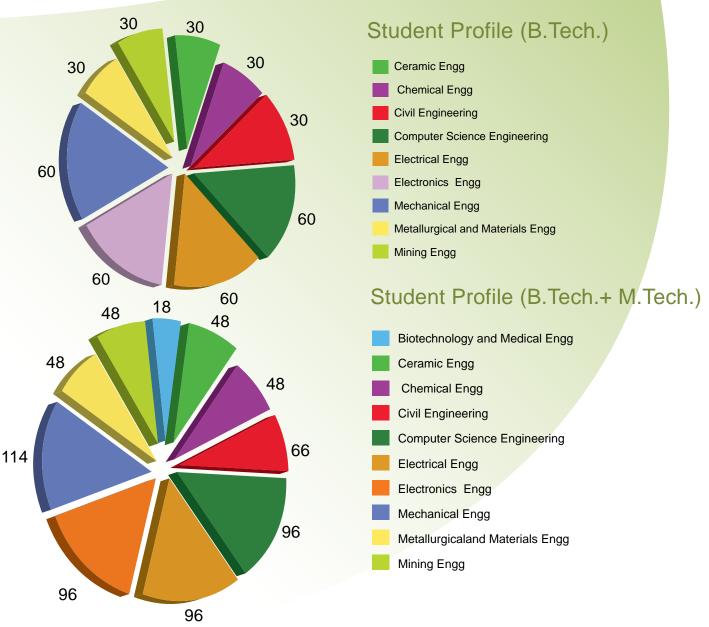
## Ongoing construction

Construction worth about Rs 98 crs is being carried all over the campus, which include construction of new department buildings, labs and other extension centers. A new complex housing 4 new lecture halls with the latest amenities is being constructed which will increase the total number of lecture halls and conference rooms to ten. Also, a new cricket stadium is being constructed for the cricket lovers at the campus.

## **Sports Facilities**

All work and no play makes Jack a dull boy indeed. At NIT R, games and sports receive equal attention relative to any other academic activity. The institute hosts one of the best sporting infrastructures for the students. The newly renovated Dilip Tirkey stadium plays host to a number of inter-NIT sports festivals and athletic competitions. The institute also hosts 2 Basket Ball Courts, 3 Lawn Tennis Courts and a newly constructed Swimming Pool. For people who are more inclined towards physical fitness, the institute also Sports a well equipped Gym.





# Department of **Biotechnology**



The department of Biotechnology & Bio Medical Engineering was established in the year 2007 with a new dimension of human development. Started with 3 faculty members and 6 students getting postgraduate degree in biochemical engineering, today the department runs B.Tech in both the branches, M.Tech in Biotechnology & Bio Medical engineering, M.Tech (Research) and PhD with almost 100 students in all. The department is showing a good pace of development with new instruments and other required things coming up through the co-operation of faculties and students. A major development which the department saw in 2008-2009 was the starting of the new building.

#### Strengths

The department selects students every year through AIEEE for B.Tech and GATE for M.Tech & PhDs. Presently 29 students are getting their M.Tech degree and two PhDs are getting the research experience. Biomedical Engineering is an exciting new discipline of engineering that covers the multidisciplinary knowledge of basic sciences, engineering, medicine and biology to solve important biological and medical problems.

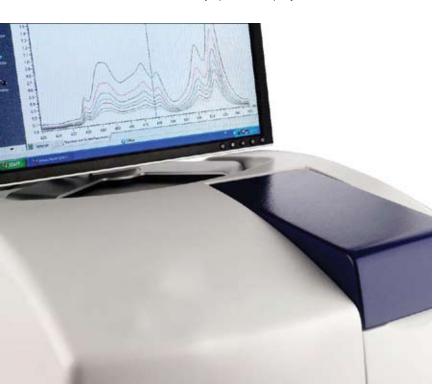
#### Ongoing research and technological development

There are some noteworthy projects running in the department, funded by DBT and DST. The department would be first among all the NITs to run projects on Stem cell characterization and some other related works like cryopreservation. Other areas being covered are cancer biology, nano biotechnology etc. The department is proud to have a team of engineers and M.B.B.S doctors who are well versed in their areas. The department has the privilege to have its papers (research + review) published in reputed journals.

Keeping with the pace, the department has also introduced some subjects of high research interest, like "Protein conformations - neurodegenerative diseases and therapeutic approaches", "protein engineering", "Biomedical Image & Signal Processing", "Rehabilitation Engineering and Medical Informatics" etc.

#### Industrial collaborations

The department is in process to have tie-ups with certain international & national companies for new projects in the pipeline. The department is also in collaboration with Ispat general Hospital, a unit of RSP. With very energetic approach, the department is looking forward to have some industry sponsored projects too in the future.



#### **Facilities**

The department research arena consists of following instrumental facilities

- Fermentor (3 liters)
- In-Situ fermentor (dual) (5 liters)
- HPLC
- Spray dryer
- UV Spectrophotometer
- Inverted Phase contrast Microscope
- CO<sub>2</sub> Incubator
- Gel docking system

http://nitrkl.ac.in/departments/bm/aboutus.asp

# Department of Ceramic Engineering



stablished in 1994, the Department of Ceramic Engineering at NIT Rourkela is India's only integrated program in Ceramic Engineering among 17 NITs having a proper blend of competitive teaching and innovat.ive research and offering B. Tech, M. Tech, M. Tech (Research) as well as PhD programs in' Ceramic Engineering, Our programs are considered among the best in India for imparting quality teaching and research.

## Strength

Young, dynamic, well qualified and motivated faculty members, of the department are engaged in teaching as well active research in different traditional ceramics like Refractories, Glass and Glass Ceramics, Cement and Whitewares as well as in various advanced fields over a wide spectrum ranging from Structural Ceramics to Bioceramics and Tribology as well as Electronic Ceramics like Ferroic materials, Solid Oxide Fuel Cells, Nano materials and advanced magnetic materials. The low student to staff ratio allows us to have more personalized and interactive teaching and training schedule. The department has state of the art laboratory facilities for processing and characterization of traditional and advanced ceramics. The graduate and postgraduate students of the department are getting placed in some of the highly reputed core and software companies and some of them are also joining institutions of higher learning for further studies and research work.

http://nitrkl.ac.in/departments/cr/aboutus.asp

#### Research & Development

The department is among the few departments of the institute having a large number of sponsored research projects from different universities and research institutions. The department has collaborated with different IITs, IISCs, different universities and research institutions. A large number of postgraduate and Ph.D. scholars help us sustain the research activity. The department has been nominated by the Institute as the Centre of Excellence for Nano materials Research

## Industry / Interface

The department has collaborated with the different industries through collaborative research, Testing and Consultancy services and joint M. Tech and Ph.D. guidance.

## **Special Courses Offered**

The department offers a large number of Professional Electives for the students to broaden their knowledge base offering them greater opportunities in their areas of interest. Some of them are Application of Phase Diagrams, Refractories for Ferrous & Non-Ferrous Industries, Bio-ceramics, Structural Ceramics, and Composite Materials etc.

# Department of Civil Engineering

The Department of Civil Engineering was one of the three initial disciplines offered, when this Institute (formerly R.E.C, Rourkela) was established way back in 1961. This department has in the past produced several eminent engineers, academicians and scientists who have made notable contributions in their respective fields in the planning, design and execution of Civil Engineering projects in India as well as abroad. The department is endowed with a good number of well qualified faculties representing all the major five specializations with PhDs from reputed Institutions of the country and even some with postdoctoral fellow qualifications abroad.

## Strength

The department besides having well qualified faculty has enriched its laboratories. About ten laboratories managed by respective professors and trained technicians, are well equipped with modern sophisticated equipments to take up the new challenges in research. The faculty also renders technical service on live engineering problems to various agencies/ industries in the form of consultancy projects .

#### **Academics**

The department admits students from all over the country, through AIEEE who tend to select this age old traditional specialization for the B. Tech. degree because of emerging demands both in the industry as well as research and development. Students with high GATE scores and some sponsored candidates are admitted every year to the M.Tech. Programs. The students are also given opportunity to become conversant with softwares like STAAD-Pro, PULSE, ME scope model software, FLAC, Unipac, etc. for analysis of practical civil engineering problems. The department also organizes various short term training programmes for its students besides several seminars/ conferences and awareness programmes on the themes of emerging fields.

## Ongoing Research and Development Activities

The above programmes are ably supported with strong research programs in almost all the specializations. Many M. Tech. (Res.)/ PhD. students work in the department on emerging research problems. This has resulted in publication of papers in national and international journals, seminars/conferences and workshops/symposia.



## Industry/ Institute Interface

Many live problems from industry are referred to the department for a solution. Proposals are going on to get distinguished persons in the industry as adjunct faculty. Faculty members often take up their research problems related to the need of the industry.

## Special courses offered

Each specialization offers some special courses besides normal core and professional elective courses in both UG and PG level. They include remote sensing and GIS, composite structures, Optimization methods in Civil Engg., earthquake geotechnical engineering, soil structure interaction and; soil dynamics and industrial foundations.



# Department of Chemical Engineering



The Chemical Engineering Department at National Institute of Technology, Rourkela is among the best in the country both in terms of teaching as well as research of engineering sciences. The department was established in the year 1963 with undergraduate program and initiated postgraduate (PG) program in Coal Chemicals and Fertilizers in the year 1981. The department also offers Ph.D. Degree (Regular, Sponsored, and QIP). The Chemical Engineering programme at NIT, Rourkela, with its interdisciplinary flavours along with its diversified structure is dedicated to the aspiring students and mentoring them for the broad spectrum of Chemical Engineering careers. Above and beyond the classes, all the students carry out independent research through project and thesis work. The Department has an excellent ensemble of dynamic goal oriented, highly qualified and experienced faculty members. Keeping in view of the current and future requirements of the academia and industry. The faculty of Chemical Engineering offers a wide spectrum of courses supplemented by a number of electives in emerging areas at both undergraduate and postgraduate level. In order to ensure a broadbased education, both the theory and practical aspects of Chemical Engineering discipline are emphasized.

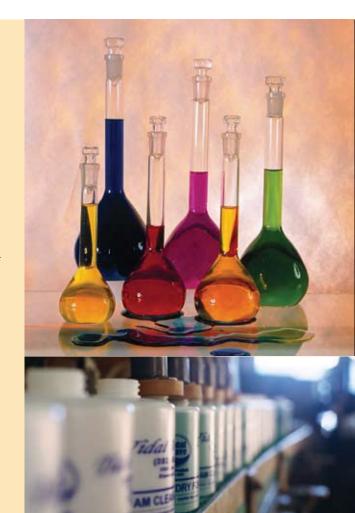
The Department is committed to a high quality research programme in a broad spectrum of areas like, Process Modeling and Simulation, Process Control, Reaction Engineering, Fluidization Engineering, Interfacial Science and Engineering, Nanotechnology, Membrane Separation, Fluid Phase Equilibria, Evolutionary Computations, Process Integration & Energy Engineering, Environmental Biotechnology, Biochemical Engineering, Computational Fluid Dynamics, Heat transfer, Industrial Pollution Control, and Coal Chemicals.

## Research facility and publication

The department has a good infrastructure and research facility with many sophisticated instruments like HPLC, Gas Chromatography, Particle size analyzer, Nano particle size and zeta potential analyzer, UV-Vis-NIR Spectrophotometer, Fluorescence spectrometer, Surface tensiometer, Video based optical contact angle meter, Optical Microscope, Quartz crystal microbalance Bioreactor, In situ Fermentor etc. and software's like ASPEN PLUS, FLUECT, SUPER TARGET. A good number of research papers published by the faculty and the students make it to some of the highly reputed journals every year.

## **Ongoing Projects**

The Department, at its appraisal has more than Rs. 1.25 crores worth of R&D and consultancy projects funded by various government as well as non-government organizations



http://nitrkl.ac.in/departments/ch/aboutus.asp

# Department of Computer Science



The Computer Science and Engineering department was established in the year 1983 and aims at the advancement of all the people associated with the department. Since its inception the department has dedicated itself to teaching and advancing the human knowledge through discovery, through its earnest and conscientious activities the department has evolved into a centre of excellence in academics, scientific research and cutting edge technologies.

#### Strength

The department, besides having well qualified faculty, also has laboratories that are well equipped with modern and sophisticated instruments to face new challenges in frontier research.

The department has been a home to quite a good number of highly qualified professors, who have earned their PhDs from various prestigious institutes and have a wide range of expertise ranging from database engineering, parallel algorithms, artificial intelligence, soft computing, software engineering, computer networks, image processing etc.

The department admits its students through the prestigious nationwide competitive examination; AIEEE and GATE. Every year the department attracts 60 bright students for its B Tech curriculum and 50 research scholars for its post graduate programs (M Tech and PhD). Students have proven their potential by excelling in various national and international level competitions organized by institution like IITs, NITs and organizations like Intel, Accenture, Aricent etc.

## Research and Development

Around 50 high quality research papers are published every year by both students and faculty members in various journals and conferences of national and international repute. Some of the R&D projects currently undertaken by the department are being sponsored by Indian Space Research Organization (ISRO), University Grant Commission (UGC), Department of Science and Technology (DST), Department of Information Technology (DIT), Ministry of Human Resource Development (MHRD), Defense Research Development Organization (DRDO) etc.

#### Industry interface

The department has active collaboration with various leading MNC's like Microsoft, Sun Microsystems, Accenture, TCS etc. Students have the opportunity of hands-on experience on various state-of-the-art technologies and executing some of the live projects.

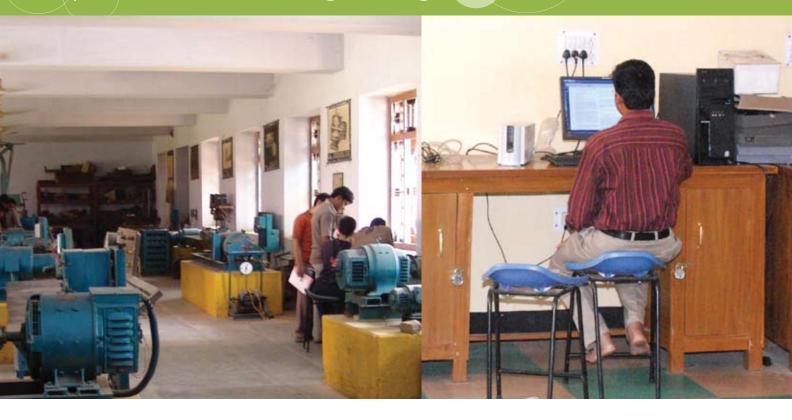
#### Special subjects offered

Apart from the core subjects the department of CSE offers the following special subjects as professional electives which the students may opt to further their education. Cryptographic Foundation, Computer Vision, Graph Theory and Network Algorithms, Network Security, Real Time Systems, Ad-hoc and Wireless Networks, Data Mining and Data Warehousing, Information Theory and Coding, Distributed Operating Systems, Game Theory, Pattern Recognition, Cluster and Grid Computing, Parallel Algorithms



http://nitrkl.ac.in/departments/cs/aboutus.asp

# Department of Electrical Engineering



Established in 1961 as one of the three primary disciplines offered, the Department of Electrical Engineering has evolved into a powerhouse for academics, scientific research and cutting edge technologies. The department attracts a good set of highly qualified faculty members, who have received their PhDs from IITs and various' other prestigious institutes abroad, with a wide range of expertise in circuits and system, communications and signal proceessing, control, and power, intelligent systems and networks

## Strength

The department draws in students chosen through highly rigorous examination- the All India Engineering Entrance Examination (AIEEE). Over 100 students receive their undergraduate and Post graduate degrees in Electrical Engineering every year.

# On-going research and research papers published/cutting edge technologies used

A good number of research papers are published every year by both the students as well as the faculty members stretching over a wide range of innovative topics concerning both the industry as well as the academia. Every year about 30 high quality referred research papers are published by the department.

Keeping in pace with the recent developments, a number of frontier areas of Electrical Technology are being pursued as research topics in the department and, a couple of advanced technology courses are also being taught in both the undergraduate and postgraduate levels.

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#### Industry interface/ Industry collaborations

The department is actively pursuing research by inviting industry experts from many nearby industries such as Rourkela Steel Plant (RSP), OCL Cements and L & T.

To strengthen the research work further, a number of sponsored projects are being pursued by the newly setup Centre for excellence in Industrial electronics and robotics.

#### M.Tech and PhD

The Department offers M.Tech courses with specializations in (i) Electronics systems and communication and (ii) Poer Control & Drives. Students from across the country with high GATE scores are admitted every year. Quite a good number of doctoral students are enrolled in the research work leading to Ph.D. degree.



# Department of Electronics & Communication Engineering



stablished in 1987 the Department of Electronics and Communication Engineering offers a wide variety of courses at undergraduate, postgraduate and Research levels. The graduates of the department are placed in different organizations around the world. The faculty members of the department have wide variety of expertise with strong academic background and are the alumni of reputed institutes in India and abroad. The research interest of faculty members include 'Signal Processing, Digital Communication, Soft Computing Techniques, VLSI, Image processing, Telecommunication systems to name a few. The students' placement track record has been excellent with many of them having been placed in reputed MNCs. The department boasts state of the art laboratories in DSP, VLSI, Communication, Mobile Communication, Image Processing, Instrumentation, Process Control fields. The curriculum integrates usage of software like MAT LAB, Synopsis, Cadence, Coware, Magma, Mentor Graphics, Xylinx, Tanner tools, LABVIEW, VISSIM, QUALNET, Agilent ADS etc. With substantial funding from different agencies the department has modernized the existing Laboratories and developed new Laboratories with state of the art infrastructure.

The department has strong research activities. The students and faculty members publish around 10 papers in journals and 30 in international conferences. Department also offers at least 2-3 short term courses in different areas of competencies.

#### **Courses Offered**

- B Tech (i) Electronics and Instrumentation Engineering
  - (ii) Electronics and Communication Engineering
- M Tech (i) Telematics and Signal Processing,
  - (ii) VLSI and Embedded Systems



Some of the major courses offered in the undergraduate program are

#### B Tech (ECE)

High Frequency Electronics

Laser and Radar Instrumentation

Mobile Communication

**VLSI** Design Techniques

Soft Computing

Digital Signal Processing

Adaptive Signal Processing

Microcontrollers and Embedded

System

Data communication and Networks

Antenna Design

#### B Tech (EIE)

Communication Theory

Control Systems and Advanced

Control Systems

Intelligent Instrumentation

Laser and Radar Instrumentation

Industrial Instrumentation

Biomedical Electronics and

Analytical Instrumentation

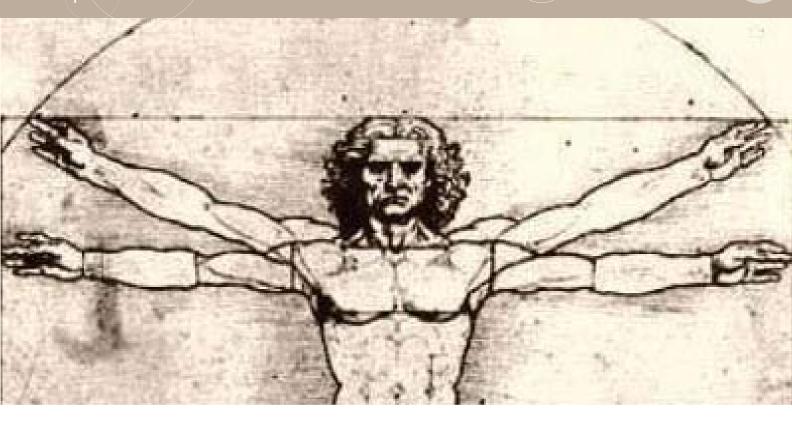
Digital Signal Processing

Mobile Communication

Adaptive Signal Processing

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# Department of Mathematics



The Department of Mathematics imparts teaching and research facilities to under -graduate (B.Tech,) and postgraduate (M.Sc., and M.Tech.) students covering most useful topics of Pure and Applied Mathematics. Students do computational works on the topics like Numerical Analysis, Operations Research, Statistical Methods and Mathematical Modeling. Besides the normal courses, post-graduate students undergo one industrial training, present seminar talks and review research papers, all to their credits.

Strongly motivated faculty and students nurture the vibrant academic environment of the department. The faculty members of the department are engaged in research and teaching on various areas of Mathematics, such as

- Differentiable Manifolds
- Category Theory
- Algebraic Topology
- Real and Complex Analysis
- Algebra and Topology
- Lie Algebras and Kac-Moody Algebras
- Symmetric Spaces
- **Groups and Combinatorics**
- Incidence Geometry
- Fuzzy Logic and Set Theory
- **Optimization Techniques**
- Fluid Dynamics
- Partial Differential Equations
- **Number Theory**
- Operations Research
- Stochastic Processes
- Mathematical Programming
- Numerical Analysis
- Magneto Hydrodynamics



The Department admits students under two programmes

The Ph.D programme The Post-Graduate (M.Sc.)

http://nitrkl.ac.in/departments/ma/aboutus.asp

# Department of Mechanical Engneering





The Department of Mechanical Engineering is one of the five primary disciplines established from the inception of NIT, Rourkela in 1961. Over the past 48 fruitful years, the prestigious department has undergone an ascension in bringing about incessant growth in scientific research and imparting world class education to students gearing them to carry forward developments in this evergreen field. The department has always been supported by highly qualified and prolific faculty members with a wide range of expertise in Thermal Engg., Production Engg., and Machine Design.

#### Strength

The department attracts students from all over the country who fight it out through the rigorous examinations of AIEEE and GATE to be part of this well-sought after department. Over 100 students receive their undergraduate and post graduate degrees in Mechanical Engineering every year.

#### On going research

The illustrious faculty members as well as students involve themselves in research which leads to a good number of high quality research papers being published in reputed national and international journals. Keeping in pace with recent developments many unexplored and frontier areas are being pursued as research topics and also the curriculum has always been ameliorated to incorporate the latest topics in the relevant courses.

#### Industry interface/industry collaboration

Being aptly located in Rourkela there has been a close scientific and technical relationship with Rourkela Steel Plant and other major industrial houses like L&T, OCL Cements, Tata Steel, Tata Refractories Limited, BOCI, NALCO, BARC, Lechler etc. The department has always been preferred to carry out Government and industry sponsored projects. Many faculty members of the department are involved in major industrial consultancy. Industry-Institute interaction has become a part of life.

#### M.Tech & Ph.D

The department offers M.Tech courses and Ph.D. programs and is a recognized centre for Quality Improvement Programme by Government of India. While specialization in Machine Design, Thermal Engineering, Production Engineering are available for M.Tech. programs, recent developments in frontier areas of Robotics, Cryogenics, Metal Machining and Forming, Industrial

Engineering, Composites, Heat Transfer, CFD, Soft Computing, FEM & other Optimization tools are taken up by the research scholars for their Ph.D. programs.



http://nitrkl.ac.in/departments/me/aboutus.asp

# Department of Metallurgical & Materials Engineering



Established in 1964, the department has grown to be a nerve centre for research and education. The department has been innately associated with the steel city, Rourkela throughout its history. With time, the department has grown noticeably and established new areas of research and teaching in materials engineering, while retaining its strength in traditional areas in metallurgy. The department attracts highly qualified faculty members, who have received their PhDs from various prestigious institutions.

## Ongoing research

The department carries out original research of significance and technology development such as on process metallurgy, phase transformation, mechanical characterization, fracture mechanics, advanced materials, composite materials, nano materials etc. This department is known for its diversified research interest. A number of sponsored projects are being undertaken by this department to strengthen its research work. A good number of research papers are published every year by the students as well as the faculty members in peer reviewed international and national journals. Number of such technical papers in last five years is around 71.



## Industry interface/Industry collaborations

The department is actively pursuing research by inviting experts from many nearby industries such as Rourkela Steel Plant (RSP), Tata Steels, Dalmia Research Institute and Orissa Cement Ltd. (Rajgangpur) etc. Reasonable number of consultancy projects is being carried out by the department.

#### M.Tech and Ph. D

The department offers both undergraduate (BTech) and postgraduate (M.Tech and Ph D) programmes. The undergraduate programme is aimed at providing a basic understanding of different areas of metallurgical and materials engineering and to cater quality engineers to the top industries of the country. Students also undertake studies of their special interests through departmental elective courses and project work. The post graduation programme is aimed at providing an in depth study in the area of specialization of the student in terms of project work.

# Department of Mining Engineering



stablished in the year 1979, the Department of Mining Engineering has evolved gradually into a school for academics, scientific research and cutting edge technologies. The department has well qualified and experienced faculties in the area of Rock Mechanics, Mine Environment, Fly ash Management, Mining Methods, Mine Fire and Spontaneous Heating, etc.

## Strengths

The department draws in students chosen through a highly rigorous examination - the All India Engineering Entrance Examination (AIEEE). About 30 students receive their undergraduate degrees in Mining Engineering every year.

## Ongoing research and research papers published / cutting edge technologies used

A good number of research papers are published every year by both the students as well as the faculty members stretching over a wide range of innovative topics concerning both the industry as well as the academia. Every year about 10 high quality referred research papers are published by the department. Keeping in pace with the recent developments, a number of frontier areas of Mining Technology are being pursued as research topics in the department and a couple of advanced technology courses are also being taught in undergraduate levels.

## Industry interface / Industry collaborations

The department is actively pursuing research inviting industry experts from Singareni Collieries Company Limited, Mahanadi Coalfields Limited, South Eastern Coalfields Limited, Western Coalfields Limited, Ferro Alloys Corporation, etc. To strengthen the research work further, a good number of sponsored projects are being pursued by the faculty members. A number of study tours and camps are also conducted for the mining engineering students every year for better understanding of the mining industry.



http://nitrkl.ac.in/departments/mi/aboutus.asp

#### M. Tech and Ph. D.

The Department offers M. Tech. Course with specialization in Mining Engineering. Quite a good number of doctoral students are also enrolled in the research work leading to their Ph. D. degree. In house training / Technology Exchange Program/ Workshop on strata control cell. Industry-oriented courses were conducted on "Geo mechanics Instrumentation" at Western Coalfields Limited Nagpur, Mahanadi Coalfields Limited Orient Area, Singareni Collieries Company Limited Ramagundam and South Eastern Coalfields Limited Bilaspur. About 200 Mining Engineers were trained during 2008 in the above technology exchange programs in view of statutory requirement of SRATA CONTROL CELLs to be established in all the coal mining areas as per the Indian Mining Law.

# Department of **Physics**



The Department of Physics is the second P.G. center in the State of Orissa. The general performance of the students has been very commendable. Our P.G students are scattered in various positions in both private and public sectors including the education Dept. of Govt. of Orissa, Rourkela Steel Plant, Indian Navy, Post and Telegraph, ISRO, Hindustan Steel Ltd., Defence Organizations, various software companies like Infosys, CTS, Microsoft, PCS, Satyam, IBM and other Organizations. The Laboratory facility of the department is comparable to other modern laboratories and Institute. Other than fundamental CourseslikeQuantumMechanics, ClassicalMechanics, Electrodynamics, SolidstatePhysics etc., we offer elective courses in the field of theoretical and Experimental condensed matter Physics, Electronics, X-Rays, Material Science etc. Students from this department get fellowships from national level Institutes, R & D and some overseas fellowships.

#### **Courses Offered**

- Statistics and Computer Programming
- Numerical Analysis and Computer Programming
- Fluid Dynamics
- Partial Differential Equation
- Operations Research
- Algebraic Topology
- X-ray and Spectroscopy
- Statistical Mechanics
- Electronics
- X-Ray
- X-ray and Condensed Matter
- Materials Science



# Department of Chemistry



The Department of Chemistry imparts teaching to undergraduate students across all streams in the 1st semester for both theory & sessional , environmental studies to 2nd semester and physical & organic chemistry to fourth semester Chemical Engineering students. The M.Sc students of the department after getting their degrees are serving in various private, public sector undertaking, multinational companies and educational institutes in different positions. The department is engaged in research work in organic chemistry, inorganic Chemistry and environmental chemistry. All the laboratories of the department are well equipped with sophisticated equipment which include FTIR, UV Visible Spectrophotometer, Flame Photo meter, Water analysis Kit, Auto titrator, TLC, Paper Chromatograph, HPLC, Vacuum Evaporator, BOD Incubator, Ion Analyser, CHNS Analyser, Melting Point Apparatus, Prespertic Pumps etc. The students of the department are getting sufficient training which makes them fit for all prospective employers.

#### Courses Offered

- Inorganic Chemistry
- Organic Chemistry
- Physical Chemistry
- Group Theory and Molecular Orbital Theory
- Natural products and Pericyclic reactions
- Instrumental Methods of Analysis
- Environmental Chemistry

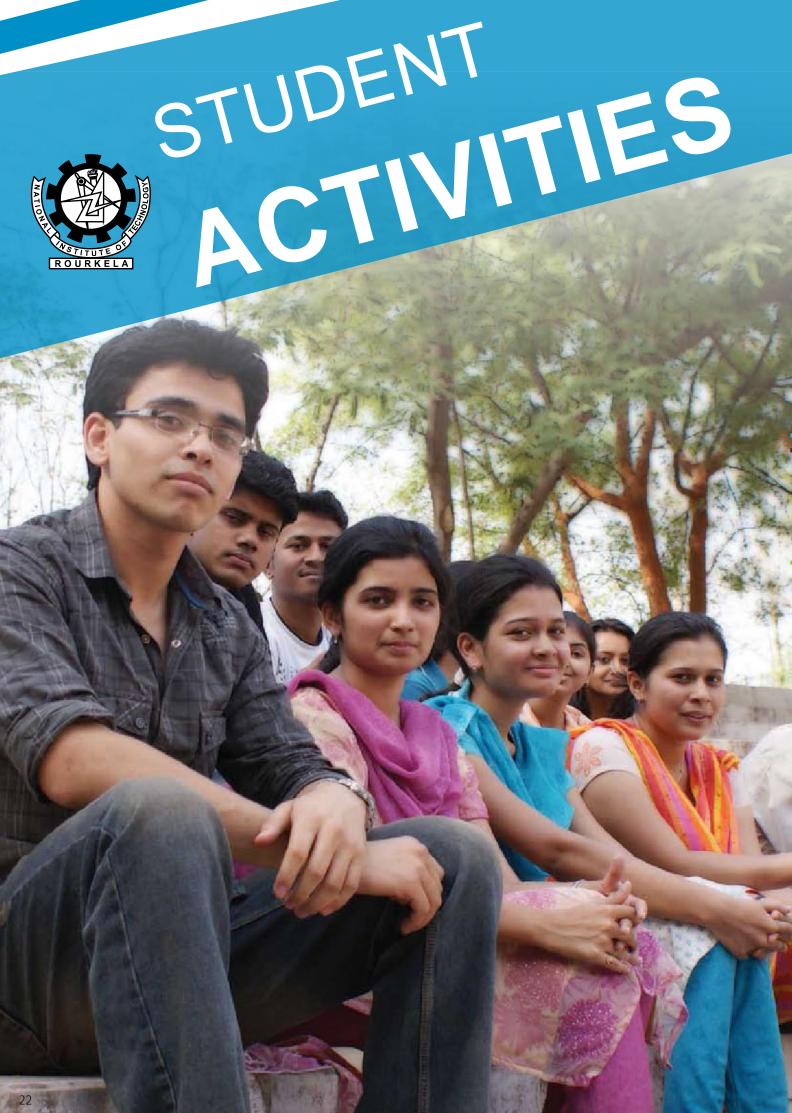
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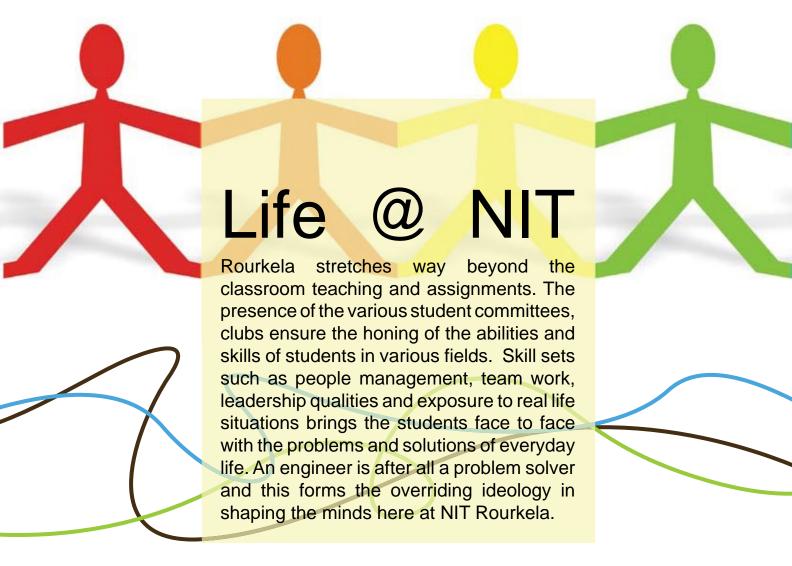


The undergraduate courses taught by the faculty members aim at enhancing students communication and management skills to enable them to become successful and effective in the workplace. It is widely recognized today that technical expertise alone does not determine one's success at work and life in general. Thus, training the students in the requisite soft skills constitute one of the primary concerns of the Department. To meet the growing market demand a state-of-the art Multimedia Digital Language Laboratory with Computer Assisted Language Learning (CALL) facilities is being set up in the Department to develop the English language of the students.

The Department of Humanities & Social Sciences has been functioning as a full-fledged Department since the inception of the institute catering primarily to the education of undergraduate engineering students. Interdisciplinary in orientation, the Department presently has expertise in four disciplines, English, Psychology, Economics and Sociology. It is an established fact that a total science and technology education should include language, economics, social and behavioral sciences where the learner unites application of scientific principles along with human, moral and social understanding. The Department, therefore, right from the beginning has been sharing the Institute's responsibility of building holistic technocrats.

http://nitrkl.ac.in/departments/hs/aboutus.asp





# **CLUBS** AND **COMMITTEES** ON THE **CAMPUS**

#### Rotaract, Leo and Aasra

The Rotaract and Leo clubs are immediate extrapolations of parent organizations, Rotary and Lions Club Intl respectively aimed at fulfilling the needs and objectives of their parent organizations with a slightly different approach. These clubs are designed to bring the students face to face with basic problems that people face all over the country. These clubs work with a number of NGOs helping them out on fund-raising issues, helping them in working effectively and in promoting the idea of humanitarian relief.

Aasra was formed as a direct extension of the desire of the students to contribute and give back to the society. The humanitarian work carried out by these organizations span across varied areas from providing computer based education skill sets to special children to cleaning up the streets of Rourkela to teaching the underprivileged students of nearby slums.

## **CII** Young **Indians**

Yi is a group comprising young Indian entrepreneurs, businessmen, managers and professionals who unite under one roof with the objective of creating a better future for the Indian youth and to bridge the gap between the different sections of society. The focus areas of YiNet include economy, education, environment, healthcare, youth affairs and employment. Some of the unique movements launched by YiNet across the country are fundraising events for developmental projects, rural education, AIDS awareness work and several others.

#### **U**daan

Udaan is a launching pad for the aerodynamically inclined minds of NIT Rourkela. Formed and managed wholly by the students, Udaan conducts numerous workshops and carries out activities in aeromodeling, robotics and other related areas. The primary emphasis of the club is to take learning beyond classrooms and to provide a platform and a learning ground for everybody interested in flying machines.

#### **Cyber**soft

The Cybersoft club acts as the institute's R&D centre when it comes to planning and implementing any computer software related activity. The club serves as a think tank and is primarily involved in effective management of the institute resources and is involved in a

number of other IT planning and management activities being implemented for the benefit of students and the faculty.

#### **IEEE** Student Chapter

IEEE (Institute of Electrical and Electronics Engineers, Inc.) is the world's leading professional association for the advancement of technology. It has more than 375,000 members including nearly 80,000 student members in 1616 student chapters and branches in colleges

of more than 160 countries. More than 1.7 million documents populate the IEEE/IET Electronic Library. With a membership base of over 170 students spread across first year to final year, the club is amongst the biggest IEEE student chapters in the eastern region of the country. In a short span of time, the chapter has conducted a number of workshops on diverse fields like VLSI, GSM Technology, MATLAB software and FLASH animation among others. Members have availed the opportunity to pursue their specific scientific interests by enrolling in learner groups exclusive to a field. Many such workshops and seminars on important upcoming trends are also in the pipeline. The chapter intends to put up a strong presence at technical festivals across India by imparting relevant know-how to its members.



## Society of Automotive Engineering (SAE)

The SAE collegiate club at NIT Rourkela is the first of its kind in Orissa promising to combine research, development, design, manufacture and utilization of vehicles which operate on land, water, air and space. The annual activities of the club include guest lectures by eminent personalities of national stature, conducting workshops, paper presentations, organizing

designing competitions, organizing industrial visits for students to experience and learn the actual methods and means used in industries and research for innovative solutions to public problems.

#### **Industry Sponsored** Clubs

The Sun club and Microsoft club, established by SUN Microsystems and Microsoft India are unique initiatives to build better industrystudents interface. The activities taken up by

these clubs allows the members to work on the problems and solutions handled by the professionals in both these companies. The idea is not only to make the students a part of the processes carried out but also nurture the talents and provide better exposure with the current problems and nature of work handled by these organizations.

Apart from these clubs a number of other organizations function under one roof- SAC (student Activity Centre). A number of other activities are carried out by the SAC and its satellite clubs. The major ones being the organization of the Technical festival Confluence and the cultural festival NITRUtsav. These flagship events attract thousands of participants from all over the country.



# NEWS LETTERS AND MAGAZINES

#### **Monday** morning

Monday morning is the local e-newsletter published every Monday, Monday morning brings in the latest news, views and happenings. The newsletter also provides a platform for the interaction of the administration and the students and moreover helps the alumni stay in touch with the latest happenings at NIT Rourkela.

## Degree 361 (Institute Magazine)

Published bi-annually, Degree 361 is the student magazine established and managed wholly by the students of NIT Rourkela. Degre 361 provides a perfect breeding ground for students to not just exhibit their literary talents but also acts a medium that connects the students and the administration. Every issue, the magazine invites stalwarts from various positions to contribute write-ups on a plethora of topics. Contributors include the popular columnist Jug Suraiya and resident editor of The Economic Times, T.K.Arun.







#### Confluence

The technical festival Confluence is about the direct application of fundamentals and theoretical know-how learnt in the classrooms. Every year the event plays host to workshops, lectures conducted by the best in the industry and academia, paper presentation competitions and various other events ,all aimed at testing the technical acumen of the students. Confluence is about taking one step ahead of classroom teaching and to bring students face to face with the real –life problems, where the impetus does not lie just on knowing the right things but on doing them.

#### NITRUtsav,

NITRUTSAV, has been a perennial feature of the city of Rourkela poised in its own unique way between the pedestals of Industry and civilsation. NITRutsav is a celebration of the human spirit, thoughts and ideas. The thousands of people that are drawn in by some of the biggest celebrities and crowd pullers makes NITRutsav one of the biggest cultural events in the eastern region. Celebrities invited include singers Kailash Kher, Kunal Ganjawala, Pakistani band Jal, Indo-fusion band Euphoria and a number of other Rock bands such as Pentagram.

# Placement Statistics

Year after year, the placements at NIT Rourkela keep getting better and better. Even when the rest of the country grapples hard to come to terms with the economic crisis, the students of NIT Rourkela continue to get placed in the best organizations, all over the country. The placements records serve as a testament to the abilities and potential of the students of NIT Rourkela.

Table 1 Sector wise break up review for the outgoing batch 2007-08

Sector		No. of positions offered
IT/ITES		321
Energy/Power distribution		41
Automotive		25
Core engineering/ construction/scientific research		55
Consumer electronics/general consultancy		13
Metals/Steel production		21
Oil refinery/extraction		07
Mining engineering		16
Telecommunication/Communication networks		27
Others		28
	TOTAL	554

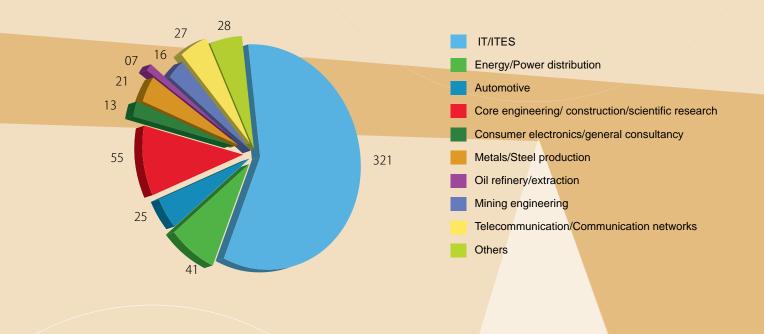
Table 2 Sector wise break up review for the outgoing batch 2008-09

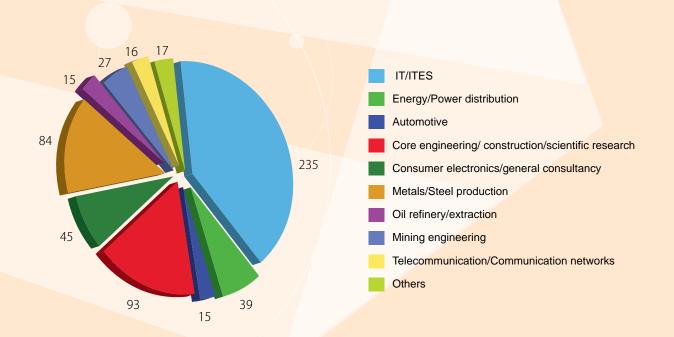
Sector		No. of positions offered	
IT/ITES		235	
Energy/Power distribution		39	
Automotive		15	
Core engineering/ scientific research		93	
Consumer electronics / general consultancy		45	
Metals/Steel production		84	
Oil refinery/extraction		15	
Mining engineering		27	
Telecommunications/communication networks		16	
Others		17	
	TOTAL	586	

## Brand NIT Rourkela

The positions offered to the graduates of NIT Rourkela by the leading global giants goes out to prove the mettle of the students and also adds value to the degree offered by NIT Rourkela. The growing significance of a degree from NIT Rourkela is exemplified by the trust and confidence displayed by these organizations. The process saw the participation of over 50 firms, with a significant portion (*over 65%*) getting placed in the first two months of the placement schedule. In spite of the market's unhealthy circumstances, NIT Rourkela recorded a new high in the number of positions offered. The numbers shot up from 554 job offers to 586 job offers.

The following **Pie-graph** show the sector-wise breakup of the placement statistics recorded over the last two years.





# Our Prominent Alumni

The distinguished alumni of NIT Rourkela, continue to be the torchbearers, our source of inspiration and support. Their achievements add direct value and recognition to our degrees. Some of our prominent alumni are

Chandra Prakash Gurnani President, Tech Mahindra

1981, Chemical Engg.

Debendra Kumar Das Prof. of Mechanical Engineering, University of Alaska Fairbanks

1972, Mechanical Engg.

Damodar Acharya Director, IIT Kharagpur

1970, Mechanical Engg.

Kintala Chandra Mohan Rao Director, Motorola India R & D

1970, Electrical Engg.

N.R.Mohanty Chairman and Managing director of Textron India Pvt. Ltd and

Padma Bhushan awardee, Ex-chairman and CEO, HAL

1969, Mechanical Engg.

Dr.Prakash Chandra Patnaik Director, Institute for Aerospace Research, Canada

1976, Metallurgy and Material Science Engg.

Dr.Ranjan Kumar Dash Co-founder & Chief Technology Officer of Y-Carbon

1998, Ceramic Engineering.

Dr. Surya Narayan Mohapatra. CEO and Chairman of the Board of Quest Diagnostics Incorporated

1971, Electrical Engg.

Srinivas Duvvuri Director, Strategic Initiatives at Rolls-Royce India Limited

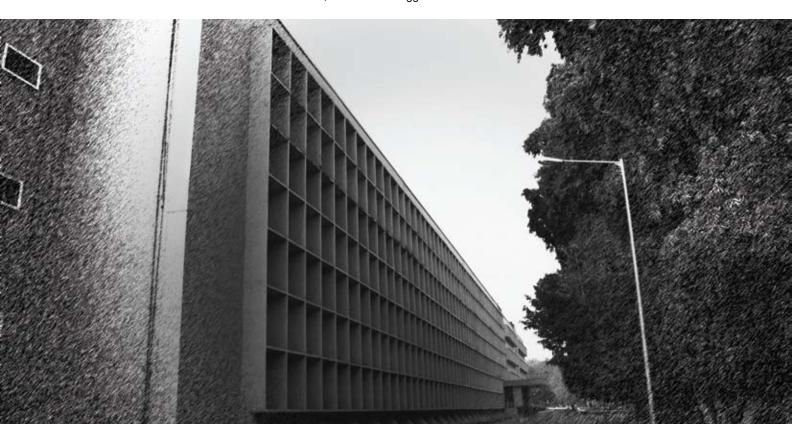
1989, Mechanical Engg.

Sandeep Das CEO, Maxis Telecom

1978, Mechanical Engg.

Vineet Krishan Vohra Director-Financial Markets, Yes Bank

1985, Mechanical Engg.





The placement activities are managed by the Department of Training and Placement. The Department of Training and Placement is headed by a senior faculty member. The department works in close coordination with a student placement committee. The student placement body consists of one member chosen from each department of B.Tech course, one MTech student representative and one representative fromzz MSc. The placement committee corresponds with the prospective recruiters, arranges Pre-placement talks and workshops and provides all the facilities required by the visiting companies.

#### Building a campus presence

NIT Rourkela offers you as a recruiter a number of opportunities to connect with the students on the campus and make your presence felt.

#### Pre-placement Talks (PPTs)

The pre-placement talks are presentations organized by the company on the college campus. Over the years, they have become the primary forums for company-student interaction. These talks give the student a chance to learn more about your company, your people and your work culture. The students can also learn about the opportunities for growth, learning and advancement that your company offers. They can also form a first-hand impression of your company and can make an informed decision about applying for the placements. We have over the years found that senior executives are the most effective in delivering the PPTs and also making a strong statement of commitment to recruiting from this institute. The PPTs can take place on any mutually convenient day. If the company wishes to display some promotional material on campus, the final form of the material can be sent to the Placement Office, which will arrange for its display.

#### Distributing **Published Material**

Annual reports, company brochures, pamphlets and other published material are an effective medium for purveying information about the company. Such material can be sent to the Placement committee, for further distribution amongst the students

#### Sponsoring **Projects/internships**

Projects/internships are an integral part of the academic curriculum at NIT Rourkela. Over the years, many students have taken up projects on various areas of Engineering with different organizations. This provides the students involved a basic understanding of the company's operations. It also raises your companies' profile among students and the faculty.

# Our Recruiters



































































































# How to Reach Rourkela

Location North – West Orissa

Latitude 22° 12 North, 84° 54 East.

Altitude 219 metre above sea level.

#### From Kolkata

Kolkata is about 415 km from Rourkela by train. Being located on the main Howrah – Mumbai route, there are many trains from Howrah. (In Howrah station, always look for the new platforms, No. 18-22.) Trains leaving for Mumbai, Kurla, Pune, Ahmedabad, Koraput pass through Rourkela. It takes between 6 and 8 hours depending on the train. A road journey, which takes 14 to 18 hours via NH – 6 and smaller roads is not advised.

#### From **Bhubaneswar**

About 500 km by rail or road. There are 3 trains at night from Bhubaneswar, two via Sambalpur that go to Hatia and Ranchi and one via Kharagpur that goes to Delhi and beyond. They take between 8 and 11 hours. The road to Bhubaneswar via Sambalpur is good and it takes between 9 and 11 hours to travel.

There is also a small private airline that flies a small aircraft between Bhubaneswar, Rourkela and Barbil on weekdays. Flight time from Bhubaneswar is about 45 minutes.

#### From Ranchi / Hatia

3 hours by train, all in the evening. Journey by road takes between 5 and 8 hours and is not advised.

#### From Delhi, Mumbai, Chennai, Bangalore and Hyderabad

All the above places are connected direct flight to Kolkata or Bhubaneswar and then travelling by train to Rourkela is advisable visitors from Delhi and Mumbai can also travel via Ranchi which is more comfortable because of the shorter train ride. These places are also connected by direct trains to Rourkela.

http://www.indianrail.gov.in







National Institute of Technology, Rourkela

## Please mail your queries to

## HOD (T&P)

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