

INFORMATION BROCHURE 2009

Post graduate Program
MASTER OF TECHNOLOGY - M. Tech.



एन आर टी पाटना
NATIONAL INSTITUTE OF TECHNOLOGY
PATNA

PATNA – 800 005, BIHAR, INDIA
Phone No.: 0612 – 2670631, 2682715, 2687419, 2688715, 2688843, 2691930
Tele fax – 0612- 2670631 Website: www.nitp.ac.in

INSTITUTION CONTACT DETAILS FOR ANY QUERY/ CLARIFICATIONS

Candidates must write on top of the envelope "**Admission to M. Tech Program/ Branch – Civil/ Elect/ Mech. – 2009 - 2010**". Completed application for admission on the prescribed form be sent by Registered post/ Speed post/ Currier service.

The application must reach on or before last date and time for submission of the same to

**The Assistant Registrar (Admission),
Academic Section
National Institute of Technology Patna
Ashok Raj Path
Patna – 800005**

Officers to contact for any clarification at the following Fax/ Telephone Nos.:

Dean, Academic Affairs	Extn. No. 247
Assistant Registrar (Admission)	Extn. No. 207
Program Officer (A&E)	Extn. No. 105

Phone No.: 0612 – 2670631, 2682715, 2687419, 2688715, 2688843, 2691930

Tele fax – 0612- 2670631

Website: www.nitp.ac.in

Important dates for Admission to M. Tech. Program:

S. No.	Description of Admission Activity	Important dates and time
	First Advertisement for M. Tech Admission	June 5, 2009
1.	Application form and Information Brochure Issue of forms commences	June 10, 2009
2.	Last date of Receipt of application	June 29, 2009 till 5.00 pm
3.	Merit list on Institution Notice Board and on Institution Website	July 10, 2009
4.	List of cancelled application(s) details on Institution Website	July 10, 2009
5.	Admission Counseling - I	July 14, 2009
6.	Admission Counseling – II	July 21, 2009
7.	Last date for admission to M. Tech. Program	July 31, 2009
	Academic Activity Details	
8.	Registration in 1 st Semester M. Tech program	July 20 and 21, 2009
9.	Commencement of Classes	July 22, 2009

Important Notice:

- ***NIT Patna will not be responsible for any postal delays in receipt of application.***
- ***All matters of disputes will be subject to legal jurisdictions of relevant courts at Patna only.***
- ***The Institute reserves the right to amend, without any notice any provisions stated in this brochure.***

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VISION

To contribute to India and the World through excellence in scientific and technical education and research; to serve as a valuable resource for industry and society; and to remain a source of pride for all Indians.

MISSION

To generate new knowledge by engaging in cutting-edge research and to promote academic growth by offering state-of-the-art undergraduate, postgraduate and doctoral programmes.

To identify, based on an informed perception of Indian, regional and global needs, areas of specialization upon which the Institute can concentrate.

To undertake collaborative projects which offer opportunities for long-term interaction with academia and industry.

To develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.

VALUE

- *Academic integrity and accountability.*
- *Respect and tolerance for the views of every individual.*
- *Attention to issues of national relevance as well as of global concern.*
- *Breadth of understanding, including knowledge of the human sciences.*
- *Appreciation of intellectual excellence and creativity.*
- *An unfettered spirit of exploring, rationality and enterprise.*

INTRODUCTION

The National Institute of Technology Patna (NITP) is the eighteenth National Institute created, by the Ministry of Human Resources Development, Govt. of India upon rechristening the erstwhile Bihar College of Engineering, Patna. This institute is in the process of achieving the status of a centre of excellence to impart higher training research and development in Science, Engineering & Technology. NIT Patna's humble beginning can be traced to 1886 with the establishment of a pleader's survey training school, subsequently elevated to the Bihar College of Engineering, Patna in 1924 at the present site with the introduction of graduate level engineering curriculum. M. Sc. (Engg.) was introduced in 1978. The institute is fully equipped to take up its role as a **Corporate Body** with powers to decide its own academic policy to conduct its own examination and to award its own degrees.

The institution was declared National Institute of Technology on January 24, 2004 and known as "National Institute of Technology Patna". The institute is an autonomous institution under Ministry of Human Resource Development, Govt. of India under NIT Act - 2007. Prior to the enactment of NIT Act, the institution was attached to Patna University for the purpose of examination and award of degree.

The institute offers admission to Under-graduate program and Post-graduate Programme(s) every academic session on the basis of all India competition. It offers B. Tech. degree of four year duration full time courses in Electrical Engineering (ELE), Mechanical Engineering (MEC), Civil Engineering (CIV), Electronics & Communications Engineering (ECE), Information Technology (ITY), Computer Science & Engineering (CSE), and B. Arch degree of five years duration in Architecture; and M. Tech Degree of two years duration in Electrical Engineering, Mechanical Engineering and Civil Engineering with different specialisations. The activities of the Institute are growing at faster rate towards achievements of Global Standard.

The making of an engineering leader requires sustained intellectual alertness, creativity and talent for innovation which must be continuously nurtured to achieve professional competence. The Institute provides pleasant surroundings with an intellectually stimulating campus to its students. The courses are managed by qualified teachers who rely on direct personal contact to disseminate intensive theoretical and practical knowledge to the students. The existing laboratories are being modernized to meet the aspiration & needs of tomorrow. The existing infrastructures provide a conducive environment with an exciting campus life so necessary for professional growth.

Location

The Institute is situated on the southern bank of river Ganges behind Gandhi Ghat, one of the most important reverence place of Patna. The Institute campus is approximately 8 km from the Patna Junction railway station and 15 km from the Jai Prakash Narayan International Airport, Patna. The entry to the institute is from Ashok Raj Path and it is about 3 KM from Gandhi Maidan. The site map is enclosed for reference

Campus

The Institute campus is spread over 40 acres and a picturesque river view with numerous historic buildings presenting a spectacle of architectural delight and natural beauty. It is partially residential in nature providing residential facilities to some of its students as well as to the faculty and staffs as per availability. Behind the historic administrative building lies the main academic building, which also houses the Civil Engineering Department and the Information Technology departments. A Central Library building at the entrance of the institute has all possible modern facilities including e-resources. The Electrical and Mechanical Engineering Departments face one another about 200 meters west from the Administrative Building. The Department of Architecture, Electronics & Communication, Computer Science & Engg. and Centre for Water Resources Studies are located in separate buildings 300 meter to the east. Several other facilities like large

lecture theatres with modern equipments & amenities, student's activities centre and auditorium are likely to come up very soon.

The institute has play ground where many National level football and cricket matches arranged in the past when Patna had no stadium. The extra curricular activities include facilities for outdoor & indoor games, boating & rowing, open air theatre and availability of the local chapter of SPICMACAY. While banking facility is available in campus, Post-office and shopping centers are in the near vicinity. NIT Patna is the Institutional member of The Indian Society for Technical Education (ISTE), which is devoted to promotion of quality and standards in technical education.

The institute runs seven essential services in the campus namely 24 hours Electric Supply, suitable drinking water, sanitation and maintenance of cleanliness, security arrangements, and ambulance service for medical emergency, EPBX and Internet facilities. The library and all departments are under local area network and share the different academic/ student information database including with e-Library through PCs available in various departments, office, library and other offices.

Under-graduate and Post-graduate Programmes

S. No.	Degree/Program	Branch of Specialization		Duration
Under Graduate Program:				
1	B. Arch	Architecture	ARC	5 year – Full time
2	B. Tech	Civil Engineering	CIV	4 year – Full time
3		Computer Science & Engineering.	CSE	
4		Electronics & Communication Engineering.	ECE	
5		Electrical Engineering.	ELE	
6		Information Technology	ITY	
7		Mechanical Engineering.	MEC	
Post graduate Program:				
1	M. Tech Elect. Engg.	Control System Engineering	CON	2 year – Full time
2		Power System Engineering	POW	
3	M. Tech Civil Engg.	Structural Engineering.	STR	
4		Transportation Engineering.	TRS	
5		Water Resources	WRS	
6	M. Tech Mech. Engg.	Refrigeration, Air-conditioning & Heat Transfer	RAHT	
7		Thermal Turbo Machinery	TTM	

ADMISSION PROCEDURES FOR M. TECH. PROGRAM

The institute offers Post-graduate Program (M.Tech.) under different disciplines and specializations by various Departments. The details of specialization, Minimum Eligibility criterion and Seat distribution under different department are as detailed below.

The duration of M. Tech. full time Programme is four semester (24 months). The course structure for different department/ specialization is placed at Annexure – II for reference.

Institution Level Counselling for seats under different specialisation under different categories of candidates including Sponsored category candidates shall be conducted by the Institute, as per schedule notified in the information brochure for the program. The eligible candidates are required to apply to get admitted to the M. Tech. programmes in the Institution. Applications for admission of candidates through Institute Level Counselling are invited through an advertisement in the leading newspapers and institute website.

Admission for the M. Tech program against sanctioned seats during current session (2009-10) shall be done by the institute based on GATE Score. However admission to the program during next session is proposed to be taken through Centralized Admission Counselling for M. Tech

program of all NIT's in India from next academic session. The detailed criterion for admission based on GATE score shall be as per Central Admission Counselling Committee.

M. Tech. Program – Seats Distribution under different Categories:

Category wise Seats allocation after providing quota as SC-15%, ST- 7.5% & OBC - 18% in Session 2009-10 is detailed below:

S. No.	Department	M. Tech Program/ Specialization	OP	SC	ST	OBC	PH	Sponsored	Total
1	Electrical Engineering	Control System	9	4	2	4	1	3	23
2		Power System	9	4	2	4	1	4	24
3	Civil Engineering	Structural Engineering	9	4	2	4	1	4	24
4		Transportation Engineering	9	4	2	4	1	3	23
5		Water Resources	9	4	2	4	1	3	23
6	Mechanical Engineering	Refrigeration, Air conditioning and Heat Transfer	9	4	2	4	1	3	23
7		Thermal Turbo Machines	9	4	2	4	1	4	24
		Total	63	28	14	28	7	24	164

M. Tech. Specializations, Qualification:

S. No.	Department offering the Program	Program/ Specialization	Disciplines/ branch that are eligible for Admission (In order of preference for admission)	Eligibility Criterion/ Qualification, CGPI/ CGPA, %age Marks etc.
1.	Electrical Engineering	<i>Control System</i>	(i) Electrical Engg, or Electrical & Electronics Engg, (ii) Instrumentation & Control Engg, or Instrumentation Engg. (iii) Electronics & Instrumentation Engg, (iv) Applied Electronics & Instrumentation Engg (v) Electronics & Communication Engg	(a) B. Tech/ B. E./ B.Sc.(Engg) or equivalent such as AMIE/ Grade IETE degree etc. (b) General/ OBC/ Sponsored Category: Minimum 60% marks in aggregate (of all the years/ semesters) or CGPA of 6.75 on a ten point scale. (c) Relaxation in the eligibility criteria to SC/ ST/ PH candidates: minimum 55% Marks in (of all the years/ semesters) or CGPA of 6.25 on a ten point scale may be permitted. (d) Candidates presently in 7 th or 8 th semester/ final year may be considered for admission provided they fulfill above criterion and submit final result before start of academic session.
2.		<i>Power System</i>	(i) Electrical Engg or Electrical & Electronics Engg. (ii) Instrumentation & Control Engg. or Control Engg. (iii) Applied Electronics & Instrumentation Engg	
3.	Civil Engineering	<i>Structural Engg.</i>	Civil Engg	
4.		<i>Transportation Engg.</i>	(i) Civil Engg (ii) Transportation Engg	
5.		<i>Water Resources</i>	Civil Engg	
6.	Mechanical Engineering	<i>Refrigeration, Air conditioning and Heat Transfer</i>	(i) Mechanical Engg., (ii) Automobile Engg., (iii) Aeronautical Engg., (iv) Marine Engg	
7.		<i>Thermal Turbo Machines</i>		

Minimum Eligibility Criteria for Admission:

Admission to Post Graduate program (M. Tech.) will be granted in the Autumn (Odd) semester of each academic session on the basis of the performance at Common all India competitive test known as **Graduate Aptitudes Test in Engineering (GATE)**. The candidate must have

- (i) Passed B. Tech/ B. E. / B. Sc. (Engg) or equivalent examination such as AMIE/ Grade IETE etc. with specialization in relevant branches/ disciplines as specified for different courses.
- (ii) The candidates under different categories must have minimum percentage of marks in aggregate (of all the semesters/ years) or minimum CGPA in 10 point scale (as determined by NIT Patna) in their qualifying examination.
- (iii) Candidates presently in 7th or 8th semester/ final year may also be considered for admission provided they fulfill above criterion and submit final passing result before start of academic session. If the candidates selected for admission fails to submit passing certificate or his/ her percentage marks in aggregate falls below the minimum requirement, then his/ her admission shall stand cancelled.
- (iv) Admission under different categories shall be made in order of preference of discipline/ branch of specialization on GATE Score of the candidate under different specialization.
- (v) The GATE score certificate may be used by the candidate for one time admission only.
- (vi) Merit list of the candidates based on GATE score/ GATE Percentile shall be prepared for grant of admission. Candidate's Inter-se-merit shall be as per preferential order of Branch/ Specialization at B. Tech/ BE program indicated above. The minimum cut of GATE score notified may be revised by the Admission Counselling committee for M. Tech Program.
- (vii) The minimum percentage cut-off of marks/ CGPA in qualifying examination and cut-off GATE Score Percentile for different categories of candidates is detailed below:

<i>Category of candidate</i>	<i>Minimum % Marks in aggregate/ CGPA (In ten point Scale) in Qualifying Examination</i>	<i>Minimum GATE Score Percentile</i>
General	60% in Aggregate/ CGPA: 6.75	85
OBC	60% in Aggregate / CGPA: 6.75	As per direction of MHRD, Govt. of India
Sponsored	60% in Aggregate / CGPA: 6.75	85 (if GATE Score is available), else based on interview and/ or written test
SC/ ST/ PH	55% in Aggregate / CGPA: 6.25	60

Reservation of Seats

At present reservation to SC candidates is 15% and for ST students is 7.5% of the total seats. However, reservation for SC/ ST and Physically handicapped (PH) categories of candidate will be applicable as per Govt. of India existing rules or amended from time to time.

Reservation of seats for candidates under OBC category is being implemented as per the direction of MHRD and Hon'ble Supreme Court orders. The Institute has planned to implement OBC reservation in three phases, i.e. Phase – I: 9% in session 2008-09, Phase – II: 18% in 2009-10 and Phase – III: 27% in session 2010-11.

The candidates claiming reservation under OBC Category are required to produce certificates as per provisions of the OBC Reservation for verification at the time of admission. The OBC candidates are required to produce certificate issued by competent authority stating that his/ her parent's income is below Rs. 2.5 lacs per annum and they (Parents) do not belong to service group as per provisions of creamy layer defined by the Govt. of India and Hon'ble Supreme court orders with respect to OBC reservation.

OBC/ SC/ ST and PH candidates will be required to produce Original certificate issued by competent authority (SDO/ DC/ DM) at the time of counseling, failing which they will not be considered for admission under that category.

The sponsored candidates from industry/ Institution/ organizations of repute (as decided by NIT Patna) shall get preference against seats allocated under General/ Sponsored category for different specialization of the M. Tech program.

If suitable candidate from Sponsored Category is not available as per merit list for admission or after written test and/ or interview of the candidates no suitable candidate is found for admission, then unfilled seats from sponsored category shall be transferred to general category.

Any change amendment with respect to reservation shall be informed through Institutional website as and when Government orders for the same are issued.

Medical Examination

It is expected that all full time candidates (except employed) will have good general physique. He/ She will have to produce on the date of Central Registration certificate to that effect in the prescribed format (copy to be given along with the admission offer letter). The admission is subject to his/her being found medically fit. **In the case of PH candidates' minimum disability should be 40%.**

FULL TIME SPONSORED CANDIDATES

The institute admits sponsored candidates working in Public Sector Undertakings, Private Ltd. Company or Government Departments or Research/ Development organizations /Educational Institute. Four seats from the general category has been allocated, for sponsored category students in each specialization under different department. Fee structure shall be different for students admitted under this category, and no scholarship shall be payable to such candidates, if they have not been admitted on GATE Score.

The sponsored candidates desirous for admission on the basis of CGPA/ percentage of marks in qualifying examination is required to appear for written test and interview before the selection committee constituted for the purpose, if found suitable then admission is granted.

The admission of Sponsored candidate will be made in order of merit basis in which 70% weightage will be given for qualifying examination marks and 30 percent for performance in written test and/ or interview.

If any sponsored candidate has valid GATE Score then he/ she may be admitted on the basis of GATE Score along with other non-sponsored candidates. However sponsored candidate without GATE Score must fulfill minimum eligibility criterion and must have

- (i) Minimum two years experience as on 1st August 2008 from an organization as stated above.
- (ii) Sponsorship certificate needs to be submitted at the time of Interview for admission. "**Sponsorship Certificate**" issued by the employer on their organization's Letter Head, in following format with the application form.

Fee Payable at the Time of Admission

As per detailed fee structure for M. Tech. program above, the candidate admitted in any discipline/ specialization is required to deposit Tuition fee and Development fee as detailed above. The balance fee shall be payable at the time of registration to the program

- **Rs. 20300/-** for full time (GATE Score) candidate.
- **Rs. 25,300/-** for full time Sponsored candidate.

Candidates admitted through Institution level counseling are exempted from payment of Admission Processing fee.

Refund of Fees

In case any candidate cancels his/her admission or withdraws from the program before the closing date of admission, then fee shall be refunded after deducting Rs. 1000/- as processing fee.

No refund of fees shall be admissible/ permissible to candidate, if he/ she withdraw/ cancelled his/ her admission after last date of admission or after registration to the programme. In such cases, only caution money shall be refunded after submission of No Dues from different departments at the end of the semester.

Registration for the Program/ Semester

All students are required to report for Orientation and Central Registration before the commencement of each semester according to the schedule/procedure notified in advance. The students register themselves for the courses in consultation with the Course Coordinator. The curricula, course structure and course under different specialization including rules governing their academic duties and performance are made known to the students advance by the department(s). In some departments the required performance levels may be higher than those given in the Prospectus. The admitted students must acquire a copy of the departmental norms in such cases.

FEE & OTHER CHARGES FOR M. TECH. PROGRAMS

S. No.	Details of fee under different Heads of a/c	Amount (in Rs.)		
		To be paid as per periodicity indicated		Remarks
		<i>M. Tech (With GATE Score)</i>	<i>M. Tech (Sponsored)</i>	
1.	Tuition Fee	5000	10000	Per Semester
2.	Development Fee	10000	10000	One Time
3.	Examination Fee	650	650	Per Semester
4.	Students Activity fee	1000	1000	Per annum @
5.	Medical Fee	300	300	Per annum @
6.	Identity Card Fee	100	100	One Time
7.	Caution Money (Refundable)	2000	2000	Onetime on admission
8.	Registration Fee	500	500	Per Semester
9.	Admission Processing Fee	500	500	One time at the time of Admission
10.	Course Curricula for M. Tech Program	250	250	One time at the time of Admission
11.		20300	25300	

@ - To be paid in Odd semester.

Note: SC/ ST Students are required to apply for financial assistance/ scholarship and/ or reimbursement of fee deposited at the Institute from Department of Welfare and Empowerment of respective State Government to which they belong.

GENERAL GUIDELINES & IMPORTANT INSTRUCTIONS REGARDING SUBMISSION OF APPLICATION:

The selection for all categories of students and for different specialization/ seats is done by the institution through Institution Level Counselling organized centrally. Candidates are required to apply for M. Tech program on prescribed application.

1. The application form is available on Institution website www.nitp.ac.in may be downloaded.
2. Separate application form should be used for each Department and Specialization.
3. The applicant while applying for admission to M. Tech programme of a particular department may, give any number of options/ preferences for the M. Tech Programmes available in that department. However, he/she will be considered only for two options for which he/ she is eligible in the order of preference given. In case a candidate is found to have filled more than one form and each such form contains different order of preferences for a particular department the decision of the department/ admission committee in accepting and/or rejecting any one or more of the forms will be final.
4. The minimum eligibility criteria indicated above for each programme is only an enabling clause. The Department may fix higher criteria at the time of short listing keeping in view the number of candidates etc. The applications will be scrutinized by the admission committee/ Academic Section. The Academic Section will call an adequate number of eligible candidates for selection of the candidate.
5. The selection of Physically Handicapped candidates will be held centrally as per rules and direction of Govt. of India.
6. Application incomplete, in any respect, is liable to be rejected. The decision of the admission committee in this respect shall be final.
7. No column should be left blank. Write not applicable against a column if the same does not apply to you.
8. Tick () the relevant box wherever provided.
9. No TA/ DA will be paid to the candidates coming for M. Tech admission or to attend written test/ interview.
10. **Sponsored candidates must submit NOC/ Sponsorship Certificate from their employer at the time of interview.**
11. **Filling of false information will lead to Cancellation of Admission.**
12. **Admission Application Fee must accompany Bank draft of Rs. 500/- for General/ OBC Category and Rs. 300/- for SC/ ST/ PH category in favour of "NATIONAL INSTITUTE OF TECHNOLOGY PATNA" payable at Patna.**
13. The Bank draft No and date of issue must be mentioned by the candidate in the appropriate column while submitting the completed application form.
14. Candidate must write on top of the envelope "**Admission to M. Tech Program/ Branch – Civil/ Elect/ Mech. - 2008**" and be sent by Registered post/ Speed post/ Courier service. The filled in application form with self attested photocopies of the relevant documents.
15. **Application for admission must reach to The Assistant Registrar (Admission), Academic Section, National Institute of Technology Patna, Patna – 800005 by last date as notified.**
16. **Application for admission shall not be received by hand or at Institution Counter.**
17. National Institute of Technology Patna reserves the right to make any change in any provisions declared in this information procedure. In case Ministry of Human Resource

Development, Govt. of India or any other Competent Authority makes any changes in the admission procedure/ reservation policy or any other matter related to admission shall be binding on all and shall be applicable with effect from the approval of the senate and BOG of NIT Patna.

18. Self attested Photocopies of following documents must be enclosed and Original Certificates/ Documents must be produced at the time of admission for verification : -

(i)	Demand Draft for Admission/ Application Fee of amount as per information Brochure	Must be submitted with application form
(ii)	GATE Score/ Rank Card	
(iii)	Certificate of Category (OBC/ SC / ST/ PH), if applicable, Issued by the competent authority	
(iv)	Income certificate for OBC candidates stating the Candidate's Parent do not belong to Creamy Layer as per directive of the MHRD	
(v)	Certificate for Physically handicapped	
(vi)	Qualifying Examination Marks Sheet/ Grade Card	
(vii)	Four Photographs identical to the one Pasted on the application form	Must be submitted at the time of admission Counselling
(viii)	Class X (High School) Board Certificate as proof of date of birth	
(ix)	Qualifying Examination Passing Certificate	
(x)	Migration Certificate from the University/ Deemed University/ Institute Last attended	
(xi)	Tuition fee and Development fee Demand Draft as per information Brochure	

FINANCIAL ASSISTANCE TO M. Tech. STUDENTS

A scheme for the award of Teaching/ Research Assistantship for providing financial assistance to the students exists. In terms of this scheme, students admitted to M. Tech. Programmes on full-time basis are considered for the award of 'Half-time' Research/ Teaching Assistantship under the AICTE norms provided the fund is granted by AICTE for the purpose. The maximum duration for which this Assistantship can be awarded to M. Tech is 4 semesters. In return, the student renders 8 hours per week of assistance outside his normal academic work as assigned by the Department. In addition they are given contingency grant provided the fund is granted by AICTE in accordance with the Institute rules. ONLY FULL-TIME (OTHER THAN SPONSORED STUDENTS) WHO HAVE QUALIFIED GATE ARE ELIGIBLE FOR ASSISTANTSHIP. In the first instance the Assistantship is awarded only for one semester. Thereafter, continuation of the Assistantship during each semester is contingent upon satisfactory academic performance and satisfactory performance in the discharge of responsibilities assigned under the scheme. For this purpose an SGPA of not less than 7.00 (6.75 in the case of SC/ ST/ PH) at the end of the semester is treated as satisfactory academic performance.

HOSTEL ACCOMMODATION

The Institute has limited number of seats in three boys' hostels and one girls' hostel. Each hostel is self-contained with amenities such as a reading room, an indoor games room, a lounge and a dining hall with mess.

Due to limited seats in hostels at present hostel accommodation to M. Tech students are not provided. Therefore, candidates admitted are required to make their own boarding and lodging arrangement. Room and seats on rent/ shared accommodations near to the Institute are available for the students.

CIVIL ENGINEERING DEPARTMENT

Civil Engineering Department is one of the oldest departments of NIT, Patna. This department was found at the inception of the Bihar College of Engineering, which has now been reconstituted as NIT, Patna. The department offers undergraduate degree as well as Masters degree. The master's degree is given in the specializations on Structural Engineering, Transportation Engineering and Water Resources Engineering. It also has a separate center known as Center for Water Resources Studies, which is well known for its research and development in the field of Water Resources Engineering.

The department has Mechanics, Material Testing, Concrete, Water Resources, Hydraulics, Fluid Mechanics, Environmental Engineering and Surveying Laboratories with all latest equipment need for research and development.

Civil Engineering Department keeps a close interaction with the industry and also provides key consultancies to various government and private organization across the country and has a corpus fund of above one crore from this activity alone.

Civil Engineering Department keeps a close interaction with the industry and also provides key consultancies to various government and private organization across the country and has a corpus fund of above one crore from this activity alone. The department generates fund of approx. Rs. 5.0 lakhs per month from non-routine testing and consultancy projects for the institute.

The students of CE Department get placement in companies such as RITES, Gammon India Ltd., IRCON, Punj Lloyd, EIL etc.

Lab Infrastructure:

Name of Lab	List of Major Equipment/ Computers/ Software
Concrete Lab	Compression Testing Machine, Brick Testing Machine, Flexure Testing, Soundness, Machines used for Mix Design etc.
Material Testing Lab	Universal Testing Machine, Hardness, Impact, Torsion Testing Machine, Deflection Measurement etc.
Mechanics Lab	Differential Pulley Block, Worm Wheel, Screw Jack, MI, Reaction at Support etc.
Fluid Mechanics and Hydraulics Lab	Hydraulic Bench for flow visualization, orifice meter, venturimeter, Pelton Turbine, Various types of Pumps and Turbine, Viscometer etc.
Transportation Lab	Ben Kelman Beam, Bump integrator, axial load survey, Marshal Stability Test Apparatus, CBR, Field Moisture Density Equipment etc.
Environmental Engineering Lab	Ion Analyzer, AAS, BOD Incubator, Muffle Furnace, Oven, Centrifuge etc.
Soil Mechanics and Foundation Engineering Lab	CBR, Triaxial Testing Apparatus, Direct Shear Test Apparatus, Hydrometer etc.
Geology Lab	Collection of Rock Samples
Surveying Lab	Total Station, Theodolite, Dumpy level etc.
Water Resources Lab	Complete Weather Station, Hydraulic Jump and Hump, etc

Projects and Dissertation:

- Up gradation of Soil Mechanics Lab (Sponsored);
- Water Quality Test Lab Project (Sponsored);
- BRNS Project (Sponsored): "Development of Integrated Software for Design Basis Flood for a Nuclear Power Project Site".
- Over 60 M. Tech. and over 10 Ph.D. Dissertations have been successfully completed by Civil Engineering Department.

On going Research Projects:

- *Stability Analysis considering effects in static and dynamic condition for earth dams including instrumentation*, Y.P. Singh under Dr. K.S.P. Singh
- *“Environmental impact of rives Ganga in State of Bihar with special emphasis to effects near Patna Town”*, A. Singh under Dr. K.S.P. Singh.
- *“Earthquake Resistant Design of Concrete Gravity dam”*, Chandrashekhar Singh under Dr. V. Singh
- *“Rainfall Runoff Modeling”*, Amit Kumar Sinha under Dr. V. Singh.
- *“Integrated water resources management of humid alluvial plains: Case study of Bagmati Basin Complex”*, Ashok Kumar under Dr. T. Prasad.
- *“Optimum Concrete Pavement Concrete Mix Design”*, Kumari Anima under Dr. U.K. Srivastava.
- *“Optimization of Road Network of Patna Urban Area fro 2020 AD”*, Md. Abdullah Sharif under Prof. E.A. Quadri.
- *“Integrated Water Resources Management for Regional Economic Development”*, Rajesh Gupta under Dr. L.B. Roy
- *“Suitability Analysis of Bitumen vis-à-vis Strength criteria of Bitumen Mixes based on Tri-axial Test/ Marshall Stability Test at atmospheric Temp conditions.”*, Rajeev Kumar under Dr. S. Kumar.
- *“Needs and strategies for participatory irrigation management in Bihar”*, I.C. Thakur under Dr. L.B. Roy
- *“Finite Element Analysis of R.C. Structural Members”*, P.N. Thakur under Dr. S.K. Sinha.
- *“Land use transportation model for medium size cities (A case study of Patna Town)*, Malti Srivastava under Dr. S. Kumar.
- *“Bi-axial RCC Columns”*, Baboo Rai under Dr. S.K. Sinha

DEPARTMENT OF MECHANICAL ENGINEERING

Department of Mechanical Engineering of NIT Patna (erstwhile B.C.E. Patna) started in 1948 with undergraduate programme. Post graduate programme in Mechanical Engineering was started in 1978 with specialization in “Thermal Turbomachines” and “Refrigeration, Air-conditioning and Heat Transfer”. At UG level yearly system was followed while in PG programme, semester system was followed. Before 2007-08, for undergraduate programme B.Sc. Engg. degree and for Post Graduate programme M.Sc. Engg. degree were awarded to students by Patna University. Ph.D. programme are also running but presently it is on part time basis. Now onwards from 2007-08 regular Ph.D. programme will run in the Department. From the academic year 2007-08 department is going to follow semester system and degree will be awarded at UG and PG level in B. Tech. and M. Tech. respectively department is well equipped with the adequate facilities for teaching of fundamentals as well as for carrying out research activity. The department has dedicated and able faculty who are capable of taking up any type of research and developmental work.

The department has well equipped Refrigeration and Air conditioning, Heat Transfer, Dynamics of Machinery and Control & measurement lab. The department has all modern facility for CAD/CAM application and separate Metrology Lab.

Department of Mechanical Engineering is actively involved in interaction with public and private sector industry/ Institutions such as BRENDA, IE(India), Patna University Industrial Safety Management course etc.

DEPARTMENT OF ELECTRICAL ENGINEERING

The Department of Electrical Engineering was established in 1945 under Patna University with an intake of 30 students leading to Bachelor of Engineering degree of four year duration. The four year course was later changed to five year integrated course in 1960 and it continued up to 1972. Again four year course was introduced in 1972 with the same intake capacity of 30 students. The intake was increased from 30 to 40 students in 2005-06 session and further in 2006-07 the intake capacity has been increased to 60 students.

In the year 1978 AICTE approved Post Graduate (PG) course leading to M. Sc. (Engg) Degree in two specializations: (i) Power System Engineering and (ii) Control System Engineering with an intake capacity of 10 in each specialization. The intake in PG program was further increased to 18 students per specialization in 2004-05.

The Microprocessor Laboratory and Power electronics laboratory were setup to meet the requirement of course curriculum and research activity. The advancement and application of electronics and microcomputer in the field of electrical engineering, necessitated a major revision of the syllabus for the UG program in 1977. A course in Microprocessor was introduced along with many subjects in electronics leading to orientation required for the modern technology, such as Analog Electronics, Digital Electronics, Introduction to Communication and Digital Signal Processing.

The laboratory under this department includes Electrical Machines, Basic Electrical Engg., Network Theory, Signals & System, Instrumentation, High Voltage Engg., Microprocessor, Switchgear & protection labs. All labs are equipped with machines and instruments to meet the requirement of UG and PG course Curriculum as well as research & development work being under taken by students and faculty.

The department has a Computer Lab with all hardware and software facilities to meet the requirements of system modeling and analog and digital circuit simulation. The department has ORCAD software for simulation, PCB layout, MatLab software for modeling, simulation of signals and systems and ETAP for study of power distribution and fault analysis. The department has all computers under local area network. The wireless LAN facilitates access of software from any place in the campus by the students and faculties.

The electrical engineering department has well qualified faculty, may with Ph. D and M. Tech degree with specialization in the field of electrical power, control system and microcomputer based instrumentation & control. The department has well qualified panel of visiting faculty from academics and industry. They visit to the department at regular interval to deliver expert lectures and discuss recent trends in the field of Electrical Engg, Power system - generation, transmission and distribution, Thyristorised controlled electrical drives used in industry, microcomputer applications in instrumentation and control etc.

In recent past, the faculty and students of the department have many publications in journals and conferences (Approx. Forty). Many books on different electrical engineering subjects have been authored by the faculties of the department. Till date the department has produces five Ph. Ds and three candidates are enrolled under Patna University.

The aim of the department is to equip the different labs for modern course curriculum in the field of engineering & technology. In order to carryout research, development and consultancy work in active participation with the industry. The department is in process of establishing labs for computer based process control and digital signal processing. The high voltage lab is likely to be upgraded soon.

FACULTY PROFILE:

	Name	Designation	Educational Qualification	Area of Specialization
Department of Civil Engineering	Dr. K.S.P. Singh	Professor	Ph.D.	Soil Mechanics & Foundation Engineering
	Dr. Surendra Kumar	Professor & Head	Ph. D	Urban Planning & Development
	Dr. L.B. Roy	Asst. Prof.	Ph. D	Water Resources Engineering and Geo Technical Engg.
	Dr. Vivekanand Singh	Asst. Prof.	Ph. D	Hydraulic & Water Resources Engineering
	Mr. Sanjeev Kr. Sinha	Asst. Prof.	M. Tech.	Soil Mechanics
	Dr. S. S. Mishra	Asst Prof.	Ph. D.	Structural Engineering
	Mr. S.K. Singh	Lecturer	B. Tech	-
	Mr. Sanjay Kumar	Lecturer	B. Tech	-
	Dr. N. S. Maurya	Lecturer	Ph. D	Environmental Engineering
	Mr. Anshuman Singh (On Study Leave)	Lecturer	M. Tech.	Environmental Engineering
	Mr. S.K. Suman	Lecturer	M. Tech	Transportation Engineering
	Mrs. Sunita Kumari	Lecturer	M. Tech	Geotechnical Engineering
	Mrs. Reena Singh	Lecturer	M. Tech.	Environmental Engineering
	Mr. S.K. Murmu	Lecturer	M. Tech.	Water Resources Engineering
	Mr. Baboo Rai	Lecturer	M. Tech.	Structural engg.
	Dr K. P. Singh	Professor (Visiting)	Ph. D	Transportation Engg.
	Dr Y Prasad	Professor(Contractual)	Ph. D	Structural Engg.
	Dr U K Srivastava	Professor(Contractual)	Ph. D	Structural Engg.
Dr S K Sinha	Professor(Contractual)	Ph. D	Structural Engg.	
Department of Mechanical Engineering	Prof Narendra Kumar	Professor	M. Tech	Thermal Engg
	Prof. Sudarshan Singh	Professor & Head	Ph.D.	Thermal Engg
	Prof. S. J. Hasnain	Professor	M. Tech	Design Engg
	Prof. S.K. Singh (on lien)	Professor	Ph.D.	Thermal Turbo Machine
	Mr. S.S. Prasad (On Study Leave)	Asstt Prof	M Tech	Design Engg
	Dr. S.K. Verma	Asstt Prof	Ph. D.	Thermal Engg
	Dr. Om Prakash	Asstt Prof	Ph.D.	Thermal Engg, Power Plant Engg., Heat Transfer
	Dr. Amar Nath Sinha	Asstt Prof	Ph.D.	Manufacturing
	Mr. M.N. Pandey	Lecturer	M. Sc. Engg	Thermal Engg
	Mr. Amit Kumar	Lecturer	M. Tech	CIDM
	Mr. Shahid Mahmood	Lecturer	M. Sc. Engg	Ref., Air Cond. & Heat Transfer
	Mr. Arun Kumar	Lecturer	M. Tech	Thermal Engg.
	Mr. Anil Kumar Das	Lecturer	M. Tech	Manufacturing Science
	Dr. S. N. Sinha	Professor(Contractual)	Ph. D.	Thermal Engg
	Dr S. P. Sinha	Professor(Contractual)	Ph. D.	Thermal Engg
Dr R. K. Jha	Professor(Contractual)	Ph. D.	Thermal Engg	
Prof N K Prasad	Professor(Contractual)	M Tech	Machine Design	
DR. S. N. Lal	Professor(Contractual)	Ph. D.	Thermal Engg	
Department of Electrical Engineering	Dr. Girish Kumar Choudhary	Professor& Head	Ph. D	Power System & Control
	Dr. Madan Mohan Choudhary	Professor	Ph. D	Power System & Control
	Dr. Uday Shankar Triar	Professor	Ph. D	Microcomputer application, Power Electronics, Instrumentation. & Control
	Mr. Vidya Sagar	Asst Prof	M. Tech	Electronics & Communication
	Mr. Anil Kumar Sahani	Asst Prof	M. Tech	Power System & Control
	Mr. Ramesh Kumar	Asst Prof	M. Tech	Microprocessor & control
	Mr. Ravindra Kumar	Asst Prof.	M. Tech	Electronics & Communication
	Dr. Sambhu Nath Verma	Lecturer	Ph. D	Power System
	Mrs. Jayanti Chudhary	Lecturer	M. Tech	Power Electronics & Drives Control
	Mr. Alok Ranjan	Lecturer	M. Tech.	Power System
	Dr. H. K. Singh	Professor (Contractual)	Ph. D	Power Electronics & Drive control
	Mr. Abinash Chandra Sinha	Adjunct Prof	M. Tech	Power system
	Dr. Rajendra Prasad	Professor (Visiting)	Ph. D	Instrumentation & Control system
Mr. M. H. Imam	Professor (Visiting)	M. Tech, MBA	Electrical Power and Management	

ANNEXURE – I

Academic Calendar 2009

ACTIVITY	PROGRAM	SEMESTER	Dates: 2009-10	REMARKS
AUTUMN (ODD) SEMESTER SESSION 2009-10				
Convocation for Session 2007-08 and 2008-09	B. Tech B. Arch. M. Tech	2004 and 2005 Batch 2003 and 2004 Batch 2005 and other Batches	Proposed in 4th Week of July 2009	
Program Registration	B. Arch/ B. Tech	All Semesters (Except 1st Sem)	20 th to 21 st July 2009 (Mon & Tue)	Late Registration with fine allowed till next Three working days from last date of registration
	M. Tech.	3 rd Semester 4+ Sem (Extended)	20 th to 21 st July 2009 (Mon & Tue)	
	M. Tech.	1 st Semester	20 th to 21 st July 2009 (Mon & Tue)	
	B. Arch./ B. Tech	1 st Semester	20 th to 21 st July 2009 (Mon & Tue)	
Start of Classes	B. Arch/ B. Tech./ M. Tech	All Semesters (Except 1st Sem)	22 nd July 2009 (Wed)	From Next Working Day After Registration
Orientation Program	B. Arch / B. Tech	1 st semester	22 nd July 2009 (Wed)	Subject to change as per CCB Admission Schedule
Start of Classes	B. Arch / B. Tech	1 st semester	23 rd July 2009 (Thu)	
Fresher's Welcome	B. Arch / B. Tech	1 st semester	Last week August 2009 (Fri/ Sat)	
Mid Semester Examinations	B. Arch/ B. Tech./ M. Tech	All Semesters	16 th to 23 rd Sep 2009 (Wed – Wed)	1 st Sem B. Tech/ B. Arch dates may be different
End of Regular Classes			16 th Nov 2009 (Mon)	
Submission of Grades	B. Arch/ B. Tech./ M. Tech	All Semesters	27 th Nov 2009 (Fri)	Last date
End Semester Examinations	B. Arch/ B. Tech./ M. Tech	All Semesters	23 rd Nov 09 to 7 th Dec 09 (Tue - Mon)	
Answer book Evaluation: End Sem Exam	B. Arch/ B. Tech./ M. Tech	All Semesters	8 th to 15 th Dec 2009 (Tue – Tue)	
Dissertation Pre-submission Seminar/ Viva Voce	M. Tech.- Dissertation	3 rd Semester and 4+ Sem (Extended)	17 th to 20 th Nov 2009 (Mon- Fri)	4+ Sem (Extended): <i>M. Tech student having Registration Continuation beyond 4th semester of the Program</i>
Dissertation Examination	M. Tech	4+ Sem (Extended)	14 th to 18 th Dec 2009 (Mon – Fri)	
PEC Meeting	B. Arch./ B. Tech	All Semesters	18 th Dec 2009 (Fri)	
	M. Tech	All Semesters	21 st Dec 2009 (Mon)	
Publication Of Result	B. Arch./ B. Tech	All Semesters	21 st Dec 2009 (Mon)	
	M. Tech	All Semesters	22 nd Dec 2009 (Mon)	
Inter Semester Break	B. Arch/ B. Tech/ M. Tech	All Students	8 th to 19 th Dec 2009	

ACTIVITY	PROGRAM	SEMESTER	Dates: 2009-10	REMARKS
SPRING (EVEN) SEMESTER ACADEMIC SESSION 2009-10				
Program Registration	B. Arch/ B. Tech/ M. Tech	All Semesters	21 st & 22 nd Dec 2009 (Mon- Tue)	Late Registration with fine allowed till next Three working days from last date of registration
	M. Tech.	2 nd Semester 2009 Batch	21 st & 22 nd Dec 2009 (Mon- Tue)	
Start of Classes	B. Arch/ B. Tech./ M. Tech	All Semesters	23 rd Dec 09 (Wed)	From Next Working Day After Registration
NITP Tech Fest			19th to 21st Jan 2010	
Annual Sports, Athletic Meet and Cultural Festival			22 nd to 28 th Jan 2010 (Thu to Wed)	Classes shall remain Suspended
NITP Foundation Day			28 th Jan 2010 (Wed)	
Mid Semester Examinations	B. Arch/ B. Tech./ M. Tech	All Semesters	19 th to 26 th Mar 2010 (Fri – Fri)	Holi Festival on 1st Mar 2010
End of Regular Classes			5 th April 2010 (Mon)	
Submission of Grades	B. Arch/ B. Tech./ M. Tech	All semesters	9 th April 2010 (Fri)	Last date
End Semester Examinations	B. Arch/ B. Tech./ M. Tech	All Semesters	12 th April 2010 (Mon) to 20 th Apr 2010 (Tue)	
Answer book Evaluation: End Semester Exam	B. Arch/ B. Tech./ M. Tech	All Semesters	20 th to 27 th April 2010 (Tue to Fri)	
Project Viva Voce	B. Tech/ B. Arch.	8 th Sem & 10 th Sem	20 th to 27 th April 2010 (Tue to Tue)	
Dissertation Pre-submission Seminar	M. Tech.	4 th Sem and 4+ Sem (Extended)	30 th Mar 2010 (Mon) to 2 nd Apr 2010 (Fri)	4+ Sem (Extended): <i>M. Tech student having Registration Continuation beyond 4th Semester of the Program</i>
Dissertation Examination	M. Tech.	4 th Sem and 4+ Sem (Extended)	to be completed by 23 rd April 2010 (Fri)	
Submission of Grades	B. Arch/ B. Tech	8 th Sem & 10 th Sem	27 th April 2010 (Tue)	Last Date For Project Only
	M. Tech.	4 th Sem and 4+ Sem (Extended)	27 th April 2010 (Tue)	Last date For Dissertation
PEC Meeting	M. Tech	(except 4 th semester)	29 th April 2010 (Thu)	
	B. Arch./ B. Tech	(except 8 th & 10 th semester)	29 th April 2010 (Thu)	
	B. Arch./ B. Tech	8 th & 10 th semester	30 th April 2010 (Fri)	
	M. Tech	4 th Semester	30 th April 2010 (Fri)	
Publication of Result	B. Arch./ B. Tech	All Semester	3 rd May 2010 (Mon)	
	M. Tech	2 nd Semester	3 rd May 2010 (Mon)	
	M. Tech.	4 th Semester	5 th May 2010 (Wed)	
Summer Break	For Students		21 st April 2010 to 6 th June 2010	Except B. Tech/ B. Arch 8 th / 10 th Sem

ACTIVITY	PROGRAM	SEMESTER	Dates: 2009-10	REMARKS
Summer Training	B. Tech	6 th Semester	Four weeks Industrial/ Vocational Training during Summer break	Summer Industrial/ Vocational Training period if revised to Four weeks, else Six weeks
Special Examination	B. Arch/ B. Tech./ M. Tech		14 th to 21 st June 2010 (Mon – Mon)	
Special Examination PEC meeting	B. Arch/ B. Tech./ M. Tech		28 th June 2010 (Mon)	
Special Examination Publication of results	B. Arch/ B. Tech./ M. Tech.		30 th June 2010 (Wed)	
Convocation for Session 2009-10			Proposed in 3rd Week of July 2010	
AUTUMN (ODD) SEMESTER ACADEMIC SESSION 2010-11:				
Program Registration	B. Arch/ B. Tech/ M. Tech	All semesters Except 1 st semester	1 st & 2 nd July 2010 (Thu- Fri)	Late Registration with fine allowed till next Three working days from last date of registration
	B. Arch/ B. Tech/ M. Tech	1 st Semester	As per CCB -2010 admission Schedule	
	M. Tech	3 rd Semester	1 st & 2 nd July 2010 (Thu- Fri)	
Start of Classes	B. Arch/ B. Tech./ M. Tech	All Semesters (Except 1 st Sem)	5 nd July 2010 (Mon)	From Next Working Day After Registration
	B. Arch / B. Tech	1 st semester (2009 batch)	As per CCB -2010 admission Schedule	May be revised as per CCB Counselling Schedule

Note:

- (i) B. Tech/ B Arch 1st Sem Registration & Start of Class and Mid Semester Examination proposed dates/ Schedule may change as per CCB Admission Counselling Schedule.
- (ii) M. Tech 4+ Sem (Extended): *M. Tech student having Registration Continuation beyond 4th semester of the Program*
- (iii) The above proposed dates for different academic and other activities are subject to adjustment/ rescheduling depending on Institute's Holidays notified.

ANNEXURE - II

M. Tech Program Course & Credits requirement for Award of Degree

Program	Semesters	Courses	Credit to be offered
M. Tech. in Elect Engg./ Civil Engg./ Mech. Engg. with different Specializations	1 st	Core Course	20 to 25
	2 nd	Core and Electives Course	20 to 25
	<i>Minimum Credits to be earned at the end of 2nd semester to be eligible to start Dissertation Work</i>		45
	3 rd	Seminar and Dissertation (To be continued in 4 th semester)	10
	4 th	Seminar and Dissertation	15
	<i>Minimum Credits to be earned at the end of 4th semester to be eligible for award of Degree with minimum CGPA of 6.0</i>		70

Course Structure for M. Tech (Elect. Engg.)

Program Code	Semester	Course Code	Subject	L	T	P	Credit
EEPG	1		Core Subject – I	3	0/1	0/3	4/5
EEPG	1		Core Subject – II	3	0/1	0/3	4/5
EEPG	1		Elective - I	3	0/1	0/3	4/5
EEPG	1		Elective – II	3	0/1	0/3	4/5
EEPG	1		Elective – III	3	0/1	0/3	4/5
			Total	16	5	3	20/25*
EEPG	2		Core Subject – III	3	0/1	0/3	4/5
EEPG	2		Core Subject – IV	3	0/1	0/3	4/5
EEPG	2		Elective – V	3	0/1	0/3	4/5
EEPG	2		Elective – VI	3	0/1	0/3	4/5
EEPG	2		Elective – VII	3	0/1	0/3	4/5
			Total	16	5	3	20/25*
<i>Total Minimum Credit offered combining 1st & 2nd semester will not be less than 45</i>							
EEPG	3	EE 2391	Seminar	0	0	3	2
EEPG	3	EE 2392	Dissertation (<i>To Continue in 4th Semester</i>)	0	0	12	8
EEPG	3		Total				10
EEPG	4	EE 2493	Seminar	0	0	3	2
EEPG	4	EE 2494	Dissertation	0	0	20	13
EEPG	4		Total				15

Core Subjects (Choose any two in 1st and 2nd Semester) (2007 Batch)

S. N.		Course Code	Course Title	L	T	P	Credits
1	Specialization : Control System	EE 2x10	Power Electronics	3	0	3	5
2		EE 2x16	Modern Control Theory	3	1	0	4
3		EE 2x20	Digital Control System	3	1	0	4
4		EE 2x21	Stochastic Process	3	1	0	4
5		EE 2x22	State Estimation	3	1	0	4
6		EE 2x23	Optimal Control Theory	3	1	0	4
7		EE 2x24	Non-linear Control System	3	1	0	4
8		EE 2x25	System Identification	3	1	0	4
9		EE 2x26	System Modeling and Model Order Reduction Technique	3	1	0	4
10		EE 2x35	Control System Design	1	0	3	3
11		EE 2x47	Industrial Drives & Control	3	1	0	4

S. N.		Course Code	Course Title	L	T	P	Credits
1	Specialization : Power System	EE 2x10	Power Electronics	3	0	3	5
2		EE 2x15	Power System Design	1	0	3	3
3		EE 2x31	Computer Aided Power System Analysis	3	1	0	4
4		EE 2x32	Advanced Electrical Machine	3	1	0	4
5		EE 2x34	EHV Power Transmission	3	1	0	4
6		EE 2x39	Modern Power System Operation & Control	3	1	0	4
7		EE 2x46	High Voltage Engineering	3	0	3	5
8		EE 2x47	Industrial Drives & Control	3	1	0	4
9		EE 2x48	HVDC Power Transmission	3	1	0	4
10		EE 2x49	Power System Dynamics	3	1	0	4
11		EE 2x50	Power System Protection	3	0	3	5
12		EE 2x51	Power Plant Engineering	3	1	0	4
13		EE 2x53	Power System Planning & Reliability	3	1	0	4

Elective Subject (Choose any three in each 1st and 2nd Semester) core subjects can also be taken as elective subject if not offered as core subject earlier. (2007 Batch)

S. N.	Course Code	Course Title	L	T	P	Credits
1	CS 2x01	Object Oriented Programming	3	0	3	5
2	CS 2x06	Data Base System	3	1	0	4
3	CS 2x14	Computer Networks	3	0	3	5
4	CS 2x28	Advance Computer Architecture	3	1	0	4
5	EC 1x09	Electronic Instrumentation	3	0	3	5
6	EC 2x08	Intelligent Instruments	3	0	3	5
7	EC 2x13	Digital Signal Processing	3	0	3	5
8	EC 2x71	VLSI Design	3	1	0	4
9	EE 2x10	Power Electronics	3	0	3	5
10	EE 2x18	Microprocessor & Microcontrollers	3	0	3	5
11	EE 2x35	Control System Design	3	0	3	5
12	EE 2x37	Computer Aided Machine Design	3	0	3	5
13	EE 2x39	Modern Power System Operation & Control	3	1	0	4
14	EE 2x41	Fuzzy Logic Control	3	1	0	4
15	EE 2x42	Neural Network System	3	1	0	4
16	EE 2x43	Switched Mode Power Converter	3	0	3	5
17	EE 2x45	Microcontroller & its Application	3	0	3	5
18	EE 2x47	Industrial Drives & Control	3	1	0	4
19	EE 2x62	Fuzzy Logic Design	3	0	3	5
20	EE 2x64	Active Network	3	1	0	4
21	EE 2x66	Advanced Microprocessor	3	0	3	5
22	EE 2x69	Computer Aided Control System Design	3	0	3	5
23	EE 2x70	Neural Network and Application	3	0	3	5
24	MA 2x10	Applied Mathematics	3	1	0	4
25	MA 2x11	Operational Research	3	1	0	4
26	ME 2x33	Robotics and Robot Applications	3	1	0	4

Course Structure for M. Tech (Civil Engg)

Program Code	Semester	Course Code	Course Title	L	T	P	Credits
CEPG	1		Core Subjects – <i>five Papers from the list of Core Subjects</i>	3	1	0	4 x 5
CEPG	1	CE 2268	Civil Engg Lab –I	0	0	4	3
CEPG	2		Elective subjects as per specialization – <i>five papers from the list of Elective subjects as per specialization</i>	3	1	0	4 x 5
CEPG	2	CE 2269	Civil Engg Lab – II (as per specializations of the students)	0	0	4	3
CEPG	3	CE 2318	Seminar	0	0	3	2
CEPG	3	CE 2319	Dissertation (to continue in 4 th Semester)	0	0	12	8
CEPG	4	CE 2420	Seminar	0	0	3	2
CEPG	4	CE 2421	Seminar & Dissertation	0	0	20	13

S. No	Specialization	Sem	Course Code	Course Title	L	T	P	Credits
M. Tech. (Civil Engg.) CORE SUBJECTS (Compulsory) <i>(20-25 Credits to be taken)</i>								
1.	Core	1	CE 2101	System Analysis and Optimization Techniques	3	1	0	4
2.	Core	1	CE 2102	Construction Technology	3	1	0	4
3.	Core	1	MA 2106	Advance Numerical Methods and Computational Techniques	3	1	0	4
4.	Core	1	MA 2107	Probability and Statistics	3	1	0	4
5.	Core	1	MA 2108	Engineering Mathematics	3	1	0	4
6.	Core- Str	1	CE 2104	Theory of Elasticity and Plasticity	3	1	0	4
7.	Core- Trans	1	CE 2103	Soil Properties and Foundation	3	1	0	4
8.	Core- Trans	1	CE 2106	Urban Geography and Transportation	3	1	0	5
9.	Core- WRS	1	CE 2105	Advanced Fluid Mechanics	3	1	0	4
M. Tech. (Civil Engg.) ELECTIVE SUBJECTS								
10.	EL- Str	2	CE 2221	Advanced Structural Analysis I	3	1	0	4
11.	EL- Str	2	CE 2222	Concrete Technology	3	1	0	4
12.	EL- Str	2	CE 2223	Theory of Plates and Shells	3	1	0	4
13.	EL- Str	2	CE 2224	Pre-Stressed Concrete	3	1	0	4
14.	EL- Str	2	CE 2225	Design of Multistoried Building	3	1	0	4
15.	EL- Str	2	CE 2226	R.C. Structures	3	1	0	4
16.	EL- Str	2	CE 2227	Advanced Structural Analysis II	3	1	0	4
17.	EL- Str	2	CE 2228	Structural Stability	3	1	0	4
18.	EL- Str	2	CE 2229	Steel Structure Design	3	1	0	4
19.	EL- Str	2	CE 2230	Design of Bridges	3	1	0	4
20.	EL- Str	2	CE 2231	Advance Soil Properties and Foundation	3	1	0	4
21.	EL- Str	2	MA 21XX	Probability and Statistics	3	1	0	4
22.	EL- Trans	2	MA 2108	Engineering Mathematics	3	1	0	4
23.	EL- Trans	2	CE 2261	Geometric Design of Highway and Airport Pavements	3	1	0	4
24.	EL- Trans	2	CE 2262	Traffic Engineering and Management	3	1	0	4
25.	EL- Trans	2	CE 2263	Highway Material and Construction	3	1	0	4
26.	EL- Trans	2	CE 2264	Highway Sub-grade and Foundation	3	1	0	4
27.	EL- Trans	2	CE 2265	Highway Economics	3	1	0	4

S. No	Specialization	Sem	Course Code	Course Title	L	T	P	Credits
28.	EL- Trans	2	CE 2266	Airport Planning and Design	3	1	0	4
29.	EL- Trans	2	CE 2267	Pavement Design	3	1	0	4
30.	EL- Trans	2	CE 2268	Transportation Planning Models	3	1	0	4
31.	EL- Trans	2	CE 2269	Interstate Transport Planning	3	1	0	4
32.	EL- Trans	2	CE 2270	Tunnel Harbors and Docks	3	1	0	4
33.	EL- Trans	2	CE 2271	Traffic Flow Theory	3	1	0	4
34.	EL- Trans	2	CE 2272	Land Use Planning	3	1	0	4
35.	EL- Trans	2	CE 2273	Railways	3	1	0	4
36.	EL- WRS	2	CE 2241	Open Channel Flow	3	1	0	4
37.	EL- WRS	2	CE 2242	Water Resources Planning and Economic Analysis of Water Resources System	3	1	0	4
38.	EL- WRS	2	CE 2243	Advanced Hydrology	3	1	0	4
39.	EL- WRS	2	CE 2244	Groundwater Hydrology	3	1	0	4
40.	EL- WRS	2	CE 2245	Design of Dams	3	1	0	4
41.	EL- WRS	2	CE 2246	Flood Control and Drainage	3	1	0	4
42.	EL- WRS	2	CE 2247	River Engineering	3	1	0	4
43.	EL- WRS	2	CE 2248	Irrigation Water Management	3	1	0	4
44.	EL- WRS	2	CE 2249	Hydro Power Planning and Design	3	1	0	4
45.	EL- WRS	2	CE 2250	Reservoir Operation and Planning	3	1	0	4
46.	EL- WRS	2	CE 2251	Hydrodynamics	3	1	0	4
47.	EL- WRS	2	CE 2252	Stochastic Hydrology	3	1	0	4

Course Structure for M. Tech (Mech Engg.)

Program Code	Semester	Course code	Course Title	L- T- P	Credit
Core Courses (Common for all Specialization)					
MEPG	1	MA 2109	Advanced Mathematics	3-1-0	4
MEPG	1	ME 2162	Advanced Thermodynamics	3-1-0	4
MEPG	1	ME 2163	Experimental Methods in Thermal Science	3-1-0	4
MEPG	1	ME 2164	Advanced Topics in Engg. Optimization	3-1-0	4
MEPG	1	ME 2165	Advanced Heat & Mass Transfer	3-1-0	4
MEPG	1	ME 2166	Seminar	0-0-4	3
MEPG	1		TOTAL		23
REFRIGERATION AIR CONDITIONING & HEAT TRANSFER					
MEPG	2	ME 2267	Refrigeration System	3-0-3	5
MEPG	2	ME 2268	Thermal Environmental Control	3-0-3	5
MEPG	2	ME 2269	Design of Heat Exchange Equipment	3-0-3	5
MEPG	2	ME 2270	Solar Energy	3-0-3	5
MEPG	2	ME 2271	Individual Study, Report and Seminar	1-0-6	5
MEPG	2		TOTAL		25
THERMAL TURBO MACHINE					
MEPG	2	ME 2272	Thermal Turbo Machinery	4-1-0	5
MEPG	2	ME 2273	Gas Dynamics	4-1-0	5
MEPG	2	ME 2274	Principle and Design of Gas Turbine	4-1-0	5
MEPG	2	ME 2275	Hydraulic Turbo Machines	4-1-0	5
MEPG	2	ME 2271	Individual Study, Report and Seminar	1-0-6	5
MEPG	2		TOTAL		25
Common for all Specialization					
MEPG	3	ME 2376	Seminar	0-0-3	2
MEPG	3	ME 2377	Dissertation (To continue in 4 th Semester)	0-0-12	8
MEPG	3		TOTAL		10
Common for all Specialization					
MEPG	4	ME 2478	Seminar	0-0-3	2
MEPG	4	ME 2477	Dissertation	0-0-20	13
MEPG	4		TOTAL		15
List of Electives (to be introduced)					
MEPG	Elective	ME 2X79	Combustion Engines and Pollution		
MEPG	Elective	ME 2X80	Advanced computational fluid dynamics		

ANNEXURE - III

Evaluation under Credit System

Education at the institute is organized around the credit system of study. The prominent features of the credit system entail a process of continuous evaluation of a student's performance and flexibility to allow a student to progress at an optimum pace suited to his/her ability or convenience subject to fulfilling minimum requirement for continuation.

Each course has a certain number of credits which describe its weightage. A student's performance is measured by the number of credits that he/she has completed satisfactorily. A minimum Grade Point Average is required to be maintained for satisfactory progress. Also a minimum number of earned credits should be obtained in order to qualify for the degree.

Each course is coordinated by a member of the teaching staff of the Department, which offers the course in a given semester. This faculty member is called the course coordinator. He has full responsibility for conducting the course, coordinating the work of the other members of the faculty involved in that course and for holding tests and assignments and awarding grades. For any difficulty a student is expected to approach the course coordinator for advice and clarification.

Awarding of Grades

The grade in each course shall be awarded on the basis of the total marks obtained in the subject concerned as follows:

Conversion from Percentage marks to Grade and its Grade points Award of Grade and Grade point

For Semester Exam.		Theory Component:		Practical Component:	
Range of marks (m)	Performance	Grade to be awarded	Grade Point per Credit	Grade	Grade Point per Credit
m > = 90	Excellent	A+	10	A+	10
80 < = m < 90	Very good	A	9	A	9
70 < = m < 80	Good	B	8	B	8
60 < = m < 70	Fair	C	7	C	7
50 < = m < 60	Average	D	6	D	6
35 < = m < 50	Pass	P	5		
40 < = m < 50	Pass			P	5
m < 35	Fail	F	0		
m < 40	Fail			F	0
Not appeared at End Semester Exam	Incomplete	I	*	I	*
Unsatisfactory Attendance/ Disciplinary Action/ Adopted malpractice	Debarred	X		X	

* Symbol to indicate Incomplete Course as student has been absent at End semester examination for Theory and/ or practical component of examination(s) - to be used in tabulation sheet.

Awarding of SGPA/ CGPA

The Semester Grade Point Average (SGPA) shall be calculated as follows:

- The point equivalent awarded in each subject of the course, for which the student has been registered, shall be multiplied by its credits points.
- These products shall be added and the sum shall be divided by the total number of Credits Points registered for, ignoring the incomplete grade. The ratio shall be called SGPA.

The Cumulative Grade Point Average (CGPA) shall be computed at the end of the second and subsequent semesters in the following manner:

- (a) The SGPA obtained in each semester shall be multiplied by its corresponding total, credits registered for the semester.
- (b) These products shall be added and the sum shall be divided by the total number of credits points registered in all the semester.
- (c) Both SGPA and CGPA shall be, rounded off to the second place of decimal.

Eligibility for Award of M. Tech. Degree

A candidate shall be entitled to the degree of M. Tech only on successful completion of minimum 70 credits provided he has obtained a minimum of "D" grade in each subject with a minimum CGPA of 6.00. After a candidate clears the required number of credits and fulfills other requirements and conditions of the regulations for Post-graduate program (M. Tech), he/she shall be declared to have passed M. Tech. examination.

As per Hon'ble Supreme Court's order in writ application No. (C) 656/1998 "Ragging is banned in the Institution".

Any one found indulging in ragging shall be punished as per Hon'ble Supreme Court Orders appropriately which may include expulsion from the Institute.

The Institute treats ragging as a cognizable offence and stern action will be taken against the offenders.



**NATIONAL INSTITUTE OF
TECHNOLOGY PATNA
PATNA – 800005 (BIHAR)
M. Tech Program Session – 2009-10**

Application Form for Institution Level Counseling

APPLICATION NO. (to be assigned by Receiving office)				PHOTOGRAPH Affix recent passport size photograph And Put your signature in box provided below this space in Black Jell Pen
<i>To be filed by the candidate in his/ her own handwriting in Capital letters except signature</i>				
GATE ROLL NO.		CATEGORY (Put \checkmark mark)		
GATE RANK		OP/ General		
GATE SCORE		OBC		
GATE Percentile		SC		
Branch of Engg		ST		
STATE		PH		
District		Sponsored		
Details of Demand Draft attached: Bank / Branch		DD number	Amount	
<i>Please Indicate Order of preference of Branch/ Specialization your by Writing 1,2,3 in last column</i>				
Elect. Engg:	1.	(i) Control System		
	2.	(ii) Power system		
Civil Engg:	3.	(i) Structural Engg.		
	4.	(ii) Transportation Engg		
	5.	(iii) Water Resources		
Mech. Engg:	6.	(i) Refrigeration, Air Conditioning & Heat Transfer		
	7.	(ii) Thermal Turbo Machinery		
1.	Name of candidate in full (as per 10 th Certificate)			
2.	Father's Name			
3.	Mother's Name			
4.	Guardian's name in full (if father is not alive)			
5.	Date of Birth (dd-mm-yy)/ Sex:		Male/ Female	
6.	Occupation of Parents	Father:	Mother:	
	Parents Income per annum from all Sources			
	Organization where father/ Mother is working or Guardian (if father is not alive),			
7.	Correspondence Address			
	Pin Code:			
	Phone No. (with STD Code)/ Mobile No.:			

8.	Permanent Address				
	Pin Code:				
9.	Educational Qualifications:-				
	<i>Name of Examination</i>	<i>Name of the Institute</i>	<i>Name of the Board/ University</i>	<i>Year of Passing</i>	<i>Percentage marks</i>
	Secondary/10 th				
	I. Sc./XII/ (10 +2)				

B. Tech/ B.E./ B. Sc. Engg or Equivalent* Academic Record of the Qualifying Examinations

<i>Degree and Branch</i>	<i>Institute/ University</i>	<i>Semester/ Year</i>	<i>Year of passing</i>	<i>SGPA/ % Marks</i>	<i>CGPA/ Aggregate</i>	<i>Remarks</i>
		1 st	First			
		2 nd				
		3 rd	Second			
		4 th				
		5 th	Third			
		6 th				
		7 th	Fourth			
		8 th				

10.	Declaration of the Candidate :				
	I,..... Son/ Daughter of Sri.....				
	Declare that :-				
	a) Information furnished above are correct and in case any of them is proved to be false or forged at any stage of my admission to and/ or stay in the Institute, I shall be liable (i) to lose my candidature for admission to the program, (ii) for expulsion from the Institute if admitted and (iii) for appropriate legal action.				
	b) In the event of my being admitted to this Institution, I shall abide by all the rules and regulations of the Institute and the University, concerned.				
	Place : _____	Full Signature of the Candidate in English			
	Date : _____				

11.	Declaration of the Father / Guardian (to be filled in his / her own handwriting)				
	I,.....(Name) declare that in the event of Sri/Smt./ Miss..... being admitted to this Institution. I shall be responsible for his / her conduct and undertake to pay all his / her Institute, Hostel, Mess and other dues regularly till the completion of his / her studies. I further certify that the Information furnished by him/ her are correct.				
	Place :	Full Signature of Father / Guardian			
	Date :				

Acknowledgment (Please Tear along this Row):

In case of form being deposited at Institution Counter the counter foil of application be returned to the candidate

APPLICATION NO		Signature & seal of receiving Office
APPLICATION NO		
Name of the candidate		

Date of submission		
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12.	Please Enclose Self attested Photocopies of following:-		(Put ✓/ mark)
(i)	Demand Draft of Application Fee as per information Brochure	Must be submitted with application form	
(ii)	GATE Score/ Rank Card		
(iii)	Certificate of Category (OBC/ SC / ST/ PH), if applicable, Issued by the competent authority		
(iv)	Income certificate for OBC candidates stating the Candidate's Parent do not belong to Creamy Layer as per directive of the MHRD		
(v)	Certificate for Physically handicapped		
(vi)	Qualifying Examination Marks Sheet/ Grade Card		
(vii)	Four Photographs identical to the one Pasted on the application form	Must be submitted at the time of admission Counselling	
(viii)	Class X (High School) Board Certificate as proof of date of birth		
(ix)	Qualifying Examination Passing Certificate of		
(x)	Migration Certificate from the University/ Deemed University/ Institute attended		
(xi)	Demand Draft for Tuition Fee and Development Fee as per Information Brochure		
Signature of Verifying Officers			
	1..... 2..... 3..... 4..... 5.....		
(To be obtained at the time of admission only)			
	Full Signature of the Candidate: (English)		
	Left Thumb impression of the Candidate		
(For Office use Only)			
	Admit Mr./Ms.....in M. Tech Program first semester under Department of Elect/ Mech/ Civil Engg. with Specialization As per records his Category Merit Sl. No.and is admitted against College Roll no..... . He/ she fulfilled all requirements for being admitted.		
	Signature of Final Checking Officer		
	Signature of Asst. Registrar (Admission)		
	Signature of Dean Academic Affairs/ Chairman Admission Committee:		

“Sponsorship Certificate from the Employer”

(To be provided on the letter Head of the Organization, Only for candidates desirous of admission as full time sponsored candidates)

To whom it may concern

This is to certify that Mr./ Ms. _____ (*Full name of the employee*) is working as _____ (*Designation of the employee*) in the organization from _____ to _____, and has completed two years of service. He is confirmed/ likely to be confirmed soon in the grade/ pay scale of Rs. _____.

It is further informed that he/ she shall be relieved or granted leave for the period of his/ her higher studies at National Institute of Technology Patna.

He / she will attend classes and other academic activities at the institute as per curricula requirement of the M. Tech program. The conduct of sponsored candidate shall be the responsibility of the sponsoring organization.

Signature of the issuing officer
(*Name and designation of the Issuing officer with Official Seal*)

Place _____

Date _____