

# NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

Mangalore- 575025, Karnataka State

## INFORMATION BULLETIN



**Admission to Ph. D Programmes 2018-2019  
(December Session)**

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# NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

## **1. The Institute:**

The National Institute of Technology Karnataka (NITK), Surathkal is rated as one of the top Institutions in India. Since its inception in 1960 as the Karnataka Regional Engineering College, the Institute has established itself as a premier center engaged in imparting quality technical education and providing support to research and development activities. The Government of India as per the NIT Act 2007 declared NIT as Institute of National Importance. The Institute is governed by the rules and statutes of the NIT Act. The Institute has a long tradition of research for several years in both traditional and modern areas of engineering and sciences in all departments. The Institute has been actively involved in application oriented research focussed in resolving problems faced by the society in several areas like environment, water resources, rock mechanics, new structures, VLSI, etc. NITK attracts students from all over the country and abroad. The Institute admits students to the B.Tech degree program on the basis of the Joint Entrance Examination (JEE Mains). Foreign students are admitted on various student exchange programs through MEA, ICCR, etc. and scheme of Direct Admission to Students Abroad (DASA). Scholarship seats for M.Tech programs are awarded on the basis of the Graduate Aptitude Test in Engineering (GATE) and a few seats are available for sponsored students. The institute admits students to MCA Program on the basis of NIMCET, admission to MBA is made on the basis of CAT score and for M.Sc Program admissions are made based upon the academic performance and written aptitude test conducted by the Institute. Every year the Institute offers 150 Ph D fellowships and also admits sponsored/external candidates to the doctoral program. NITK graduates are sought after by top industries/companies and the Institute has been rated as one of the best Institutions in the country with regard to student placements.

## **2. Location:**

NITK is located in Mangalore City along the Kanyakumari-Mumbai National Highway 66. It is well connected by road, rail and by air to major cities in India and a few international destinations. The Institute is located amid 300 acres of sylvan surroundings with the picturesque Western Ghat Mountains on the east and the sun-kissed sands of the Arabian sea to the west. The Mangalore (Bajpe) airport and the Mangalore Railway Station are about 20 kms. away from the Campus, while Surathkal Railway Station is about 3 kms. away from the campus. The campus is located far away from the din and bustle of a city and is very conducive for academic activities. The climate throughout the year is equitable and has temperature range of 18 to 38° Celsius. The campus being on the sea shore, is blessed with clean air and healthy climate.

## **3. Self-Contained Residential Campus:**

The Institute is a residential Institution with adequate hostel facilities for boys and girls. All the students are expected to stay in the Institute hostels. To suit the tastes of the students from different regions, independent messes of various types are run in different hostels. The amenities include 11 Hostel blocks for boys & 8 hostel blocks for ladies with all basic amenities. A good number of faculty quarters provide ample opportunity to draw upon benefits of campus life. Vast stretches of play fields, a swimming pool, a gymnasium, a central library, a well equipped Health Care Centre, post office, branches of State Bank of India and Canara Bank, both with ATM facilities and two canteens are the amenities available. N.C.C. and N.S.S. constitute two more prominent extra-curricular activities in addition to music, photography, web enthusiast and dramatic clubs of the Institute.

## **4. Computing Facilities and Campus Network:**

NITK has a campus wide network spanning the entire campus – academic buildings, guest houses, student hostels and campus residences. Each department has its own LANs connected to this network. These LANs have adequate number of computers to cater to the needs of the department. The campus network uses 12 core optical fibre cabling for inter building connectivity with 1Gbps speed depending on the no. of computers in the end point LANs. Intra departmental and Hostel LANs are fast Ethernet (100 Mbps). Residences on a DSL (broad band) network with ADSL2 technology. The Institute has 24 x 7 Internet connectivity. The journals subscribed through INDEST consortium are available throughout the campus LAN. The Institute's network operations and data centre are in CCC. These are kept functioning round the clock. The Server capacity of the data centre is expanded to support the additional demands. The Institute is part of National Knowledge Network (NKN). The institute hosts the NPTEL video and text lessons in its service for the Campus Network. The present bandwidth is 1 Gbps to NKN and 155 Mbps to BSNL, both shared by the entire campus LAN.

## **5. Library Facilities:**

NITK has a modern Central Library with more than two lakhs of documents consisting of Technical books, reports, standards, CD-ROMS, Audio Visual Educational Cassettes and back volumes of journals including book-bank section.

The Library subscribes to 413 periodicals (print) - 136 Indian; 259 Foreign plus 4000 + e-Journals and 300 + e-Books besides a holding of 7000 + back volumes of journals. The Book-Bank books are for issue to students on monthly basis. The central library is also extending its services to the local industries and educational institutions by giving membership facilities. For the benefit of the users, we are providing the open access facilities, Xerox facility, online database on e-journals and e-books. Library is fully automated and computerized information retrieval service- OPAC (Online Public Access Catalogue) is available at 10 different nodes in the library. Internet and online search facilities are also made available to the end users of the library.

Library has access to 3876 full text Print / online journals and 7156 abstract journals through Indian National Digital Library in Engineering, Science and Technology (INDEST). It coordinate and provide access to these online full text and abstract journals such as IEEE databases, Science Direct, Indian Standards, ASME, ASCE & Nature Journals, etc. Separate digital library unit is established for accessing digital resources. The library has membership with INFLIBNET, DELNET and Mangalore University, thereby facilitate to access to over 5000 additional online resources.

The Institute Library functions from 8.00 A.M to 12.00 midnight from Monday to Saturday, from 8.00 A.M. to 4.00 P.M. on Sunday and from 9.00 to 12.00 noon on General Holidays.

## **6. Courses of Study:**

The Institute offers undergraduate programmes in 9 disciplines and post-graduate programmes in 30 specialized areas. The Institute also offers facilities for research leading to Ph.D. degrees in various branches of Engineering, Science, Humanities, Social Science and Management. The academic responsibilities are shared by the following 14 Teaching Departments

1. Applied Mechanics & Hydraulics
2. Chemical Engineering
3. Chemistry
4. Civil Engineering
5. Computer Science and Engineering
6. Electrical & Electronics Engineering
7. Electronics & Communication Engineering
8. School of Management
9. Information Technology
10. Mathematical and Computational Sciences
11. Mechanical Engineering
12. Metallurgical & Materials Engineering
13. Mining Engineering
14. Physics

The Teaching Departments responsible for conducting the 30 postgraduate programmes are shown below.

### **a) Civil Engineering:**

- |      |             |   |  |
|------|-------------|---|--|
| i)   | M.Tech.(ST) | - | Structural Engineering                 |
| ii)  | M.Tech.(GT) | - | Geotechnical Engineering               |
| iii) | M.Tech.(EN) | - | Environmental Engg                     |
| iv)  | M.Tech.(TS) | - | Transportation Engg.                   |
| v)   | M.Tech.(CM) | - | Construction Technology and Management |

### **b) Applied Mechanics & Hydraulics:**

- |       |             |   |   |
|-------|-------------|---|---|
| vi)   | M.Tech.(MS) | - | Marine Structures                               |
| vii)  | M.Tech.(WR) | - | Water Resources Engineering and Management      |
| viii) | M.Tech.(RS) | - | Remote Sensing & Geographic Information Systems |

### **c) Mechanical Engineering:**

- |      |             |   |                                  |
|------|-------------|---|----------------------------------|
| ix)  | M.Tech.(TH) | - | Thermal Engineering              |
| x)   | M.Tech.(MF) | - | Manufacturing Engineering        |
| xi)  | M.Tech.(MC) | - | Mechatronics Engineering.        |
| xii) | M.Tech.(DP) | - | Design and Precision Engineering |

### **d) Electronics & Communication Engineering:**

- |       |             |   |                           |
|-------|-------------|---|---------------------------|
| xiii) | M.Tech.(VL) | - | VLSI Design               |
| xiv)  | M.Tech.(CE) | - | Communication Engineering |

### **e) Chemical Engineering:**

- |       |             |   |                              |
|-------|-------------|---|------------------------------|
| xv)   | M.Tech.(PD) | - | Chemical Plant Design        |
| xvi)  | M.Tech.(PC) | - | Industrial Pollution Control |
| xvii) | M.Tech.(IB) | - | Industrial Biotechnology     |

**f) Metallurgical & Materials Engineering:**

xviii)	M.Tech. (PM)	-	Process Metallurgy
xix)	M.Tech. (ML)	-	Materials Engineering
xx)	M. Tech. (NT)	-	Nanotechnology

**g) Electrical & Electronics Engineering:**

xxi)	M.Tech. (PS)	-	Power & Energy Systems
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**h) Information Technology:**

xxii)	M.Tech(IT)	-	Information Technology
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**i) Computer Science and Engineering:**

xxiii)	M.Tech. (CS)	-	Computer Science and Engineering
xxiv)	M.Tech. (IS)	-	Computer Science and Engineering - Information Security

**j) Mining Engineering:**

xxv)	M.Tech (by Research)	-	Rock Excavation Technology and Management.
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**k) Mathematical and Computational Sciences:**

xxvi)	M Tech.(CMA)	-	Computational Mathematics
xxvii)	M.C.A. (MCA)	-	Master of Computer Applications

**l) School of Management:**

xxviii)	M.B.A.	-	Master of Business Administration
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**m) Chemistry:**

xxix)	M.Sc.(CY)	-	M.Sc. in Chemistry
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**n) Physics:**

xxx)	M.Sc.(PH)	-	M. Sc. in Physics
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**7. Minimum Qualification / Eligibility:**

**A. Ph.D. Programme**

- i) Admission to a Ph.D. Programme shall be open to Indian Nationals who passed the qualifying degree in relevant field with a Cumulative Grade Point Average (CGPA) of at least 6.0 in the 0-10 scale grading system, or not less than 60% marks in the aggregate (taking into account the marks scored in all the subjects of all the public/ university examinations conducted during the entire prescribed period for the qualifying degree). However, this prescribed minimum shall be a CGPA of 5.5 or 55% marks in the aggregate for SC/ST/PwD candidates. The prescribed qualifying examination is as follows:
- For PhD in Engineering/Technology – Master’s degree in relevant field.
  - For PhD in Physics – Master’s degree in relevant field
  - For PhD in Chemistry - M.Sc. / M. Tech in relevant field including M. Pharma
  - For PhD in Mathematics - M.Sc.in Mathematics / M. Tech in relevant field / MCA
  - For PhD in Humanities, Social Science and Management – Master degree in relevant field, CA along with undergraduate degree.

If the evaluation system in qualifying degree is in both CGPA and Marks, CGPA value will be considered. In such cases, conversion from Grade point system to Percentage system will not be considered.

- ii) Only those applicants having Post-Graduate Degree in Basic Sciences / Social Sciences / Humanities / Management/ Mathematics / Engineering / Technology and who have qualified through **NET/GATE** are eligible for admission to PhD programme (**As per 43<sup>rd</sup> Senate Meeting dated 15.09.2017 vide Item No. 43.3.10(2)**).
- iii) There will be only two types of student status for Ph.D. program during the December Admission 2018-19
- Full-time students on Institute Scholarship
  - Internal Registrants –Sponsored Institute or Project Staff of NITK

*Specializations in Ph.D. Programme are listed below:*

1. Civil Engineering Structures, Geotechnical, Transportation, Construction Technology and Management Environment, Earth Sciences
2. Applied Mechanics & Hydraulics Water Resources Engg & Management, Marine Structures & Coastal Engg., RS & GIS Applications.
3. Mechanical Engg Renewable Energy, Alternative Fuels, IC Engine & Combustion, Refrigeration and Air-conditioning, Heat Transfer, Fluid Dynamics, Fracture Mechanics and Fatigue, FEM, Stress Analysis, Tribology, Machine Dynamics and Vibration, Advanced Materials, Advanced Manufacturing, Mechatronics, MEMS, Nanotechnology, Robotics and Control, Product Design, Structural Acoustics, Polymer Nano-Composites, Precision Manufacturing.
4. Electrical and Electronics Engineering Adaptive and Distributed Signal Processing for Sensing and Image Applications; Control System; Electrical Machines and Machine Diagnosis; High Voltage Engineering and Field Computations; Power Electronics and Drives; Power Systems; Renewable Energy Technologies; Smart Grid Technologies.
5. Electronics & Commn. Communication/VLSI/ Signal Processing
6. Chemical Engineering Process Development, Particulate Systems, Environmental Engineering, Transfer Operations, Industrial Biotechnology, Energy, Modelling and Simulation, Computational Fluid Dynamics, Nanosciences / Nanotechnology, Polymer nanocomposites, Process dynamics and control
7. Metallurgical & Materials Engineering Physical Metallurgy, Mechanical Metallurgy, Extractive Metallurgy, Beneficiation of Minerals, Welding, Surface Engineering, Corrosion, Polymer Nanocomposites, Ceramic and Polymeric Nanofabrics, Energy conversion and storage, Thin films & coatings, Advanced Materials, Heat transfer studies.
8. Mining Engg. Rock Mechanics & Ground Control Engineering, Drilling & Blasting, Mine Planning, Environmental Management
9. Physics Condensed Matter Physics (Experimental)
10. Chemistry Inorganic, Materials, Physical and Organic Chemistry
11. School of Management Business Policy, International Business, Technology Management, Organizational Behaviour, Human Resource Management, Marketing, Corporate Finance, Capital Markets, Behavioural Finance, Development Economics, International Economics, Agricultural Economics, Rural Development, Applied Econometrics, Operations Management, Information Systems, E-Governance, English and Comparative Literature, and Other related areas.
12. Mathematical and Computational Sciences Computational Fluid Dynamics , Wireless Sensor Networks, Reliability Engineering, Graph Theory, Graph Algorithms, Computer Network Security, Real Analysis, Dynamical Systems, Image Processing, Differential Equations, Numerical Methods. Algebra, Number Theory, Cryptography, Functional Analysis, Spectral Analysis, Cloud Computing
13. Information Technology Affective Computing, Big Data Analytics, Cloud/Edge/Fog Computing, Cloud Security, Computer Networks, Cyber Security, Databases, Data Mining, Distributed Computing, Healthcare Informatics, High Performance Computing, Information Retrieval, Information Security, Internet of Things, Natural Language Processing, Network Security, Semantic Web Technology, Social Multimedia/Social Network Analysis, , Software Engineering , Web Services, Wireless Sensor Networks.
14. Computer Science and Engg. Computer Networks, Software Engineering, Distributed Computing, Data Mining, Information Security, High Performance Computing, Computer Vision, Cloud Computing, Image Processing, Speech Processing, Mobile computing

**8. Selection Procedure:**

**PhD:** Selection of candidates for admission to Ph. D. programme will be based upon the academic performance in the qualifying examinations, written aptitude test, presentation on a research topic and interview as specified by the concerned departments.

**9. How to Apply:**

The Information Bulletin, Seat Matrix and Online Application portal for admission to PhD programmes is available on the Institute website [www.nitk.ac.in](http://www.nitk.ac.in) . The applicants need to register online with the portal. The registered candidates have to

complete Online Application form and pay prescribed application fee, i.e. **Rs 500 (OC/OBC) and Rs 150 (SC/ST)** through the IRIS Portal Registration Link, i.e. <http://applications.nitk.ac.in/>

The **hardcopy** of the completed application form with payment receipts and copy of necessary documents is to be sent to the Assistant Registrar (Academic), National Institute of Technology Karnataka, Surathkal, Srinivasnagar, Mangalore - 575 025, Karnataka, on or before the last date, i.e. **16.11.2018 (Friday)**. Applications which are incomplete / defective / received late are liable to be rejected summarily and no correspondence will be entertained on such applications.

**Note: If a candidate desires to apply for PhD programme in one or more departments, he/she should submit separate ONLINE APPLICATION along with Payment Receipt of Application fee for each program.** Candidates called for interview will have to appear for written test and/or interview at their own cost. The written test and/or interview will be held at N.I.T.K., Surathkal.

#### Calendar of Events for admission to PhD Programmes 2018-19.

Last Date for Online Submission of PhD Admissions	14.11.2018 (Wednesday)
Last Date for receiving completed applications	16.11.2018 (Friday)
Last date for dispatch of call letters to short-listed candidates, and announcement in the website by respective departments.	23.11.2018 (Friday)
Selection Test and/or Interview	3.12.2018 & 4.12.2018
Publication of provisional selection/merit-list on website	11.12.2018 (Tuesday)
Last date for Sending admission orders/letters	13.12.2018 (Thursday)
Reporting Dates for Selection-List Candidates	17.12.2018 – 24.12.2018
Last Date for sending admission orders/letters to waiting-list candidates	27.12.2018 (Thursday)
Last Date for Reporting, for waiting-list candidates	3.01.2019 (Thursday)
Course Registration	26-12-2018 (Wednesday)
Classes begin	27.12.2018 (Thursday)

#### 10. Intake for PhD Programmes:

##### 1) PhD Programme for 2018-19: (December Session)

Category	OC	OBC	SC	ST	Persons with disability (PWD)				Total
					OC	OBC	SC	ST	
<b>Intake</b>	20	25	10	7	1	1	1	1	66

OC = Open Category / GM

**Note:** Foreign Nationals are admitted to PhD program under the ICCR Scheme.

**Note:**

- Reserved Seats unfilled due to non availability of SC/ST candidates will not be filled by candidates from OC/OBC.
- Reservation for SC/ST/Persons with Disabilities (PWD) shall be as per Central Government rules.
- Reservation of seats for OBC shall be as per GOI/MHRD norms.

#### 11) Documents to be Produced:

##### A. At the time of counselling/written test/interview:

- Original marks card of all Semesters/years of Engineering/Degree
- Date of Birth Certificate in Original (SSLC/X Std.)
- Course Completion certificate from college (if qualifying degree exam results are awaiting)
- Caste Certificate if belonging to SC/ST (original)
- Caste certificate as per prescribed format for OBC candidates. (if applicable) from the Competent Authority issued after 31.03.2018.
- GATE/NET Score Card in original
- Persons with Disabilities (PWD) certificate, if applicable.

##### B. Documents to be submitted at the time of admission:

- Admission order issued by Competent Authority.
- Original marks card of qualifying examinations (1<sup>st</sup> to Final Year) with two sets of duplicate copies. (The



spelling and order of the name should be same in all the years of marks card, degree certificate and Migration Certificate).

3. Course Completion certificate from college (if qualifying degree exam results are awaiting)
4. Original GATE Score Card.
5. Degree Certificate or Provisional Pass Certificate issued by the University.
6. Medical Certificate (general fitness).
7. Date of Birth Certificate in original(X Std. or SSLC)
8. Caste Certificate in case of SC/ST.
9. OBC Certificate (if applicable) from the competent authority issued after 31.03.2018.
10. Transfer Certificate
11. Conduct Certificate
12. Persons with Disabilities (PWD) certificate, if applicable.
13. Migration Certificate.

**Note:** OBC candidates have to furnish the OBC certificate as per prescribed format. **Candidate can download the prescribed format for OBC Certificate from the NITK website (i.e. [www.nitk.ac.in](http://www.nitk.ac.in))**

In case result of qualifying degree is awaited, provisional admission will be given subject to meeting eligibility requirements latest by **15<sup>th</sup> January, 2018**.

## 12. Financial Assistance:

### Ph D Programme:

- a) Full time research scholars are eligible for a fellowship of Rs. 25,000/- pm for the first two years and Rs. 28,000/- pm for the remaining two years on satisfactory progress. 150 Institute's fellowships are available at the Institute level which is flexible for department-wise allocation. The Research scholars have to assist in teaching and laboratory work assigned by the department and are eligible for 30 days vacation leave per year.

## 13. FEE STRUCTURE FOR Ph.D. PROGRAMME for the year 2018-19:

Semester Fees	First Year		Second Year		Third Year	
	I Sem. Rs.	II Sem. Rs.	III Sem. Rs.	IV Sem. Rs.	Odd Sem Rs.	Even sem. Rs.
Tuition fee #	7500	7500	7500	7500	7500	7500
Library Fees	1500	-	1500	-	1500	-
Central Computing Facility	750	-	750	-	750	-
Student Activities Fee	2575	-	2525	-	2525	-
Group Insurance coverage of students ( <b>Full Time Candidates only</b> )	350	-	350	-	350	-
Thesis Evaluation Fees	5000 One time	-	-	-	-	-
Security Deposit ( <b>refundable</b> )	4000	-	-	-	-	-
Institute Development Contribution ( <b>IDC</b> )	1000	1000	-	-	-	-
Convocation Fee	1000	1000	-	-	-	-
Swimming Pool Fee	500	500	-	-	-	-
Campus Development Fee	500	500	-	-	-	-
Alumni Association	1000	-	-	-	-	-
<b>Hostel Fee (for Hosteller)</b>						
i) Admission Fee	750	-	-	-	-	-
ii) Hostel Rent (including water/electricity charges)	5000	5000	5000	5000	5000	5000
i) Boys (Single room accommodation)	5000	5000	5000	5000	5000	5000
ii) Girls (Single room accommodation)						

**Note:** Candidates ~~those~~ who have extended their programme beyond 3 years have to pay the same fee as of III year.

### Fee structure for internal candidates for PhD programme. (Part time candidates)

Tuition fee = Rs.5000 per year

Institute Development Contribution = Rs.6000 first year

Alumni Association = Rs.1000 (one-time payment at the time admission)

### Mess Fees (At Hostel Office) for Hostellers

	<b>Ph.D.</b>
1. Admission Fee	100.00
2. Establishment Charges – per semester	7,500.00
2. Maintenance	2,500.00
3. Students Extra Curricular	500.00
4. Mess Advance – Every semester	15,000.00
	=====
	25,600.00*
	=====

Mess Fee structure is tentative subject to revision.

**Note: Refund of fees and deposits paid for Institute admission:**

Any student who withdraws admission before the closing date of admission is eligible for the refund of all the fees and deposits, after deduction of a processing fee of Rs.1000 /- (Rupees One Thousand Only)

**Ragging: If any incident of ragging comes to the notice of the authority, concerned student shall be given liberty to explain and if his explanation is not found satisfactory, the authority would expel him / her from the institution.**

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