



राष्ट्रीय प्रौद्योगिकी संस्थान, दुर्गापुर  
**National Institute of Technology  
Durgapur  
INDIA**

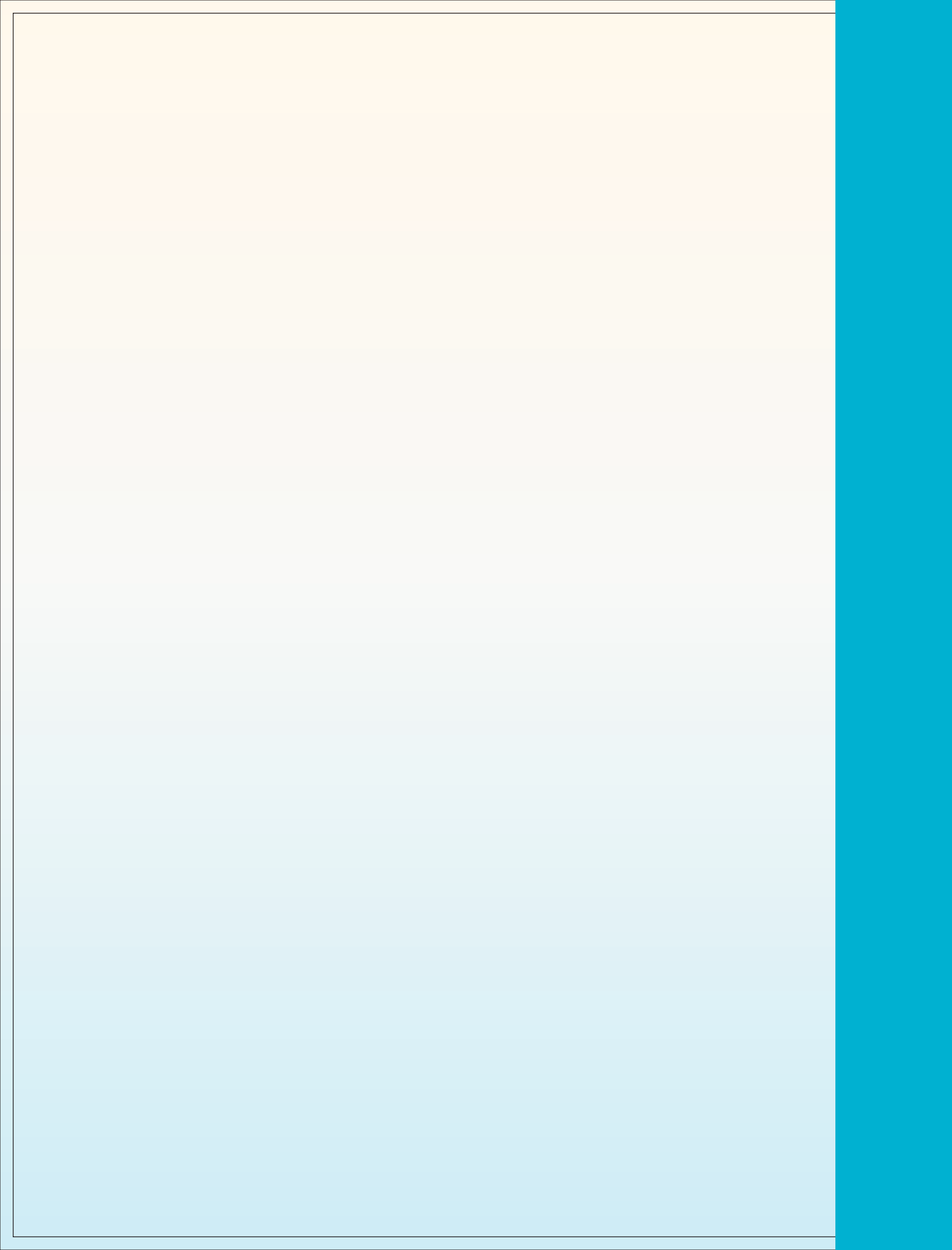
(An Institute of National Importance under  
Government of India, Ministry of Human Resource Development)

UG & PG  
Programmes

**ACADEMIC  
BROCHURE**

2017-2018







राष्ट्रीय प्रौद्योगिकी संस्थान दुर्गापुर

**ACADEMIC BROCHURE 2017-18**

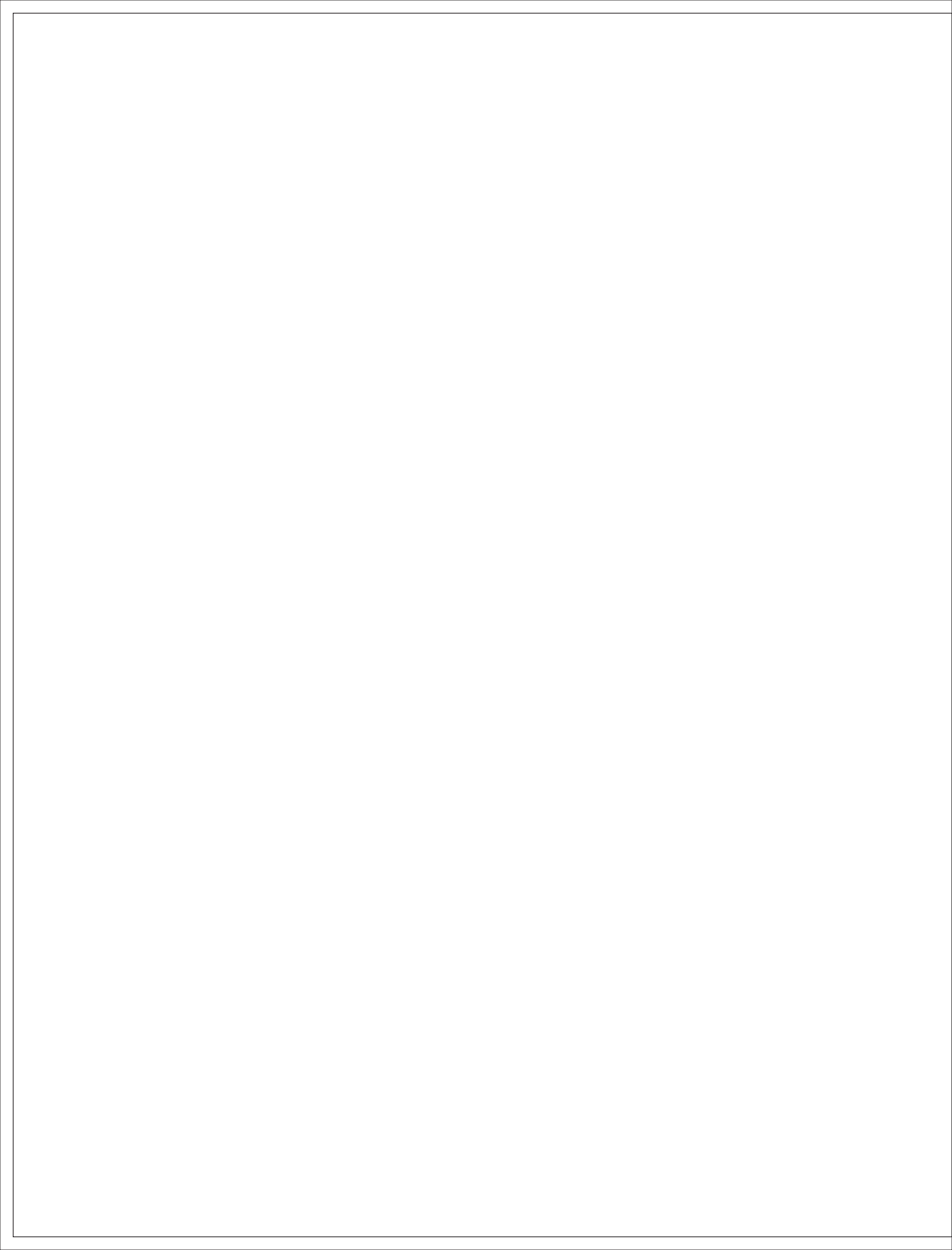
UG & PG Programmes



**National Institute of Technology Durgapur**

(An Institute of National Importance under Government of India, Ministry of Human Resource Development)

Mahatma Gandhi Avenue, Durgapur, West Bengal, india - 713209







## राष्ट्रीय प्रौद्योगिकी संस्थान दुर्गापुर

(मानव संसाधन बिकास मंत्रालय, भारत सरकार के अधीन राष्ट्रीय महत्व का संस्थान)  
महात्मा गांधी एभेन्यू, दुर्गापुर - 713209, (पश्चिम बंगाल), भारत

### **National Institute of Technology Durgapur**

(An Institute of National Importance under Government of India, Ministry of Human Resource Development)  
Mahatma Gandhi Avenue, Durgapur, West Bengal, India - 713209

### **DIRECTOR'S MESSAGE**

I am happy to release the Academic Brochure for the academic session 2017-18. The curriculum has been modernized with quite a few salient features, which have been incorporated in the brochure. The undergraduate curriculum now has slightly reduced credit requirements, but the provision of optional co-curriculum activity has been kept in all semester. The specially bright students will also have the opportunity of utilizing their final semester through individual internship in accordance to the rules of the institute. The brochure houses the details of each program, program outcomes, the departmental and other institutional facilities.

I thank the staff member for taking the pain of preparing an excellent brochure. I extend my best wishes to all the students and faculty members.

***Professor Anupam Basu***

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# VISION & MISSION

## VISION:

To impart quality technical education and focus on research and innovation to cater to the need of the country

## MISSION:

1. To impart quality technical and scientific education and produce engineers, technologists, scientists and citizens who will contribute meaningfully to the growth and development of the country and excel in various disciplines of knowledge
2. To initiate the students to research-oriented teaching-learning environment in the Institute with a focus on excellence and innovation



# INTRODUCTION

The history of the Institute dates back to 1960 when by an act of the parliament, Regional Engineering College was founded at Durgapur as one of the eight such colleges in the country by the Government of India in partnership with the Government of West Bengal to cater the needs of several major industries located in the region. Over the years the institute has served the region and the nation as a major education centre for grooming engineers and technologists by providing highest standard of technical education. The college received a major recognition in 2003 when it was elevated to National Institute of Technology (N.I.T.) as a “deemed university” with a fully - funded premier technological institution administered by an autonomous Board of Governors under the Ministry of Human Resource Development, Government of India. The transformation from ‘Regional’ to ‘National’ and from “college” to “Institute” demanded dedicated efforts from its staff and faculty members. Thanks to these collective efforts together with generous funding from the Govt. of India, the institute has since observed an accelerated growth resulting in significant improvement in its infrastructure in all areas (quality of teachers, staff, laboratories, hostels, class rooms etc.).

N.I.T. Durgapur is the first institute in Eastern India to be selected as a Lead Institute under the Technical Education Quality Improvement Program (TEQIP) of the Govt. Of India funded by the World Bank. In 2007, the institute received a final feather to its cap when the Union Government of India declared it as an “Institute of National Importance”. With the increased funding coming from the government, the institute has been setting up state - of - the - art laboratories and modernizing the existing ones which paved the path for high quality research by its faculties and students necessary to meet the global challenges. The faculties have been continuously updating themselves through various faculty development schemes which they are regularly implementing in developing new curriculum / courses and revising the existing ones in order to meet the industrial / social demand. The rapid shift of focus to research has also resulted in the steep rise in the research output indicators (journal and conference papers) and sponsored projects.

Currently the Institute offers nine four - year B. Tech. programmes in the disciplines of Biotechnology, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Electronics and Communication Engineering ,Information Technology, Mechanical Engineering, Metallurgical and Materials Engineering with a total annual intake around 900 including Indian and foreign students. The institute also offers nineteen M.Tech. programmes, three M.Sc. programmes, one MCA, one MBA and Ph.D. programmes by all departments. In addition, a good number of foreign students also study here.



The institute strongly encourages its students to carry out their internship in industries and academia all over the world for which they receive financial support from the institute. Financial support is also given to students to participate in conferences and present research papers in India and abroad. In addition, numerous scholarship are offered to students with poor financial background. In the past few years, UG students of the institute have done their internship in some of the most reputed institute / industries of India and abroad including IISE Bangalore ,IITs, CERN (Switzerland),NUS (Singapore),MIT (USA), University of Michigan(USA),Max Planck Institute ( Germany), ETH Zurich (Switzerland) to name a few. Each year the number of UG students doing internship abroad is rapidly increasing. The institute in continuous contact with the industries to identify projects of industrial problems for the benefit of the students and the society. Thanks to these alround efforts the institute has been able to ensure that even in the time of severe recession in economy, the student, placement has not been significantly influenced.

A large number of learning resources have been procured recently to improve the teaching - learning process.Campus -wide networking has been revamped and internet connectivity has been provided to student hostels. The institute library has a large collection of text and reference books as well many e - resources such as electronic journals of national and international reputation. To support the extracurricular skills of the students, several clubs and chapters exist in the campus which offers the platform to nourish skills in Sports,music,dance writing and social services etc. The institute also takes pride in owing a high - quality video - conference facility with 24 nodes - a facility among the best of its kind in the country. The institute is also undertaking some major infrastructural projects such as a new academic block with state - of - the - art class rooms having audio - visual arrangement, a girl's hostel, a boys' hostel, a VIP guest house having suits and conference Hall, a multi- storied faculty accommodation etc.



# CURRICULUM OF 2017

## UNDERGRADUATE ADMISSION BATCH

First semester and second semester are common to all branches of Engineering and 5-year Integrated Chemistry programme. Some of the subjects are grouped for interchange between first and second semester for half of the students totalling credit unit 38 in first year (1st and 2nd semester combined).

**L** = Lecture hour/ week; **T** = Tutorial hour/ week; **S** = Sessional/ practical hour/ week

**C** = Subject credit point; **H** = Subject contact hour/ week.

### SEMESTER - I

Sl. No	Code	Subject	L	T	S	C	H
1	MAC01	Mathematics - I	2	1	0	3.0	3
2	PHC01	Physics	2	1	0	3.0	3
3	CYC01	Chemistry	2	1	0	3.0	3
4	XEC01	Engineering Mechanics	2	1	0	3.0	3
5	ESC01	Environmental Science	2	0	0	2.0	2
6	BTC01	Life Science	2	0	0	2.0	2
7	PHS01	Physics Laboratory	0	0	2	1.0	2
8	CYS01	Chemistry Laboratory	0	0	2	1.0	2
9	WSS01	Workshop Practice	0	0	2	1.0	2
10	XES01	Co-curricular Activities - I	0	0	2	0.0	2
11	HSC01	Values and Ethics	0	0	0	0.0	0
		<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>8</b>	<b>19.0</b>	<b>24</b>

### SEMESTER - II

Sl. No	Code	Subject	L	T	S	C	H
1	MAC02	Mathematics - II	2	1	0	3.0	3
2	CSC01	Introduction to Computing	2	1	0	3.0	3
3	ECC01	Basic Electronics	2	1	0	3.0	3
4	EEC01	Electrical Technology	2	1	0	3.0	3
5	MES01	Engineering Graphics	1	0	2	2.0	3
6	CSS01	Computing Laboratory	0	0	2	1.0	2
7	ECS01	Basic Electronics Laboratory	0	0	2	1.0	2
8	EES01	Electrical Technology Laboratory	0	0	2	1.0	2
9	HSS01	Professional Communication	1	0	2	2.0	3
10	XES02	Co-curricular Activities - II	0	0	2	0.0	2
		<b>TOTAL</b>	<b>10</b>	<b>4</b>	<b>12</b>	<b>19.0</b>	<b>26</b>

## BIOTECHNOLOGY

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CHC331	Process Calculation and Thermodynamics	3	1	0	4.0	4
3	BTC301	Cell biology and Genetics	3	1	0	4.0	4
4	BTC302	Microbiology and Bioprocess Technology	3	1	0	4.0	4
5	BTC303	Biochemistry and Enzyme Technology	3	0	0	3.0	3
6	BTS352	Biochemistry Laboratory	0	0	3	1.5	3
7	BTS 351	Microbiology Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>6</b>	<b>22.0</b>	<b>25</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	BTC401	Molecular Biology and Recombinant DNA Technology	3	1	0	4.0	4
2	CHC431	Unit Operation of Chemical Engineering- I	3	1	0	4.0	4
3	BTC402	Immunology	3	1	0	4.0	4
4	CSC431	Programming and Data Structure	3	0	0	3.0	3
5	YYO44*/ HSC431	Open Elective - I/ Psychology	3	0	0	3.0	3
6	BTS451	Genetics and Cell Biology Laboratory	0	0	3	1.5	3
7	CHS481	Unit Operations of Chemical Engineering-I Laboratory	0	0	3	1.5	3
8	CSS481	Programming and Data Structure Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>9</b>	<b>22.5</b>	<b>27</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	BTC501	Biochemical Reaction Engineering and Bioreactor Design	3	1	0	4.0	4
2	BTC502	Cell and Tissue Culture	3	1	0	4.0	4
3	BTC503	Bioseparartion and Biochemical Analysis	3	1	0	4.0	4
4	CHC531	Unit Operations of Chemical Engineering-II	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	BT551	Immunology Laboratory	0	0	3	1.5	3
7	CHS581	Unit Operations of Chemical Engineering Laboratory- II	0	0	3	1.5	3
8	BT552	Bioprocess Technology Laboratory	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>9</b>	<b>23.5</b>	<b>28</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
2	CSC631	Database Management System	3	1	0	4.0	4
2	CHC631	Process Control and Instrumentation	3	1	0	4.0	4
4	BTE610--	Departmental Elective - 1	3	0	0	3.0	3
5	YYO64*	Open Elective - 3	3	0	0	3.0	3
6	BTS651	Molecular Biology and rDNA Technology Laboratory	0	0	3	1.5	3
7	CSS681	Database Management System Laboratory	0	0	3	1.5	3
8	BTS653	Bioinformatics	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>2</b>	<b>9</b>	<b>21.5</b>	<b>26</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	BTE710 --	Departmental Elective - 2	3	0	0	3.0	3
3	BTE710 --	Departmental Elective - 3	3	0	0	3.0	3
4	BTE710 --	Departmental Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	BTS751	Bioseparation and Biochemical Analysis Laboratory	0	0	3	1.5	3
7	BTS752	Cell and Tissue Culture Laboratory	0	0	3	1.5	3
8	BTS753	Biochemical Reaction Engineering Laboratory	0	0	3	1.5	3
9	BTS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	BTS755	Project - I	0	0	3	1.5	3
		<b>TOTAL</b>	<b>15</b>	<b>0</b>	<b>14</b>	<b>22.0</b>	<b>29</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	BTE810 --	Departmental Elective - 5	3	0	0	3.0	3
2	BTE810 --	Departmental Elective - 6	3	0	0	3.0	3
3	YYO84*	Open Elective - 5	3	0	0	3.0	3
4	BTS851	Project - II	0	0	15	5.0	15
4	BTS852	Project Seminar	0	0	0	1.0	0
5	BTS853	Viva Voce	0	0	0	1.0	0
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>15</b>	<b>16.0</b>	<b>24</b>



## CHEMICAL ENGINEERING

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CHC301	Process Calculations	3	1	0	4.0	4
3	CHC302	Chemical Engineering Thermodynamics	3	1	0	4.0	4
4	CHC303	Fluid Mechanics	3	1	0	4.0	4
5	CYC331	Chemistry - II	3	0	0	3.0	3
6	CYS381	Chemistry Laboratory- II	0	0	3	1.5	3
7	CHS351	Chemical Engineering Computing Laboratory- I	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>6</b>	<b>22.0</b>	<b>25</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	CHC401	Heat Transfer	3	1	0	4.0	4
2	CHC402	Mechanical Operation	3	1	0	4.0	4
3	CHC403	Mass Transfer- I	3	1	0	4.0	4
4	MEC431	Mechanical Design of Equipment and Components	3	0	0	3.0	3
5	YYO44*/ HSC431	Open Elective - I/ Psychology	3	0	0	3.0	3
6	CHS451	Fluid Mechanics Laboratory	0	0	3	1.5	3
7	CHS452	Process Equipment Design- I Sessional	0	0	3	1.5	3
8	WSS481	Workshop Practice- II	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>9</b>	<b>22.5</b>	<b>27</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	CHC501	Chemical Reaction Engineering	3	1	0	4.0	4
2	CHC502	Mass Transfer- II	3	1	0	4.0	4
3	CHC503	Chemical Process Technology	3	1	0	4.0	4
4	CHC504	Process Control and Instrumentation	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	CHS551	Heat Transfer Laboratory	0	0	3	1.5	3
7	CHS552	Mechanical Operations Laboratory	0	0	3	1.5	3
8	CHS553	Process Equipment Design- II Sessional	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>9</b>	<b>23.5</b>	<b>28</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
2	CHC601	Transport Phenomena	3	1	0	4.0	4
2	CHC602	Petroleum Refining and Petrochemicals	3	1	0	4.0	4
4	CHC603	Process Modeling and Simulation	3	0	0	3.0	3
5	YYO64*	Open Elective - 3	3	0	0	3.0	3
6	CHS651	Fuel Laboratory	0	0	3	1.5	3
7	CHS652	Reaction Engineering Laboratory	0	0	3	1.5	3
8	CHS653	Mass Transfer Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>2</b>	<b>9</b>	<b>21.5</b>	<b>26</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	CHE710 --	Departmental Elective - 1	3	0	0	3.0	3
3	CHE710 --	Departmental Elective - 2	3	0	0	3.0	3
4	CHE710 --	Departmental Elective - 3	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	CHS751	Process Control and Instrumentation Laboratory	0	0	3	1.5	3
7	CHS752	Chemical Engineering Computing Laboratory- II	0	0	3	1.5	3
8	CHS753	Computer Aided Process Equipment Design Laboratory	0	0	3	1.5	3
9	CHS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	CHS755	Project - I	0	0	3	1.5	3
		<b>TOTAL</b>	<b>15</b>	<b>0</b>	<b>14</b>	<b>22.0</b>	<b>29</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	CHE810 --	Departmental Elective - 4	3	0	0	3.0	3
2	CHE810 --	Departmental Elective - 5	3	0	0	3.0	3
3	YYO84*	Open Elective - 5	3	0	0	3.0	3
4	CHS851	Project - II	0	0	15	5.0	15
5	CHS852	Project Seminar	0	0	0	1.0	0
6	CHS853	Viva Voce	0	0	0	1.0	0
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>15</b>	<b>16.0</b>	<b>24</b>

## CIVIL ENGINEERING

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CEC301	Solid Mechanics	3	1	0	4.0	4
3	CEC302	Fluid Mechanics	3	0	0	3.0	3
4	CEC303	Building Construction and Concrete Technology	3	1	0	4.0	4
5	ESC331	Engineering Geology for Civil Engineering	3	0	0	3.0	3
6	ESS381	Engineering Geology Laboratory for Civil Engineering	0	0	0	3	1.53
7	CES351	Fluid Mechanics and Strength of Material Laboratory	0	0	0	3	1.53
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>6</b>	<b>21.0</b>	<b>24</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	CEC401	Structural Analysis-I	3	1	0	4.0	4
2	CEC402	Design of RC Structures	3	1	0	4.0	4
3	CEC403	Surveying	3	0	0	3.0	3
4	CSC432	Data Structure	3	0	0	3.0	3
5	YYO44*/	Open Elective - I/					
	HSC431	Psychology	3	0	0	3.0	3
6	CES451	Structural Analysis Sessional-I	0	0	3	1.5	3
7	CES452	Design of RC Structures Sessional	0	0	3	1.5	3
8	CSS482	Data Structure Seessional	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>2</b>	<b>9</b>	<b>21.5</b>	<b>26</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	CEC501	Structural Analysis-II	3	1	0	4.0	4
2	CEC502	Design of Steel Structures	3	1	0	4.0	4
3	CEC503	Soil Mechanics	3	0	0	3.0	3
4	CEC504	Transportation Engineering	3	1	0	4.0	4
5	CEC505	Environmental Engineering	3	0	0	3.0	3
6	YYO54*	Open Elective - 2	3	0	0	3.0	3
7	CES551	Structural Analysis Sessional-II	0	0	3	1.5	3
8	CES552	Design of Steel Structures Sessional	0	0	3	1.5	3
9	CES553	Environmental and Soil Mechanics Laboratory	0	0	3	1.5	3
10	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>18</b>	<b>3</b>	<b>9</b>	<b>25.5</b>	<b>30</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
2	CEC601	Water Resource Engineering	3	1	0	4.0	4
3	CEC602	Foundation Engineering	3	0	0	3.0	3
4	CEE610 --	Departmental Elective - 1	3	0	0	3.0	3
5	YYO64*	Open Elective - 3	3	0	0	3.0	3
6	CES651	Surveying and Transportation Engineering Laboratory	0	0	3	1.5	3
7	CES652	Computational Laboratory- I	0	0	3	1.5	3
8	CES653	Concrete Technology Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>1</b>	<b>9</b>	<b>20.5</b>	<b>25</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	CEE710 --	Departmental Elective - 2	3	0	0	3.0	3
3	CEE710 --	Departmental Elective - 3	3	0	0	3.0	3
4	CEE710 --	Departmental Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	CES751	Estimation and Valuation Sessional	0	0	3	1.5	3
7	CES752	Structural Engineering Laboratory	0	0	3	1.5	3
8	CES753	Computational Laboratory -II	0	0	3	1.5	3
9	CES754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	CES755	Project - I	0	0	3	1.0	3
		<b>TOTAL</b>	<b>15</b>	<b>0</b>	<b>14</b>	<b>21.5</b>	<b>29</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	CEE810 --	Departmental Elective - 5	3	0	0	3.0	3
2	CEE810 --	Departmental Elective - 6	3	0	0	3.0	3
3	YYO84*	Open Elective - 5	3	0	0	3.0	3
4	CES851	Project - II	0	0	15	5.0	15
4	CES852	Project Seminar	0	0	0	1.0	0
5	CES853	Viva Voce	0	0	0	1.0	0
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>15</b>	<b>16.0</b>	<b>24</b>



## COMPUTER SCIENCE AND ENGINEERING

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CSC301	Discrete Mathematics	3	0	0	3.0	3
3	CSC302	Digital Logic Design	3	0	0	3.0	3
4	CSC303	Data Structures and Algorithms	3	1	0	4.0	4
5	PHC331	Physics of Semiconductor Devices	3	0	0	3.0	3
6	PHS381	Semiconductor Devices Laboratory	0	0	3	1.5	3
7	CSS351	Digital Logic Design Laboratory	0	0	3	1.5	3
8	CSS352	Data Structures and Algorithms Laboratory	0	0	4	2.0	4
9	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
<b>TOTAL</b>			<b>15</b>	<b>2</b>	<b>10</b>	<b>22.0</b>	<b>27</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	CSC401	Computer Organization and Architecture	3	1	0	4.0	4
2	CSC402	Theory of Computation	3	0	0	3.0	3
3	CSC403	Design and Analysis of Algorithms	3	1	0	4.0	4
4	CSC404	Object Oriented Programming	2	0	0	2.0	2
5	CSC405	Signals and Systems	3	0	0	3.0	3
6	YYO44*/ HSC431	Open Elective - I/ Psychology	3	0	0	3.0	3
7	CSS451	Computer Organization Laboratory	0	0	3	1.5	3
8	CSS452	Object Oriented Programming Laboratory	0	0	3	1.5	3
9	CSS453	Signal Processing Laboratory	0	0	3	1.5	3
10	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
<b>TOTAL</b>			<b>17</b>	<b>2</b>	<b>9</b>	<b>23.5</b>	<b>28</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	CSC501	Operating Systems	3	0	0	3.0	3
2	CSC502	Database Management System	3	0	0	3.0	3
3	CSC503	Compiler Design	3	0	0	3.0	3
4	CSC504	Microcontroller based Systems	2	0	0	2.0	2
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	CSS551	Design and Analysis of Algorithms Laboratory	0	0	3	1.5	3
7	CSS552	Microcontroller based System Laboratory	0	0	3	1.5	3
8	CSS553	Operating Systems Laboratory	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
<b>TOTAL</b>			<b>14</b>	<b>0</b>	<b>9</b>	<b>18.5</b>	<b>23</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
2	CSC601	Software Engineering	2	0	0	2.0	2
3	CSC602	Data Communication and Computer Networks	3	0	0	3.0	3
4	CSE610 --	Departmental Elective - 1	3	0	0	3.0	3
5	YYO64*	Open Elective - 3	3	0	0	3.0	3
6	CSS651	Compiler Laboratory	0	0	3	1.5	3
7	CSS652	Data Communication and Computer Networks Laboratory	0	0	3	1.5	3
8	CSS653	Database Management System Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>14</b>	<b>0</b>	<b>9</b>	<b>18.5</b>	<b>23</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	CSE710 --	Departmental Elective – 2	3	0	0	3.0	3
3	CSE710 --	Departmental Elective - 3	3	0	0	3.0	3
4	CSE710 --	Departmental Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	CSS751	Software Engineering Laboratory	0	0	3	1.5	3
7	CSS752	Modelling and Simulation Laboratory	0	1	2	2.0	3
8	CSS753	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
9	CSS754	Project - I	0	0	3	1.0	3
		<b>TOTAL</b>	<b>15</b>	<b>1</b>	<b>10</b>	<b>20.5</b>	<b>26</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	CSE810 --	Departmental Elective - 5	3	0	0	3.0	3
2	CSE810 --	Departmental Elective - 6	3	0	0	3.0	3
3	YYO84*	Open Elective - 5	3	0	0	3.0	3
4	CSS851	Project - II	0	0	15	5.0	15
5	CSS852	Project Seminar	0	0	0	1.0	0
6	CSS853	Viva Voce	0	0	0	1.0	0
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>15</b>	<b>16.0</b>	<b>24</b>

## ELECTRICAL ENGINEERING

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	EEC301	Network Analysis and Synthesis	3	1	0	4.0	4
3	EEC302	Electrical and Electronics Measurements	3	1	0	4.0	4
4	ECC331	Analog Electronics	3	1	0	4.0	4
5	PHC332	Electromagnetic Field Theory	3	0	0	3.0	3
6	PHS382	Physics Laboratory	0	0	3	1.5	3
7	EES351	Electrical and Electronics Measurements Lab	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>6</b>	<b>22.0</b>	<b>25</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	EEC401	Power Systems - I	3	1	0	4.0	4
2	EEC402	Electrical Machines - I	3	1	0	4.0	4
3	EEC403	Digital Electronics	3	1	0	4.0	4
4	MEC431	Fluid and Thermal Engineering	3	0	0	3.0	3
5	YYO44*/ HSC431	Open Elective - I/ Psychology	3	0	0	3.0	3
6	EES451	Network and Circuit Laboratory	0	0	3	1.5	3
7	EES452	Analog Electronics Laboratory	0	0	3	1.5	3
8	MES481	Fluid and Thermal Engineering Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>9</b>	<b>22.5</b>	<b>27</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	EEC501	Power Electronics	3	1	0	4.0	4
2	EEC502	Control Systems	3	1	0	4.0	4
3	EEC503	Power Systems - II	3	1	0	4.0	4
4	EEC504	Electrical Machines - II	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	EES551	Digital Electronics Laboratory	0	0	3	1.5	3
7	EES552	Control Systems Laboratory	0	0	3	1.5	3
8	EES553	Electrical Machines Laboratory - I	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>9</b>	<b>23.5</b>	<b>28</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
2	EEC601	Advanced Power Systems	3	1	0	4.0	4
2	EEC602	Microprocessor and Microcontroller	3	1	0	4.0	4
4	EEE610 --	Departmental Elective - 1	3	0	0	3.0	3
5	YYO64*	Open Elective - 3	3	0	0	3.0	3
6	EES651	Electrical Machines - II Laboratory	0	0	3	1.5	3
7	EES652	Power Electronics Laboratory	0	0	3	1.5	3
8	EES653	Power System Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>2</b>	<b>9</b>	<b>21.5</b>	<b>26</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	EEE710 --	Departmental Elective - 2	3	0	0	3.0	3
3	EEE710 --	Departmental Elective - 3	3	0	0	3.0	3
4	EEE710 --	Departmental Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	EES751	Microprocessor and Microcontroller Laboratory	0	0	3	1.5	3
7	EES752	Advanced Power System Laboratory	0	0	3	1.5	3
8	EES753	Electrical machine Design Laboratory	0	0	3	1.5	3
9	EES754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	EES755	Project - I	0	0	3	1.5	3
		<b>TOTAL</b>	<b>15</b>	<b>0</b>	<b>14</b>	<b>22.0</b>	<b>29</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	EEE810 --	Departmental Elective - 5	3	0	0	3.0	3
2	EEE810 --	Departmental Elective - 6	3	0	0	3.0	3
3	YYO84*	Open Elective - 5	3	0	0	3.0	3
4	EES851	Project - II	0	0	15	5.0	15
4	EES852	Project Seminar	0	0	0	1.0	0
5	EES853	Viva Voce	0	0	0	1.0	0
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>15</b>	<b>16.0</b>	<b>24</b>



## ELECTRONICS AND COMMUNICATION ENGINEERING

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	ECC301	Networks and Transmission Lines	3	1	0	4.0	4
3	ECC302	Electronic Devices and Circuits- I	3	1	0	4.0	4
4	ECC303	Signals and Systems	3	1	0	4.0	4
5	PHC331	Physics of Semiconductor Devices	3	0	0	3.0	3
6	PHS381	Semiconductor Devices Laboratory	0	0	3	1.5	3
7	ECS351	Electronic Devices and Circuits Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>6</b>	<b>22.0</b>	<b>25</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	ECC401	Analog Communication	3	1	0	4.0	4
2	ECC402	Digital Electronics	3	1	0	4.0	4
3	ECC403	Electromagnetic Theory and Transmission Line	3	1	0	4.0	4
4	EEC431	Control Systems	3	0	0	3.0	3
5	YYO44*/ HSC431	Open Elective - I/ Psychology	3	0	0	3.0	3
6	ECS451	Analog Communication Laboratory	0	0	3	1.5	3
7	ECS452	Digital Electronics Laboratory	0	0	3	1.5	3
8	EES481	Control Systems Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>9</b>	<b>22.5</b>	<b>27</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	ECC501	Digital Communication	3	1	0	4.0	4
2	ECC502	Microwave Engineering	3	1	0	4.0	4
3	ECC503	Microprocessor and Embedded System	3	1	0	4.0	4
4	ECC504	Digital Signal Processing	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	ECS551	Digital Communication Laboratory	0	0	3	1.5	3
7	ECS552	Microprocessor and Embedded System Laboratory	0	0	3	1.53	1.53
8	ECS553	Electromagnetic and Microwave Engineering Laboratory	0	0	3	1.53	1.53
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>9</b>	<b>23.5</b>	<b>28</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
2	ECC601	Antenna and Wave Propagation	3	1	0	4.0	4
2	ECC602	VLSI Circuits and System	3	0	0	3.0	3
4	ECE611 --	Departmental Elective - 1	3	0	0	3.0	3
5	YYO64*	Open Elective - 3	3	0	0	3.0	3
6	ECS651	Signals and Digital Signal Processing Laboratory		0	0	3	1.53
7	ECS652	Antenna and Wave Propagation Laboratory	0	0	3	1.5	3
8	ECS653	Computer Aided Circuit Design Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>1</b>	<b>9</b>	<b>20.5</b>	<b>25</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	ECE711 --	Departmental Elective - 2	3	0	0	3.0	3
3	ECE711 --	Departmental Elective - 3	3	0	0	3.0	3
4	ECE711 --	Departmental Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	ECS751	VLSI System Design Laboratory (Piece Spice)	0	0	3	1.5	3
7	ECS752	Electronics Circuit Design Laboratory	0	0	3	1.5	3
8	ECS753	Advanced Communication Laboratory	0	0	3	1.5	3
9	ECS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	ECS755	Project - I	0	0	3	1.0	3
		<b>TOTAL</b>	<b>15</b>	<b>0</b>	<b>14</b>	<b>21.5</b>	<b>29</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	ECE811 --	Departmental Elective - 5	3	0	0	3.0	3
2	ECE811 --	Departmental Elective - 6	3	0	0	3.0	3
3	YYO84*	Open Elective - 5	3	0	0	3.0	3
4	ECS851	Project - II	0	0	15	5.0	15
4	ECS852	Project Seminar	0	0	0	1.0	0
5	ECS853	Viva Voce	0	0	0	1.0	0
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>15</b>	<b>16.0</b>	<b>24</b>

## MECHANICAL ENGINEERING

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	MEC301	Solid Mechanics	3	1	0	4.0	4
3	MEC302	Theory of Machines and Mechanisms	3	1	0	4.0	4
4	MEC303	Fluid Mechanics	3	1	0	4.0	4
5	MEC304	Engineering Thermodynamics	3	0	0	3.0	3
6	PHC333	Physics of Engineering Materials	3	0	0	3.0	3
7	PHS383	Physics of Engineering Materials Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>18</b>	<b>4</b>	<b>3</b>	<b>23.5</b>	<b>25</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	MEC401	Design of Machine Element	3	1	0	4.0	4
2	MEC402	Casting, Forming and Welding	3	1	0	4.0	4
3	MEC403	Heat and Mass Transfer	3	0	0	3.0	3
4	EEC432	Electrical Machines	3	0	0	3.0	3
5	YYO44*/ HSC431	Open Elective - I/ Psychology	3	0	0	3.0	3
6	MES451	Solid Mechanics Laboratory	0	0	3	1.5	3
7	MES452	Fluid Mechanics Laboratory	0	0	3	1.5	3
8	MES453	Mechanism Laboratory	0	0	3	1.5	3
9	EES482	Electrical Machines Laboratory	0	0	3	1.5	3
10	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>2</b>	<b>12</b>	<b>23.0</b>	<b>29</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	MEC501	Machining and Machine Tools	3	1	0	4.0	4
2	MEC502	IC Engine and Gas Turbines	3	0	0	3.0	3
3	MEC503	Machine Design	3	1	0	4.0	4
4	MEC504	Dynamics of Machines	2	1	0	3.0	3
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	MES551	Design and Dynamics Laboratory	0	0	3	1.5	3
7	MES552	Heat Transfer Laboratory	0	0	3	1.5	3
8	MES553	CAD/CAM Laboratory	0	0	3	1.5	3
9	MES554	Workshop	0	0	3	1.5	3
10	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>14</b>	<b>3</b>	<b>12</b>	<b>23.0</b>	<b>29</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
2	MEC601	Power Plant Engineering	2	1	0	3.0	3
3	MEC602	Industrial Engineering and OR	3	0	0	3.0	3
4	MEE610 --	Departmental Elective - 1	3	0	0	3.0	3
5	YYO64*	Open Elective - 3	3	0	0	3.0	3
6	MES651	Hydraulic Machine Laboratory	0	0	3	1.5	3
7	MES652	Power Generation Laboratory	0	0	3	1.5	3
8	MES653	Machine Design Sessional - I	0	0	3	1.5	3
9	MES654	Manufacturing Laboratory	0	0	3	1.5	3
10	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>14</b>	<b>1</b>	<b>12</b>	<b>21.0</b>	<b>27</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	MEE710 --	Departmental Elective - 2	3	0	0	3.0	3
3	MEE710 --	Departmental Elective - 3	3	0	0	3.0	3
4	MEE710 --	Departmental Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	MES751	Engineering Measurement Laboratory	0	0	3	1.5	3
7	MES752	Machine Design Sessional - II	0	0	3	1.5	3
8	MES753	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
9	MES754	Project - I	0	0	4	2.0	4
		<b>TOTAL</b>	<b>15</b>	<b>0</b>	<b>12</b>	<b>21.0</b>	<b>27</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	MEE810 --	Departmental Elective - 5	3	0	0	3.0	3
2	MEE810 --	Departmental Elective - 6	3	0	0	3.0	3
3	YYO84*	Open Elective - 5	3	0	0	3.0	3
4	MEC851	Project - II	0	0	15	5.0	15
5	MES852	Project Seminar	0	0	0	1.0	0
6	MES853	Viva Voce	0	0	0	1.0	0
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>15</b>	<b>16.0</b>	<b>24</b>

## METALLURGICAL AND MATERIALS ENGINEERING

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics- III	3	1	0	4.0	4
2	MMC301	Metallurgical Thermodynamics and Kinetics	3	1	0	4.0	4
3	MMC302	Introduction of Metallurgy and Materials	3	1	0	4.0	4
4	MMC303	Non - Ferrous Process Metallurgy	3	1	0	4.0	4
5	ESC332	Economic Geology	3	0	0	3.0	3
6	ESS382	Economic Geology Laboratory	0	0	3	1.5	3
7	MMS351	Metallurgical Thermodynamics and Kinetics Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>6</b>	<b>22.0</b>	<b>25</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	MMC401	Transport Phenomena in Metallurgical Processes	3	1	0	4.0	4
2	MMC402	Phase Transformation and Phase Equilibria	3	1	0	4.0	4
3	MMC403	Materials Characterization	3	1	0	4.0	4
4	YYO44*/ HSC431	Open Elective - I/ Psychology	3	0	0	3.0	3
5	CSC433	Data Structures	3	0	0	3.0	3
6	CSC483	Data Structures Laboratory	0	0	3	1.5	3
7	MMS451	Transport Phenomena Laboratory	0	0	3	1.5	3
8	MMS452	Phase Transformation and Phase Equilibria Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>9</b>	<b>22.5</b>	<b>27</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	MMC501	Manufacturing Processes	3	1	0	4.0	4
2	MMC502	Heat Treatment of Materials	3	1	0	4.0	4
3	MMC503	Fundamentals of Plastic Deformation and Strengthening of Materials	3	1	0	4.0	4
4	MMC504	Iron Making	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	MMS551	Manufacturing Processes Laboratory - I	0	0	3	1.5	3
7	MMS552	Heat Treatment of Materials Laboratory	0	0	3	1.5	3
8	MMS553	Plastic Deformation and Strengthening of Materials Laboratory	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>9</b>	<b>23.5</b>	<b>28</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
2	MMC601	Steel Making	3	1	0	4.0	4
2	MMC602	Mechanical Working of Materials	3	0	0	3.0	3
4	MME610 --	Departmental Elective - 1	3	0	0	3.0	3
5	YYO64*	Open Elective - 3	3	0	0	3.0	3
6	MMS651	Mineral Beneficiation Laboratory	0	0	3	1.5	3
7	MMS652	Mechanical Working of Materials Laboratory	0	0	3	1.5	3
8	MMS653	Material Characterization Laboratory -I	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>1</b>	<b>9</b>	<b>20.5</b>	<b>25</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	MME710 --	Departmental Elective - 2	3	0	0	3.0	3
3	MME710 --	Departmental Elective - 3	3	0	0	3.0	3
4	MME710 --	Departmental Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	MMS751	Manufacturing Processes Laboratory - II	0	0	3	1.5	3
7	MMS752	Material Characterization Laboratory -II	0	0	3	1.5	3
8	MMS753	Ferrous Process Metallurgy Laboratory	0	0	3	1.5	3
9	MMS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	MMS755	Project - I	0	0	3	1.0	3
		<b>TOTAL</b>	<b>15</b>	<b>0</b>	<b>14</b>	<b>21.5</b>	<b>29</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	MME810 --	Departmental Elective - 5	3	0	0	3.0	3
2	MME810 --	Departmental Elective - 6	3	0	0	3.0	3
3	YYO84*	Open Elective - 5	3	0	0	3.0	3
4	MMC851	Project - II	0	0	15	5.0	15
4	MMC852	Project Seminar	0	0	2	1.0	2
5	MMC853	Viva Voce	0	0	0	1.0	0
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>17</b>	<b>16.0</b>	<b>26</b>



## INFORMATION TECHNOLOGY

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	ITC301	Discrete Mathematics	3	0	0	3.0	3
3	ITC302	Digital Electronics	3	0	0	3.0	3
4	ITC303	Data Structures and Algorithms	3	1	0	4.0	4
5	PHC331	Physics of Semiconductor Devices	3	0	0	3.0	3
6	PHS381	Semiconductor Devices Laboratory	0	0	3	1.5	3
7	ITS351	Digital Electronics Laboratory	0	0	3	1.5	3
8	ITS352	Data Structures and Algorithms Laboratory	0	0	4	2.0	4
9	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>2</b>	<b>10</b>	<b>22.0</b>	<b>27</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	ITC401	Computer Organization and Architecture	3	1	0	4.0	4
2	ITC402	Theory of Computation	3	0	0	3.0	3
3	ITC403	Algorithm Design and Analysis	3	1	0	4.0	4
4	ITC404	Object Oriented Technology	2	0	0	2.0	2
5	CSC405	Signals and Systems	3	0	0	3.0	3
6	YYO44*/ HSC431	Open Elective - I/ Psychology	3	0	0	3.0	3
7	ITS451	Computer Organization Laboratory	0	0	3	1.5	3
8	ITS452	Object Oriented Technology Laboratory	0	0	3	1.5	3
9	CSS453	Signal Processing Laboratory	0	0	3	1.5	3
10	XSS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>17</b>	<b>2</b>	<b>9</b>	<b>23.5</b>	<b>28</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	ITC501	Operating Systems	3	0	0	3.0	3
2	ITC502	Database Management System	3	0	0	3.0	3
3	ITC503	Principles of Language Translation	3	0	0	3.0	3
4	ITC504	Microcontroller based Systems	2	0	0	2.0	2
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	ITS551	Algorithm Design Laboratory	0	0	3	1.5	3
7	ITS552	Microcontroller based System Laboratory	0	0	3	1.5	3
8	ITS553	Operating Systems Laboratory	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>14</b>	<b>0</b>	<b>9</b>	<b>18.5</b>	<b>23</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
2	ITC601	Software Engineering	2	0	0	2.0	2
3	ITC602	Computer Networks	3	0	0	3.0	3
4	ITE610 --	Departmental Elective - 1	3	0	0	3.0	3
5	YYO64*	Open Elective - 3	3	0	0	3.0	3
6	ITS651	Compiler Laboratory	0	0	3	1.5	3
7	ITS652	Computer Networks Laboratory	0	0	3	1.5	3
8	ITS653	Database Management System Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>14</b>	<b>0</b>	<b>9</b>	<b>18.5</b>	<b>23</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	ITE710 --	Departmental Elective – 2	3	0	0	3.0	3
3	ITE710 --	Departmental Elective - 3	3	0	0	3.0	3
4	ITE710 --	Departmental Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	ITS751	Software Engineering Laboratory	0	0	3	1.5	3
7	ITS752	Modelling and Simulation Laboratory	0	1	2	2.0	3
8	ITS753	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
9	ITS754	Project - I	0	0	3	1.0	3
		<b>TOTAL</b>	<b>15</b>	<b>1</b>	<b>10</b>	<b>20.5</b>	<b>26</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	ITE810 --	Departmental Elective - 5	3	0	0	3.0	3
2	ITE810 --	Departmental Elective - 6	3	0	0	3.0	3
3	YYO84*	Open Elective - 5	3	0	0	3.0	3
4	ITC851	Project - II	0	0	15	5.0	15
5	ITC852	Project Seminar	0	0	0	1.0	0
6	ITC853	Viva Voce	0	0	0	1.0	0
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>15</b>	<b>16.0</b>	<b>24</b>

## CHEMISTRY (5-YEAR INTEGRATED MSc)

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CYC301	State of Matter and Chemical Thermodynamics	3	1	0	4.0	4
3	CYC302	Atomic Structure and Chemical Bonding	3	1	0	4.0	4
4	CYC303	Stereo chemistry and Basic Principle of Organic Chemistry	3	1	0	4.0	4
5	PHC334	Physics - II	3	0	0	3.0	3
6	PHS384	Physics- II Laboratory	0	0	3	1.5	3
7	CYS351	Qualitative Analysis of Organic Samples Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>6</b>	<b>22.0</b>	<b>25</b>

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	CYC401	Biochemistry: Structure and Function	3	0	0	3.0	3
2	CYC402	Phase-Equilibrium, Chemical Kinetics and Catalysis	3	1	0	4.0	4
3	CYC403	Chemistry of Elements and Radioactivity	3	1	0	4.0	4
4	CYC404	Organic Reaction Mechanism and Reactive Intermediates	3	1	0	4.0	4
5	YYE44*/ HSC431	Open Elective - I/ Psychology	3	0	0	3.0	3
6	CYS451	Thermodynamic Properties of Solution and Mixture Laboratory	0	0	4	2.0	4
7	CYS452	Identification of Acidic and Basic Radicals Laboratory	0	0	4	2.0	4
8	CYS453	Biochemistry Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>11</b>	<b>23.5</b>	<b>29</b>

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	CYC501	Fundamentals of Electrochemistry and Surface Chemistry	3	1	0	4.0	4
2	CYC502	Chemistry in Solution and Solid State Chemistry	3	1	0	4.0	4
3	CYC503	Chemistry of Heterocyclic Compounds and Natural Products	3	1	0	4.0	4
4	CYC504	Industrial Chemistry	3	0	0	3.0	3
5	YYE54*	Open Elective - 2	3	0	0	3.0	3
6	CYS551	Chemical Kinetics, Surface Chemistry and Conductometry	0	0	3	1.5	3
7	CYS552	Quantitative estimation of metal ions in mixture	0	0	4	2.0	4
8	CYS553	Quantitative Analysis of Organic Samples	0	0	3	1.5	3
9	XXS581	Co-curricular Activities- V (optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>10</b>	<b>23.0</b>	<b>28</b>

**Semester - VI**

Sl. No.	Code	Subject	L	T	S	C	H
1	CYC601	Basics of Photochemistry, Spectroscopy, Group Theory and Data Analysis	3	1	0	4.0	4
2	CYC602	Coordination Chemistry	3	1	0	4.0	4
3	CYC603	Reagents in Organic Synthesis	3	1	0	4.0	4
4	CYE610 --	Departmental Elective-1	3	0	0	3.0	3
5	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
6	CYS651	Potentiometric and Colorimetric Analysis	0	0	3	1.5	3
7	CYS652	Analysis of Ores and Alloys	0	0	4	2.0	4
8	CYS653	Single Step Synthesis of Organic Compounds	0	0	3	1.5	3
9	CYS654	Comprehensive Viva Voce - I	0	0	0	1.0	
10	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>10</b>	<b>24.0</b>	<b>28</b>

**Semester - VII**

Sl. No.	Code	Subject	L	T	S	C	H
1	CYC701	Quantum Chemistry and Spectroscopy	3	1	0	4.0	4
2	CYC702	Inorganic Reaction Mechanisms and Magnetochemistry	3	1	0	4.0	4
3	CYC703	Concept of Organic Synthesis and Asymmetric Synthesis	3	1	0	4.0	4
4	CYC704	Mathematical and Computational Chemistry	3	0	0	3.0	3
6	CYS751	Spectrophotometric Analysis	0	0	3	1.5	3
7	CYS752	Spectrophotometric Estimation of Cations and Anions	0	0	3	1.53	1.53
8	CYS753	Separation and Identification of Organic Compounds from Binary Mixture	0	0	4	2.0	4
		<b>TOTAL</b>	<b>15</b>	<b>3</b>	<b>10</b>	<b>23.0</b>	<b>28</b>

**Semester - VIII**

Sl. No	Code	Subject	L	T	S	C	H
1	CYC801	Chemical, Statistical Thermodynamics and Electrochemistry	3	1	0	4.0	4
2	CYC802	Organometallic Compounds and Bioinorganic Chemistry	3	1	0	4.0	4
3	CYC803	Pericyclic Reactions and Organic Photochemistry	3	1	0	4.0	4
4	CYE810 --	Departmental Elective- 2	3	0	0	3.0	3
5	CYS851	Advanced Practical Physical Chemistry	0	0	4	2.0	4
6	CYS852	Synthesis and Characterisation of Complex Compounds	0	0	3	1.5	3
7	CYS853	Chromatographic Separation of Organic Compounds	0	0	3	1.53	1.53
		<b>TOTAL</b>	<b>12</b>	<b>3</b>	<b>10</b>	<b>20.0</b>	<b>25</b>

Semester - IX							
Sl.	Code	Subject	L	T	S	C	H
1	CYE910 --	Departmental Elective -3	3	0	0	3.0	3
2	CYE910 --	Departmental Elective - 4	3	0	0	3.0	3
3	CYE910 --	Departmental Elective - 5	3	0	0	3.0	3
4	CYE910 --	Departmental Elective-6	3	0	0	3.0	3
5	CYS960 --	Departmental Elective Sessional	0	0	4	2.0	4
6	CYS951	Project- I	0	0	6	2.0	6
7	CYS952	Vocational training/ Summer internship/ Term Paper	0	0	0	0	1.00
8	CYS953	Comprehensive Viva Voce - II	0	0	0	1.0	0
		<b>TOTAL</b>	<b>12</b>	<b>0</b>	<b>10</b>	<b>18.0</b>	<b>22</b>

Semester - X							
Sl.	Code	Subject	L	T	S	C	H
1	CYS1051	Project – II/Internship	0	0	30	10.0	30
2	CYS1052	Seminar & Viva voce	0	0	0	2.0	0
		<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>12.0</b>	<b>30</b>

**The Elective Code and subject name (both departmental and open) will be displayed to the students prior to the corresponding semesters.**

**Minor changes in subject code, subject name and subject credit may take place prior to commencement of the semester.**

# ACADEMIC SECTION



Dean ( <i>Academic</i> )	:	S. Ghosh
Dean ( <i>R&amp;C</i> )	:	S. Chattapadhyay
Associate Dean ( <i>Academic</i> )	:	P.S. Bhowmik
	:	N.B. Hui
	:	S. Roy Barman
Associate Dean ( <i>R&amp;C</i> )	:	A. Chakrabarty
	:	S. Bera
Dy. Registrar ( <i>Academic &amp; Examinations</i> )	:	D. Ray



Mr. Sumit Biswas	:	Sr. Superintendent
Mr. Timir Galui	:	Asst. (Grade II)
Mr. Sajal Biswas	:	Office Peon



# Department of **BIOTECHNOLOGY**



## *How did we end up here?*

Very few areas of science can successfully answer this question, but the Department of Biotechnology is at the helm of it. With the advent of Stem Cells, Genetic History and DNA modulation, we currently have all the answers. The toughest task ahead is finding out the right questions.

Since the 2000s, the Biotechnology Boom has been very similar to the Technology Boom of the 1990s. Very rarely, do you see such a small world affect us in such a big way. The Department promotes well-round knowledge in the field of Biotechnology as well as motivates students to take up invigorating research and innovation.

Remember, an unfortunate accident was all it took for the discovery of penicillin. Genetics brought about a certain irony to the phrase 'behaving like a monkey', as well as conclusively answer whether a chicken or an egg came first.

Started in 2005, it is one of the newest and freshest departments. They include regular summer internships, both in India and abroad, as well as fellowships in the Khorana Program, KVPY, IAS, etc. The department even formed The Biotech Society, which regularly dwells in seminars from renowned scientists all over the world. The department has received over 5.6 crore in research projects (funded by DBT, DST, UGC, The Institution of Engineers, etc.), which has helped them develop state-of-the-art laboratories. Biotechnology has great prospects in the fields of Medical and Health Sciences, Animal Husbandry, Genetic Research, Environmental Biotechnology, Agriculture, etc. The department is accredited by the NBA.

## **VISION:**

- ⦿ To produce responsible citizens who can sincerely serve the society with honesty and integrity.
- ⦿ To focus on quality teaching and research and foster innovation in the field of Biotechnology to cater to the needs of society and of the country.

## **MISSION:**

- ⦿ To produce highly qualified, well-rounded and motivated graduates and postgraduates possessing adequate basic and technical knowledge and understanding in Biotechnology, who can provide service and eventually leadership to the nation and to the world
- ⦿ To pursue creative research and develop new technologies in the field of Biotechnology, which can contribute to the industry and to academia

**PROGRAMME EDUCATIONAL OBJECTIVES(PEOS):**

1. The graduates of the programme will have in-depth knowledge of the subjects and successful technical professional careers in Biotechnology and related fields.
2. Graduates of the programme will continue to learn and to adapt in a world of constantly evolving technology

**PROGRAM OUTCOMES:**

1. Ability to apply knowledge of mathematics, science, and engineering.
2. Ability to design and conduct experiments, as well as to analyze and interpret data.
3. Ability to design and analyze systems, components or processes to meet desired needs within realistic constraints.
4. Ability to identify, formulate, solve technological problems with their multidisciplinary skills and develop an understanding of professional and ethical responsibilities.
5. To generate a broad educational knowledge necessary to understand the impact of technical solutions in a global & societal context.
6. Recognition of the need for and an ability to engage in lifelong learning.
7. Knowledge of contemporary issues and ability to use the techniques, skills, and modern technological tools.
8. Ability to apply knowledge of mathematics, science, and engineering.
9. Ability to design and conduct experiments, as well as to analyze and interpret data.
10. Ability to design and analyze systems, components or processes to meet desired needs within realistic constraints.
11. Ability to identify, formulate, solve technological problems with their multidisciplinary skills and develop an understanding of professional and ethical responsibilities.
12. To generate a broad educational knowledge necessary to understand the impact of technical solutions in a global & societal context.
13. Recognition of the need for and an ability to engage in lifelong learning.
14. Knowledge of contemporary issues and ability to use the techniques, skills, and modern technological tools.

**COURSES OFFERED:**

- B. Tech in Biotechnology
- M. Tech in Biotechnology

**LABORATORIES WITH RESPECTIVE EQUIPMENTS:**

There are 6 well developed laboratories in the department For conducting teaching and research. They are:

- Biochemistry
- Microbiology
- Molecular Biology and rDNA Technology
- Fermentation Technology
- Bioinformatics
- Plant Biotechnology



**LIST OF SOME OF THE SOPHISTICATED EQUIPMENT IN BIOTECHNOLOGY LABORATORIES :**

1. Fermenter (NBS)
2. HPLC (Waters)
3. PCR (Eppendorf)
4. Stackable incubator shaker (NBS)
5. Gel Doc System (UVP)
6. CO2 Incubator (Nuair)
7. Ultrapure water system (Sartorius)
8. Sonicator (Sartorius)
9. Biosafety Cabinet (Esco)
10. Elisa Reader (Thermo)
11. Plant Growth Chamber
12. Plant tissue Culture Unit
13. -20 degree Centigrade Freezer (Celfrost, Remi)
14. Cooling Centrifuge (Eppendorf, Remi)
15. Weighing balance (Sartorius, Precisa)
16. UV-VIS spectrophotometer (Hitachi)
17. UV Transilluminator (UVP)
18. Protein Gel Apparatus
19. DNA Gel Apparatus
20. Lyophiliser

**RESEARCH ACTIVITIES:**

The department indulges in research related to Plant Biotechnology, Animal Biotechnology, Microbial Biotechnology, Environmental Biotechnology and Bioprocess Engineering.

**MEMBERS OF FACULTY:**

- ⦿ Dasgupta Mandal D., PhD (HOD)
- ⦿ Dey A., PhD
- ⦿ Chattopadhyay S., PhD
- ⦿ Aikat K., PhD
- ⦿ Mukhopadhyay S.S., PhD
- ⦿ Chaudhuri S., PhD
- ⦿ Dutta D., .PhD
- ⦿ KazyKhannam S., PhD
- ⦿ Ghosh M., PhD
- ⦿ Roy Barman S., PhD
- ⦿ Mahata N., PhD
- ⦿ Bhattacharjee A, PhD



# Department of **CIVIL ENGINEERING**

*“Civil engineers are among the most fortunate of men since they build their own monuments with public consent, public approval and often public money.”- John Prebble.*

Welcome to the department which literally builds everything around you. From the bridges, you cross to the building which will never collapse, all have originated from a drawing board somewhere. One of the most rigorous streams, the engineers have to be extremely proficient, often to multiple decimal places. One error in calculation could be catastrophic. The world literally rests on their shoulders. There is a reason why they call it a core branch in our country.

And with this proficiency and efficiency, the Department of Civil Engineering was established in the early 1960s and since its inception, it provided the UG course. Today after 50 years of its inception, it is one of the largest departments with about 20 faculties and numerous research scholars working on various fields. With the laboratories like Concrete and Structural Engineering Lab, Surveying Lab, Highway Engineering Lab, etc. it provides perfect platform for both under graduate and post-graduate students.

The department consistently conducts seminars, workshops and training courses for the benefit of not only the faculties and students but also working professionals from other institutes and industries. It also provides various consultancy services to various government departments in both private and public sectors, thus giving a right exposure to the students to the big projects going around the country. It is accredited by the NBA.



## **VISION:**

To impart quality technical education in Civil Engineering and focus on research and innovation in thrust areas of Civil and related areas of engineering

## **MISSION:**

1. To produce highly qualified, well-rounded and motivated graduates possessing fundamental understanding and knowledge in Civil Engineering, capable of providing service and leadership to the nation and the world
2. To pursue creative research and work on new technologies in Civil Engineering and other multidisciplinary areas in order to serve the needs of industry, & society
3. To achieve visibility by organization of & participation in conferences and other technical activities

**PROGRAM EDUCATIONAL OBJECTIVES (PEOS):**

- 1 Establish a confidence in basic / fundamental knowledge, problem solving skills, engineering experimental abilities and design capabilities for a successful civil engineering career.
- 2 Establish the knowledge and skills necessary for identifying and assessing design alternatives and the related social, Economic and public safety impacts.

**PROGRAM OUTCOMES (POS):**

- (a) Ability to apply knowledge of basic and natural sciences and engineering
- (b) Ability to conceptualize and conduct experiments, as well as to analyze and interpret data
- (c) Ability to design and analyze systems, components or processes to meet desired needs within realistic constraints
- (d) Ability to work in multi-disciplinary teams and grow leadership quality
- (e) Ability to identify, formulate, and solve problems related to civil engineering
- (f) Understanding of professional & ethical responsibilities
- (g) Ability to communicate effectively
- (h) Recognition of the need for, and an ability to continue life-long learning
- (i) Knowledge of contemporary issues
- (j) Ability to use the modern techniques, skills and latest equipment necessary for research in civil engineering
- (k) Ability to manage a project

**COURSES OFFERED:**

- B.Tech in civil engineering.
- M.Tech (Structural Engineering) & M.Tech (Geo-technical Engineering)

**FACILITIES:****Experimental and Computation Facilities with following laboratories :**

Concrete & Structural Engineering, PG Structural Engineering, Highway Engineering, Surveying, Environmental Engineering, Soil Mechanics & Foundation Engineering, Rock Mechanics & Water Resources Engineering, Actuator Laboratory and Strength of Materials Laboratory

**RESEARCH:****Activities (Research Interest) Nonlinear Analysis of Structures, Structural Control**

Earthquake Engineering, Concrete Structures, Assessment, Strengthening and Monitoring of Structures, Fixed & Floating Offshore Structures, Pollution Treatment, Environmental Geotechnics, Offshore Pipelines, Agricultural Crop Insurance Water Resource Engineering in a river plan form development, Erosion and Deposition around an island in a river.



**MEMBERS OF FACULTY:**

- Nanda R.P., PhD(HOD)
- Singha Roy D., PhD
- Ray P., PhD
- Bhattacharya K., PhD (Dean P&D)
- Das A., PhD
- Saha S., PhD (DAC Co-ordinator)
- Dwivedi V.K, PhD (Grievance officer)
- Bhattacharyya S., PhD (Chairman, Central Purchase Committee)
- Dutta A K., PhD
- Banik A.K., PhD (Nodal Officer Academic)
- Samanta A., PhD(PG Coordinator: Structure)
- Das D., PhD(Joint DAC Co-ordinator)
- Roy P., PhD
- Topdar P., PhD
- Pal S., PhD (PG Coordinator: Geo-tech)
- Karmakar S., PhD (Technical Advisor Civil Maintenance, UG Coordinator)
- Patra P., (Pursuing PhD)





# Department of **CHEMICAL ENGINEERING**

*“Chemistry is necessarily an experimental science: its conclusions are drawn from data, and its principles supported by evidence from facts.” -Michael Faraday*

In agreement with the above quotation, Chemistry needs to be experimented, with unwavering theories and undisputable results. The chemical engineers of the world pursue this stream to amalgamate the theories of chemistry and the practicality of engineering. Obviously enough, all the hydrocarbons and polymers need to benefit mankind in some way or the other. History has been on the side of Chemical Engineers, with each invention having its aspect of chemistry to it. Taking in 60+ students in the UG course, as well as 20+ in the PG course, the department has come miles from its humble beginning in 1964. It strives to increase its efficiency and proficiency with each coming year and batch of bright world changers. The numerous laboratories and advanced technology promote a very high standard of education. The job prospects are endless, with a number of engineers working in the fields of Energy engineering, Nuclear engineering, Petroleum, Product/process development, Analytical chemistry, Energy managing, Manufacturing, Mining, Production managing, Quality managing, etc.

## **VISION:**

To impart quality technical education in Chemical Engineering and focus on research and innovation in thrust areas of Chemical and related areas of engineering

## **MISSION:**

1. To produce highly qualified, well-rounded and motivated graduates possessing fundamental understanding and knowledge in Chemical Engineering, capable of providing service and leadership to the nation and the world
2. To pursue creative research and work on new technologies in Chemical Engineering and other multi-disciplinary areas in order to serve the needs of industry, & society
3. To achieve visibility by organization of & participation in conferences and other technical activities

## **PROGRAM EDUCATIONAL OBJECTIVES (PEO):**

1. The graduates of the program will have successful technical and professional career in Chemical Engineering and related fields.
2. Graduates of the program will continue to learn and to adapt in a world of constantly evolving technology.

**PROGRAMME OUTCOMES (PO)**

- Ability to apply knowledge of mathematics, science, and engineering
- Ability to design and conduct experiments, as well as to analyze and interpret data
- Ability to design and analyze systems, components or processes to meet desired needs within realistic constraints
- Ability to function in multi- disciplinary teams and grow leadership quality
- Ability to identify, formulate, and solve engineering problems
- Understanding of professional and ethical responsibility
- Ability to communicate effectively
- Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, energy, sustainability & societal context
- Recognition of the need for, and an ability to engage in life- long learning
- Knowledge of contemporary issues
- Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- Ability to manage a project
- Ability to carry out techno-economic analysis of engineering problems

**COURSES OFFERED:**

- B Tech in Chemical Engineering.
- Laboratories with respective equipments:*

**MEMBERS OF FACULTY:**

- Dutta S., PhD (HOD)
- Sadhukhan A.K., PhD Narayan C.M., PhD
- Sarkar J.P., Ph.D
- Gupta P.P., PhD Pal P. PhD
- Ghanta K.C., PhD
- Mandal T., PhD
- Halder G., PhD
- Paruya S., PhD
- Mandal M.K., PhD
- Sikader J., PhD
- Das B., PhD





# Department of **CHEMISTRY**



Since inception of the institute (1960), the Department is sincerely engaged in teaching the students of different engineering courses in both UG and PG levels. The Department began its supreme journey with M. Tech. Programme in Corrosion Science & Technology in 1987. Later on, M.Sc. in Chemistry has been introduced (2009). From 2017, the Department has started 5 years integrated M. Sc. course in Chemistry. The department is gifted with a galaxy of enthusiastic and dedicated faculty members.

Besides the quality teaching, the faculty members have also contributed a lot to elevate the prestige of the institute through their research activities of international standard. Over these

years, the department has observed a steady momentum of growth due to the cumulative efforts of the faculty members, motivated students and the supporting staffs.

The Department regularly organizes Summer/Winter Schools, Workshops, Seminars and Conferences which bring together nationally renowned scientists, persons engaged in academics and industry. The faculty members of this department are devoted to the research activities in various fields of chemistry such as Electrochemistry, Natural Product Chemistry, Photochemistry, Environmental Chemistry, Coordination Chemistry, Bioinorganic, Biophysical chemistry and others. At present, several DST sponsored research projects are going on where a number of research scholars are pursuing their Ph.D. work. Many externally funded projects have been completed successfully in the recent past. The faculty members are publishing research papers in reputed international journals (SCI) with impact factors at a regular basis. Achievement of the department has been acknowledged by DST, Gol by granting fund under DST-FIST Scheme to uplift academic excellence to the higher level.

*"Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less."*- Marie Curie.

## **VISION:**

- To be a globally recognized department in scientific and technical education through value-added teaching, research and innovation and producing quality human resources who can meet the challenges of the ever-changing, technology-based society.

## **MISSION:**

- To produce highly qualified, well- rounded, motivated and technologically sound students possessing fundamental understanding and knowledge in chemical science and technology, who will deliver service and leadership to the nation and the world and can fulfil the technological and socio-economic need of industry, government and society.

**PROGRAMME EDUCATIONAL OBJECTIVES:**

1. The pass outs of the programme will have successful professional career in the field of chemistry and chemical science in India and abroad.
2. Pass outs of the programme will continue to learn and adapt in a world of constantly evolving technology through research and development and to facilitate the socio-economic growth of the nation.

**PROGRAM OUTCOMES:**

1. Fundamental scientific knowledge in chemistry.
2. Ability to apply the knowledge to evaluate a real situation.
3. Knowledge and skill of modern scientific instrumentation in the related field.
4. Ability to design and conduct experiments, as well as to analyze and interpret data.
5. Ability to design and analyze systems, components or processes to meet desired needs within realistic constraints.
6. Ability to communicate effectively.
7. Recognition of the need for, and an ability to engage in lifelong learning.
8. Acquiring the quality to work as an individual and as a team member.
9. Ability to manage a project.
10. Sensitive to understand the societal, economic, environmental impact and sustainability.

**COURSES OFFERED:**

- |  |   |
|--|---|
| 1. B. Tech.                              | 2. M. Tech. in Corrosion Science and Technology (started in 1987) |
| 2. M. Sc. in Chemistry (Started in 2009) | 3. Integrated M. Sc. (Started in 2017)                            |

**FACILITIES:**

- a. **Photophysical Lab**  
Picosecond TCSPC setup
  - b. **Electrochemistry Lab**  
Electrochemical workstation  
Electrochemical Frequency Response analyzer
- PG (M. Sc.) Lab**  
Digital potentiometer  
pH meter  
Conductivity meter  
Digital polarimeter  
UV-Vis spectrophotometer  
Ultrapure water purification system
- UG (B. Tech.) Lab**  
Digital potentiometer  
pH meter  
Conductivity meter  
Digital polarimeter  
Colorimeter



- IV. **Synthesis & Analytical Laboratory**  
Bath & probe sonicators  
High speed centrifuge (low temperature)  
Rotary evaporator
- V. **Inorganic Synthesis and Environmental Laboratory**  
Atomic Absorption Spectrophotometer  
Cyclic voltammetry  
EPR Spectrometer  
Potentiometric titrator
- VI. **Natural Product & Biological Chemistry Laboratory**  
Computer controlled Bio-freezer  
Lyophilizer
- VII. **Bio-molecular Modelling Laboratory**  
Computational and modelling software
- VIII. **Instrumentation Laboratory -1**  
Gas Chromatograph
- IX. **Instrumentation Laboratory -2**  
UV-VIS Spectrophotometers  
FT-IR Spectrophotometer (Kbr)  
FT-IR Spectrophotometer (Zn-Se ATR)  
Fluorescence Spectrophotometer
- X. **Computer Laboratory cum Library**
- XI. **DST-FIST Supported Equipment**  
GC-MS  
CHNS Analyzer

### RESEARCH ACTIVITIES:

*The research activities involve the following domains-*

- ⦿ Bioinorganic Chemistry;
- ⦿ Coordination Chemistry: Organometallic Chemistry; Reaction Mechanism and Bioactivities of Pt and Pd complexes;
- ⦿ Protein Dynamics;
- ⦿ Electrochemistry: Corrosion Science and Technology;
- ⦿ Natural Product Chemistry: Polysaccharide Chemistry, Lipid Chemistry, Cryopreservation;
- ⦿ Food chemistry;
- ⦿ Analytical Chemistry;
- ⦿ Environmental Chemistry: Water and Wastewater treatment, Groundwater remediation, Green Chemistry, Nano material synthesis and its environmental applications;
- ⦿ Fluorescence Spectroscopy: Ultrafast laser spectroscopy, Chemosensors for different metal ions;

### MEMBERS OF FACULTY:

- ⦿ Sukul D., PhD (HOD)
- ⦿ Mukhopadhyay B.P., PhD
- ⦿ Maji M., PhD
- ⦿ Patra A., PhD
- ⦿ Saha R., PhD
- ⦿ Moi S., PhD
- ⦿ Chakrabarty J., PhD
- ⦿ Panja S., PhD
- ⦿ Adhikari U., PhD
- ⦿ Saha T., PhD





# Department of **COMPUTER SCIENCE AND ENGINEERING**

*"Whether you want to uncover the secrets of the universe, or you want to pursue a career in the 21st century, basic computer programming is an essential skill to learn." (Stephen Hawking)*

Started in the year 1991, the department progressed from having only 30 students all the way to facilitating a new building just for its students. The Department of Computer Science and Engineering, facilitating the B.Tech, M. Tech and PhD students, maintains its resolve to help students think and apply themselves. Yes, to think proactively and to utilise their work in the technical field, for the welfare of all - softwares that can



simplify daily work, research papers that can question unquestionable theories and designs that can change the definition of creativity itself. The technology never stoops from its revered standard and promotes an all-round education. The job prospects are infinite, ranging from Information systems managing, Systems analysis, Systems development, UX analysis, Web designing, Web development, Network engineering, PPC specialisation, UX designer, Web content managing, Data analysis all the way to Business analysis and even Games development.

## **VISION:**

The Computer Science and Engineering Department strives for excellence in creating, applying, and imparting knowledge in Computer Science and Engineering through comprehensive educational programs, research in collaboration with industry and government, dissemination through scholarly publications, and service to professional societies, the community, the state, and the nation

## **MISSION:**

1. To impart leading technical education in the field of Computer Science and to focus on research and innovation to cater to the need of the society
2. To produce quality engineers, scientists and researchers who are responsible citizens contributing to the progress of the nation.
3. To contribute to the latest advances in the field of Computer Science through cutting age research.

**PROGRAMME EDUCATIONAL OBJECTIVES (PEOS):**

1. To produce graduates engineers who would establish themselves as successful professionals having strong proficiency in basic science and mathematics and would have ability to use these tools to solve real life problems in their chosen fields of work.
2. The graduates will have the desired interpretation of the real world in the context of ethical, societal, environmental, technological issues through the knowledge acquired in multifarious courses taught in the programme.
3. To produce graduates engineers who would be good leaders of tomorrow and become a perfect team member for the assigned projects of chosen fields of work with effective communication, critical thinking and problem solving skills.
4. To produce graduates engineers who would be able to develop professional skills that will prepare them for immediate employment and for lifelong learning in advanced areas of computer science and related fields.

**PROGRAM OUTCOMES (PO):**

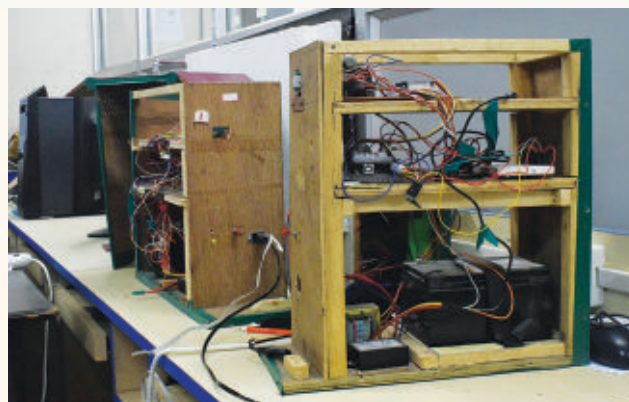
1. An ability to apply knowledge of computing, mathematics, science and engineering fundamentals appropriate to Computer Science and Engineering.
2. An ability to analyze a problem, developing problem solving skills, mathematical formulation and work flow design for solving the problem.
3. An ability to use state of the art techniques, skills, and modern tools necessary for computer science and engineering practices.
4. An understanding of professional, ethical, legal, security and social issues and responsibilities.
5. An ability to communicate effectively to make interactive and attractive with a range of audiences.
6. Understanding and ability to use advanced techniques and tools in multidisciplinary areas of computing to reach a common goal.
7. An understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects.

**COURSES OFFERED:**

- |   |                                     |
|---|-------------------------------------|
| 1. B Tech in Computer Science and Engineering | 2. B.Tech in Information Technology |
| 3. M Tech in Computer Science and Engineering | 4. M tech in Information Technology |
| 5. M Tech in Software Engineering             | 6. Master of Computer Application   |

**LABORATORY:**

Advanced Software Engg. Lab, Programming Lab, Advanced Operating System Lab, DBMS Lab, Project's/Research Lab, Image Processing Lab, Networks/Systems Lab, Micro Processor/Hardware Lab, AI Lab, Internet Programming Lab, Compiler Lab, DIST-FIST sponsored laboratories, VLSI Technology Lab, Vision and Computer Graphics Lab, Wireless Network Lab, Digital system & microprocessor Lab, communication Engineering Lab.



**EQUIPMENT:**

H.PNet Server E200 P-3, Pentium-3 Server Acer Model AA350, IBM RISC RS-6000 Model 240 (AIX 4.3), IBM X-series 205 E-Servers, Multiprocessor based servers running Enterprise Linux and windows, J2EE and Microsoft '.net' complete suite with IDE, MATLAB, Network simulator NS-2, UML design tools, swarm robot Development Kit, Ultrasound sensor with LABVIEW Software, CPLD Trainer Kit, FPGA Trainer Kit, Simulation Tools (Xilinx), Digital Storage Oscilloscope, CRO-25 MHz, Digital Multi meter, Embedded Development Kit S/W, 8085 Microprocessor Kit, Oscilloscope 30MHz, Dual Trace, Peripheral Kits (e.g. 8253, 8255, 8257, 8259, 8279, 8086 Microprocessor Kit), Digital IC Tester, Different IC chips like 7400, 7402, 7408, 7474, 7483, 6116, 7489, 74181 etc.

**SOFTWARE:**

Microsoft Windows-200 XP, Redhat EL-4, DB2 Enterprise Edition 5.2, Oracle 10g (server and Client version), Microsoft Visual Studio 7.0 (Enterprise Edition), TURBO Prolog & Aphelion, Lex and yacc tool.

**RESEARCH ACTIVITIES:**

Soft Computing, Machine Learning, VLSI, Database System, Cloud Computing, Big Data, Computer Architecture, Computer Networks, Mobile Computing, Robot Vision, Internet of Things, Natural Language Processing, Image Processing, Cryptography & Network Security, Software Engineering, Wireless Network, e-Governance, Digital e-Learning.

- 1) Convolutional Neural Network
- 2) Optical Character Recognition
- 3) Person Identification with Biometrics.

**MEMBERS OF FACULTY:**

- Sanyal G., PhD (HOD)
- Bhattacharjee S., PhD
- Chakraborty B., PhD.
- Chandran S., PhD
- Changder S., PhD
- Chatterjee R.
- Choudhury P., PhD
- Choudhury S., PhD
- Dalui M, PhD
- Das D., PhD
- Das S., PhD
- De T, PhD
- Dutta A., PhD
- Guha Thakurta P., PhD
- Howlader J., PhD
- Jana N. D., PhD
- Kisku D. R., PhD
- Maji, S.
- Mitra D, PhD
- Mukhopadhyay S, PhD
- Nandi D., PhD
- Nandi S, PhD
- Pal T., PhD
- Roy S., PhD
- Sadhu S.
- Saha M., PhD
- Saha S., PhD
- Sarkar A., PhD
- Sarker G., PhD
- Sen B., PhD
- Sharma A., PhD





# Department of **ELECTRICAL ENGINEERING**

*“Electrical science has disclosed to us the more intimate relation existing between widely different forces and phenomena and has thus led us to a more complete comprehension of Nature and its many manifestations to our senses.” - Nikola Tesla.*



In its very essence, Electrical Engineering runs our lives. Every time you flip on a switch or turn on the television, you have electrical engineers to thank. Every branch of engineering is connected to power, and they generate it while keeping us safe at the same time. Electrical Power is an extremely useful and extremely dangerous power to exploit, but they make it seem extremely easy.

Why do the engineers of this department have such mind-blowing and cutting-edge ideas? Well, truth be told, electric shocks aren't uncommon for these engineers!

In the most literal of ways, they are the most 'Powerful' engineers.

Established in 1960, the Department has progressed to offering a B.Tech. program for more than 90 students in professional laboratories. They strive to encourage technological advances in the field of Electrical Sciences. The department is innovative and experimental, hence receiving regular funds from NMEICT, which they regularly utilise to make their laboratories technically efficient. The job prospects never end, with great demand in the fields of Aerospace engineering, Broadcast engineering, Control and instrumentation engineering, Design engineering, Electrical science, Electronics, Network engineering, Nuclear engineering, Systems analysis.

## **VISION:**

To impart quality education catering the challenges of new technological advances in Electrical Sciences and to provide update knowledge in the state of the art technologies, keeping in view the needs of the industry in general and the country in particular and to achieve excellence in education and research.

## **MISSION:**

1. To impart quality education for producing qualified and motivated Engineers and Researchers who will contribute meaningfully to the growth and development of the country.
2. To encourage the faculties and the students for research-oriented teaching-learning environment in the department with a focus on excellence and innovation.
3. To pursue creative research and consultancy developing new technologies in Electrical Engineering in order to serve the needs of industry and country as a whole.
4. To create congenial atmosphere for collaborative research, consultancy and other technical activities.

**PROGRAM EDUCATIONAL OBJECTIVES (PEO):**

- ⦿ Excel in professional career and or higher education by possessing fundamental understanding and knowledge of Electrical Engineering.
- ⦿ Analyze real life problems. and be able to provide solution that is technically sound, economically feasible, socially acceptable and sustainable in a world of emerging technologies.
- ⦿ Acquiring knowledge of major technological advancements and research initiatives, and be able to drive industrial growth and technological advancement in the chosen field of interest.
- ⦿ Exhibit professionalism, ethical attitude, communication skills, team work and leadership quality in their profession and adapt to current trends by engaging in lifelong learning.

**PROGRAMME OUTCOMES (PO):**

1. An ability to apply knowledge of computing, mathematics, science and engineering fundamentals appropriate to Electrical Engineering.
2. An ability to analyze a problem, and identify and formulate the design requirements appropriate to for the solution.
3. An ability to design, implement, and evaluate an electrical system, process, component, or program to meet desired needs.
4. An ability to design and conduct experiments, as well as to analyze and interpret data.
5. An ability to use current techniques, skills, and modern tools necessary for electrical engineering practice.
6. An ability to analyze and design electrical systems with appropriate consideration for economy, reliability, social and environmental considerations.
7. Knowledge of contemporary issues.
8. An understanding of professional, ethical, legal, security and social issues and responsibilities.
9. An ability to function effectively individually and on teams, including diverse and multidisciplinary, to accomplish a common goal.
10. An ability to communicate effectively with a range of audiences.
11. Recognition of the need for and an ability to engage in continuing professional development.
12. An understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects.

**COURSES OFFERED:**

- ⦿ B.Tech in Electrical Engineering
- ⦿ M.Tech in Power systems
- ⦿ M.Tech in Power Electronics and Machine Drives

**LABORATORIES OF EE DEPARTMENT**

1. Electrical Machines & Drives Laboratory.
2. Advanced Drives Laboratory
3. Power System Laboratories I
4. Power System Laboratories II
5. Advanced Power System Laboratory
6. Power System Research Laboratory
7. Control Systems Laboratory.
8. Advance Control System Laboratory



9. Power Electronics Laboratory,
10. Microprocessor and Micro-controller Laboratory,
11. Energy Systems Laboratory,
12. Computation laboratory,
13. Measurements Laboratory,
14. High Voltage Laboratory,
15. Instrumentation Laboratory.
16. Electrical Technology Laboratory
17. Circuit Laboratory
18. Electrical Machine
19. Hardware Laboratory



### RESEARCH ACTIVITIES (RESEARCH INTEREST):

Application of Soft Computing Tools and Evolutionary Optimization in various fields of Power Systems, including FACTS devices, Distributed Generation, Distribution Networks, Power Quality Monitor placement, Power system dynamics & stability, FACTS Devices Smart Grid and Micro Grid, Economic Load Dispatch and Optimal Power Flow, Power system state estimation, Load Forecasting, High Voltage Engineering, Magnetic Fields in Power Lines, ICT enabled high voltage laboratories, Optimization in Antenna, Digital Filters, System Identification and VLSI design, Power Electronics, Machine Drives, Renewable Energy, Electromagnetic Levitation, Active Magnetic Bearing, Switch-mode converters and Inverters, controller design, Intelligent control, Signal Processing, Pattern Recognition, Process Control, Energy System Engineering, Numerical Computation of Electrostatic Field and Advanced Signal Processing Applications in Electrical Machines & Power System, Periodic & Robust Control, Mechatronics and Robotics, Control of Converters, Instrumentation, Biomedical Modeling.

### MEMBERS OF FACULTY:

- Acharjee P., PhD (HOD)
- Banerjee S., PhD Professor
- Ghoshal S.P., PhD Professor
- Dutta S.K., PhD Professor
- Thakur SS., PhD Professor
- Roy N. K., PhD Professor
- Ghosh S., PhD Professor
- Koley C., PhD
- Mahato S.N., PhD (PG Coordinators)
- Saha T.K., PhD
- Das A
- Bhowmik P.S., PhD (UG Coordinator)
- Barman J.C
- Dey J., PhD (PhD Coordinator)
- Sarkar S.
- Halder S., PhD





# Department of **ELECTRONICS AND COMMUNICATION ENGINEERING**

*"We should not give up and we should not allow the problem to defeat us"... A. P. J. Abdul Kalam*

The embryonic formation of the Department of Electronics and Communication Engineering was in the year 1983 with the introduction of an undergraduate course. Situated amidst lush green campus with teak plantations, the Department, over the time, has grown in several dimensions and provides a magnetic ambience in teaching and learning. Apart from the four years B. Tech course the Department also offers two full time M.Tech courses, one in Telecommunication Engineering and another in Microelectronics and VLSI. The Department also offers PhD in several areas. The faculties are engaged in research in diverse topics focussing on



Telecommunication, Antenna and Microwave, Microelectronics and VLSI, Signal and Image processing and Computational Systems Biology. It is well equipped with sophisticated laboratories in the areas of VLSI, Signal Processing, Microwave, Antenna and Wireless Communication. The Department has been supported by, SMDP for VLSI, DST-FIST for Wireless Communications and NPMAS for MEMS Research. Sponsored research from research initiation grant as well as DST and SERB have been initiated over the years. The Department has also received fund from TEQIP for its development. There are a significant number of institute research scholars presently carrying out PhD under the supervision of faculties while several part time research scholars are also registered for the PhD program. A large number of PhD has already been produced by the Department. The research strength has been reflected by quality publications of the Department. Faculties of the Department are involved in outreach activities by organizing several short term courses, workshops. Faculty members also have academic collaborations with Universities in and outside India. The Department is committed to impart quality education at undergraduate as well as postgraduate level and promulgate quality research in diverse fields of application in electronics engineering.

## **VISION:**

1. To produce highly competent and resourceful young engineers who can perform well in varied professions,
2. To develop a strong fundamental base which enables students to explore academic and collaborative interactions with industry, academia and research organizations.

## **MISSION:**

1. To advance and cater knowledge in the areas of Communication, Signal Processing and VLSI
2. To teach state of the art technologies to meet the growing challenges.
3. To carry research in frontier areas

## COURSES OFFERED

1. B.Tech programme in Electronics and Communication Engineering
2. M.Tech in Telecommunication Engineering
3. M.Tech in Micro-Electronics and VLSI.

### B.tech Programme: Programme Educational Objectives (PEOs)

PEO	PEO DESCRIPTION
PEO#1	<b>Knowledge of basic Science and Engineering:</b> To nurture ECE undergraduates with strong foundation in mathematics, sciences and basic engineering that will usher them towards innovation in areas such as Semiconductors, VLSI, Analog and Digital Integrated Circuits and Systems, Wireless Communications, Signal Processing, Antenna Engineering as well as Microwave Engineering.
PEO#2	<b>Engineering Design and Experimental Skills:</b> To train the students with practical engineering problem solving skills in order to provide them the platform where their contributions will be relevant to the general practice of Electronics and Communication system design and measurement. In conjunction to this the students will have exposure to regulatory ruling that govern the design principles and specifications.
PEO#3	<b>Fostering interest in Higher Education:</b> To encourage engineering graduates, with appropriate course modules, in preparing for competitive examinations that will help them to pursue higher studies including research in relevant disciplines.
PEO#4	<b>Technical Knowledge:</b> To foster the understanding of the students based on the fundamentals with flavour of advanced technical insights that will usher the students to face challenges to tackle complex electronics engineering problems.
PEO#5	<b>Incubating Professional and Ethical Attitude:</b> To nurture professional and ethical attitude, communication skills as well as develop the ability to contribute in group. Develop an ambience where the student can correlate technological aspects to social relevance with strong insight to contribute to the needs of industry, National research establishments and academia.

### M.Tech Micro-Electronics and VLSI Programme: Programme Educational Objectives (PEOs)

PEO	PEO DESCRIPTION
PEO#1	To generate manpower in the area of VLSI Design and related software make them ready for IC Design and Microelectronics industry.
PEO#2	To train ECE/EE/IT graduates competent for higher academic excellence collaborative research activity in the area of Circuit Design, CMOS Technology and Embedded Systems
PEO#3	Communicate effectively and convey ideas with lifelong learning using innovative engineering techniques both ethically and professionally

### M.Tech Telecommunication Engineering Programme: Programme Educational Objectives (PEOs)

PEO	PEO DESCRIPTION
PEO#1	The post graduates will have the desired interpretation of the real world in the context of ethical, societal, environmental, technological issues through the knowledge acquired in diverse courses taught in the programme.

<b>PEO#2</b>	The post graduates can inculcate new innovative ideas and skills in Electronics and Communication Engineering and other allied fields either theoretically or practically so that industry, academia and society as a whole could be benefited.
<b>PEO#3</b>	The post graduates will have the desired interpretation of the real world in the context of ethical, societal, environmental, technological issues through the knowledge acquired in diverse courses taught in the programme.
<b>PEO#4</b>	The post graduates can inculcate new innovative ideas and skills in Electronics and Communication Engineering and other allied fields either theoretically or practically so that industry, academia and society as a whole could be benefited.
<b>PEO#5</b>	The post graduates will be aware about the latest technological development in Electronics and Communication.
<b>PEO#6</b>	Creating an environment so that state of the art research can be carried out with the collaboration of faculties and students to have the international visibility.



## LABORATORIES, MAJOR FACILITIES AND SIMULATION SOFTWARE

### *Laboratories*

Analog Circuits Lab; Digital Circuit Electronics Lab; Communication Lab; Networks Lab; Microprocessor and Embedded Systems Lab; Microwave Lab; Microwave & Antenna Research Lab; (DST Sponsored) VLSI Laboratory; Nano Device Signal Processing lab; Departmental Computer Laboratory Simulation Laboratory

### *Major Facilities and Simulation Software*

**Advanced Comm. Lab:** LAB View; MIMO test bench; USRP box; Qualnet

**RF & Microwave Lab:** FEKO; ANSYS HF Suite; Microwave Office and CST Microwave Studio

**Microelectronics & VLSI:** Cadence; Synopsis; Mentor Graphics

**RF Measurement and Characterization Equipment:** ESA-L Series Spectrum Analyzer (9KHz-1.5GHz); Antenna Trainer Kit ST2262; Advanced Microwave Trainer Kit

**Microwave and Antenna Research Laboratory:** Spectrum Analyzer; NRP2 Power Meter; Power Sensor NVR-Z51 till 40 GHz; Vector Network Analyzer till 40 GHz

**Nano Device Fab Lab:** DC Sputter Coater; High Temperature Furnace; DI water System, Electrical Probe Station, Device Simulator (Silvaco),

## DEPARTMENT IS SUPPORTED BY VARIOUS SPONSORING AGENCIES

DST-FIST, TEQIP I, TEQIP II, DeITY, NPMASS, C2SD-SMDP III Project, DST-SERB



**MEMBERS OF FACULTY:**

● Bhattacharjee Anup Kumar, PhD	
● Chandra Anirudha, PhD	TPSW Representative PG Telecommunication Engg.
● Dhar Roy Sanjoy, PhD	
● Ghatak Rowdra, PhD	Head of the Department 2016-18
● Kar Rajib, PhD	
● Kundu Sumit, PhD	
● Mahanti Gautam K., PhD	
● Mahapatra Rajat, PhD	
● Maji Banshi Badan, PhD	
● Majumder Aurpan, PhD	Co-Coordinator (UG) and TPSW Representative UG
● Mal Ashis K., PhD	Co-ordinator (PG Microelectronics and VLSI) TPSW Representative PG Microelectronics and VLSI
● Mandal Durbadal, PhD	
● Mandal Sujit K, PhD	Co-Coordinator (UG)
● Sadhukhan Tapas	Co-ordinator (PG Telecommunication Engineering)

**TECHNICAL STAFF**

- Mr. Tapas Das
- Mr. Anup Kumar Adhikary



# Department of **EARTH AND ENVIRONMENTAL STUDIES**

*“While we wish for our place in the stars, we struggle to cement our place on Earth”- Anonymous.*

Established in the early 1960s as the Department of Geology, it was renamed in 2012 due to the widening aspect of the grave environmental issues and activities in research to resolve them.

It's no more a secret to this world about how seriously the issues related to environment have escalated and that we're already facing setbacks. The problems like Climate Change and Global Warming have become more real and imminent by showing their effects. These problems not only need urgent attention but also solution.

And the Department of Earth and Environmental Studies is not only working on resolving the issues through its advanced research but is also encourages the future leaders and engineers of tomorrow to keep their planet in mind in all their endeavours, indeed proving the saying “we haven't inherited the earth from our ancestors, we have borrowed it from our children.”

Since its establishment not only the area of research has increased, but the technology requirement has also advanced. Recently a well- equipped environmental laboratory has been set up for exclusively serving the post-graduate students and to augment the research. The department today is equipped with advanced equipment like Atomic Absorption Spectrophotometer with Graphite Furnace, Gas Chromatograph, UV-VIS Spectrophotometer, Flame Photometer, Particulate Air sampler, Ozone Analyser, BOD Incubator, COD Digester, Advanced Polarising Microscope besides a rich collection of rocks and mineral samples. Incredible Research is undertaken by the department in the fields of environmental problems, application of RS and GIS in resource management and geological issues such as groundwater study.

The department provides great opportunities to the engineers and specially to the research scholars both in the country and abroad. It is accredited by the NBA.



## **VISION:**

To impart quality scientific and technical education with increased focus on research and innovation in the fields of earth sciences and environment to cater to the need of the country.

## **MISSION:**

1. To produce highly qualified, skillful and motivate manpower with understanding of basic knowledge on earth sciences as well as producing highly qualified professional manpower in the field of environment that can provide service and leadership to the nation.
2. To pursue creative research and strive for new innovations in the fields of earth sciences and environment in order to serve the nation for a sustainable future.
3. To achieve wider visibility by actively contributing to the technical activities and conferences.

## PROGRAMME EDUCATIONAL OBJECTIVES (PEOS)

- PEO # 1:** The programme will enable the students to attain successful professional career in the field of Environmental Science and Technology.
- PEO # 2:** The programme will lead the students to learn and develop capacity to adapt to the latest and constantly developing technology and application of the same in the field of environment.

## PROGRAM OUTCOMES (POS):

- Ability to apply knowledge of basic and natural sciences and engineering.
- Ability to conceptualize and conduct experiments, as well as to analyze and interpret data.
- Ability to design and analyze systems, components or processes to meet desired needs within realistic constraints.
- Ability to work in multidisciplinary teams and grow leadership quality.
- Ability to identify, formulate, and solve environmental problems.
- Understanding of professional and ethical responsibility
- Ability to communicate effectively
- Recognition of the need for, and an ability to continue life-long learning.
- Knowledge of contemporary issues
- Ability to use the modern techniques, skills and latest equipment necessary for environmental research.
- Ability to manage a project.
- Ability to carry out techno-economic assessment of environmental issues



## COURSES OFFERED:

- B.Tech.
- M.Tech. in “Environmental Science and Technology” (Multi disciplinary involving 4 departments.)
- Phd programme

## FACILITIES

### LABORATORIES

#### 1. Environmental Lab 1

Flame Photometer, COD Digester, Water Distillation Unit, Hot Plate, Heating Mantle, Magnetic Stirrer.

#### 2. Environmental Lab 2

Hot Air Oven, Fine Particulate Sampler, BOD Shaker, Laminar Air flow chamber.

#### 3. Research Lab

Magnetic Stirrer, Peristaltic Pump, Conductivity Meter etc.

#### 4. Instrument Lab

UV Spectro Photometer, Atomic Absorption Spectrophotometer (AAS), Gas Chromatography





**RESEARCH**

Structural and Environmental Geology, groundwater quality, groundwater contamination, subsurface transport of contaminants, Remedial techniques of groundwater pollution, modelling of groundwater flow and transport, modelling of vadose zone contamination, application of remote Sensing and GIS in groundwater and environmental problems, Surface water contaminant transport and its removal, Domestic and industrial water and wastewater treatment technology.

**MEMBERS OF FACULTY:**

- Adhikari K., PhD (HOD)
- Gangopadhyay A., PhD
- Mondal S., PhD





# Department of **HUMANITIES AND SOCIAL SCIENCES**

*“The sciences are the ‘how’ and the humanities are the ‘why’. I don’t think you can have the ‘how’ without the ‘why’.”- George Lucas*

The above sentence greatly defines the impact of the Department of Humanities and Social Sciences in moulding the minds of the future leaders of tomorrow. As a subject, it provides a toolbox to think seriously about ourselves and the world. The Department provides an ever-important insight into the fields of Management, Economics and English Literature- the three things that run this world. To this extent, the Department regularly conducts conferences and

This includes the International Conference on Business and Information with the Emporia State University (USA), the International Conference on Literature to Cinema, the International Seminar on Applied Linguistics with the Indiana University of Pennsylvania (USA), the Workshop on Entrepreneurship and Innovation, etc. The Department regularly associates with renowned universities such as IITs, IIMs, Central Universities, MOSPI and even the Government of India. The job prospects vary from Technical Writing, Counselling, Public Relations, Human Resources, all the way to Financial Analysis and even Wall Street Brokerage.

The department is accredited by the NBA.

## **VISION:**

To emerge as a catalyst of synergy between technical education and social sciences so as to produce value-based social technocrats.

## **MISSION:**

1. To instil social awareness and social responsibility by giving exposure to social sciences.
2. To achieve excellence in imparting communication skill and to emerge as a centre of excellence in language studies.
3. To enhance decision-making power of budding techno-managers by imparting the knowledge of Economics, Management and Literature.

## **MEMBERS OF FACULTY:**

- Sengupta P.P., PhD
- Banerjee J., PhD
- Modak A., PhD
- Rai S.K., PhD

# Department of **MANAGEMENT STUDIES**

## **Introduction:**

The Department of Management Studies (DMS) is an endeavour that has arisen out of the hard felt need to groom future managers within the NIT system. Currently the department is running two programmes i.e MBA and M. Tech (Entrepreneurship & Innovations). The department is steadily emerging as a leader in providing management education at the undergraduate and postgraduate levels. The curriculum is a product of philosophy that seeks to amalgamate the best of theory and practice. The pedagogy of DMS is blend of simulation exercise such as case discussions, live projects and presentation along with the conventional classroom teaching. The evaluation of performance comes by means of class participation, case discussion, report preparation, role playing along with other parameters. The students undertake variety of projects which include field survey to enrich their experience and refine their skills in management. The DMS currently offers specialisation in the functional areas of Marketing, Finance, Systems & Operations, Human Resource Management & Organisational Behaviour and International Business & Econometrics. The Department has is credit conducting various seminars/workshop on contemporary issues, delivered by eminent scholars, academician and corporate personalities. The department grooms its students into industry ready proactive future managers with the help of most modern and innovative pedagogy. Since commencement, the department has consistently performed well. Students have already made their mark in higher education and in the professional world in India and abroad. More than fifteen students have received their PhD degree from the department and are well placed in academia. The department has conducted various Management development programmes for organization like IOCL, Indian Post office, UBI, Birla Cement etc. Faculty members routinely act as examiner and paper setter of other universities and institutes. They are routinely invited to deliver talks and are also invited as Visiting Faculty in universities and institutes in India.

## **COURSES OFFERED**

- Master of Business Administration (MBA)
- M. Tech (Entrepreneurship & Innovations)

## **VISION:**

Striving to be the leader in Management and Entrepreneurship Education in India.

## **MISSION:**

To develop managerial and entrepreneurial skills through high quality teaching, research, case development, innovative courses and pedagogy of learning, along with nurturing a deep sense of social and ethical responsibility. We shall foster an outward looking community with commitment towards innovation and creating organizations.

**PROGRAM EDUCATIONAL OBJECTIVE(PEO):**

- PEO 1-** Gain the ability to make business decisions and lead people in an organization.
- PEO2-** To develop human skills and ability to interact and motivate people to work.
- PEO3-** To gain functional knowledge and technical skills required for business.
- PEO4-** To acquire domain knowledge in the specialized field of business.
- PEO5-** To learn conceptual skills and develop ability to understand concepts, develop ideas and implement strategies.
- PEO6-** To encourage innovation and to develop entrepreneurial skills
- PEO7-** To develop a deep sense of social and ethical responsibility.

**PROGRAM OUTCOMES(PO):**

- ⦿ To obtain sound knowledge in the theory, principles and applications of various Management principles.
- ⦿ Acquire and understand various functional knowledge of Management.
- ⦿ Communicate effectively in written and oral form.
- ⦿ Be able to work with a team.
- ⦿ To develop skills to set up organizations.

**FACILITIES:**

The classrooms are adequately equipped with LCDs and OHPs to facilitate proper management teaching. The department also has a fully functional computer lab having modern technology based networked computers and internet. Other accessories including scanners and laser printers are also available. Facilities of statistical software like SPSS, operation research software like LINGO and business database software like CMIE-Prowess are also provided.

**RESEARCH:**

The department has published more than hundred papers in peer reviewed management journals in recent years and written books/book chapters. Several Faculty members has won award in India and abroad for their research paper.

**PROJECT & CONSULTANCY / CONTINUING EDUCATION PROGRAMME:**

1. Disha-Dealership Management Training Programme for IOCL Retail Outlet dealers held at NIT, Durgapur, during 09-10 & 16-17 December, 2016 and 10-11 & 16-17 February, 2017.
2. Workshop on Advanced Research Methods and Data Analysis held at NIT, Durgapur on June 04-10, 2017.

**MEMBERS OF FACULTY:**

⦿ Bandyopadhyay G., PhD	Associate Professor
⦿ Banerjee N., PhD	Assistant Professor
⦿ De A., PhD	Assistant Professor
⦿ Dutta A., PhD	Associate Professor & HoD
⦿ Mandal K., PhD	Assistant Professor [Course Coordinator for the M.Tech (EI) programme]
⦿ Pal D., PhD	Assistant Professor
⦿ Roy M., PhD	Professor
⦿ Sarkar S., M.Tech	Assistant Professor [Course Coordinator for the MBA programme]



# Department of MATHEMATICS

Department of Mathematics started functioning from the year 1960 when the Institute was established as R.E. College Durgapur.

Mathematics being the backbone of all engineering disciplines, the Department started to shape the young engineers of the country since the inception of the Institute.

After the transformation from R.E. College to National Institute of Technology Durgapur, the Department has undergone many changes. At present with nine faculty members the Department is running two PG Courses – M.Sc. in “Mathematics” & M. Tech. in the “Operations Research”. Apart from teaching faculty members

are actively engaged in research in most areas of pure and applied mathematics including algebraic coding theory, computational graph theory, functional analysis, fuzzy mathematics, geophysics, operations research, plasma physics, nonlinear analysis, Computational fluid dynamics, soft computing, statistics and topology. Presently there are approximately 60 full time and part time scholars. The Department has produced 20 Ph.D. during the last 10 years.

The Department has the vision of contributing to the nation through quality education & research in mathematics.



## MISSION:

1. To create an ambiance in which state-of-the-art undergraduate, postgraduate, and doctoral programmes will flourish.
2. To identify different industrial problems through industry- academia interaction and to undertake collaborative projects for long term development.
3. To generate human resource with finest capabilities who can emerge as leaders in a range of professions.

## VISION:

To contribute to the nation through quality education and research in Mathematics; to become a valuable resource for industry and society; and to be a centre of excellence.

## COURSES OFFERED:

1. M. Sc. in Mathematics
2. M.Tech in Operations Research



**FACILITIES:****Laboratory:**

One computer lab for Postgraduate students.

**Equipment:**

16 Desktop computers (mostly core i-7 processor) & 2 servers with softwares like latest version of SPSS & Mathematica.

**MEMBERS OF FACULTY:**

- Kar S., PhD (HOD)
- Bagchi S., PhD
- Basu K., PhD
- Dey L. K., PhD
- Pal A., PhD
- Pal, P., PhD
- Panigrahi G., PhD
- Maitra S., PhD
- Mondal S. S., PhD



# Department of **MECHANICAL ENGINEERING**

One of the largest and oldest departments in the college, it also has the added privilege of being one of the oldest and most fundamental engineering courses in the world. Every invention that established us as a civilisation can owe its gratitude to the mechanical engineers of the past, present and future. Many assumed the technological boom would threaten its importance in society, but the mechanical engineers of the world simply embraced it and utilised it to the point of easing their labour. Innovation, as a concept, is fundamentally important.

Impossible means nothing in this department, except for the ability to comprehensively fit all its students into one classroom!

Established in 1960, the Department has performed wonders in growing to accommodate 150+ students in the undergraduate course as well as 20+ students for each PG course. They ensure that each engineer emerges as globally competitive and innovative. This is helped by the presence of phenomenal laboratories in Heat Power, Machine Design and Robotics. The job prospects are never-ending, with great demand in the fields of Automobiles, Machinery, Electronic Product Manufacturing, Aerospace and even in Petroleum. The innovation and intellectuality of this department strongly stems from their personal belief that-

*"If the job doesn't exist, invent it"*

The department is accredited by the NBA.

### **VISION:**

Advancement of the society through excellence in teaching in teacher, research and innovation that exploits the rapidly changing technical diversity of Mechanical Engineering.

### **MISSION:**

1. Imparting quality education to the students and enhancing their skills to mechanical engineers.
2. Maintaining state-of-the art research facilities for providing our students and faculties with opportunities to innovate, interpret, apply and disseminate their knowledge.
3. To develop linkages with reputed R&D organization, Institute and Industries world-wide through education and research.

### **PROGRAMME EDUCATIONAL OBJECTIVES:**

1. Excel in professional career and or higher education by possessing fundamental understanding and knowledge of Mechanical Engineering
2. Analyze real life problems, and be able to provide solution that is technically sound, economically feasible socially acceptable and sustainable in a world of emerging technologies.





3. Acquiring knowledge of major technological advancements and research initiatives, and be able to drive industrial growth and technological advancement in the chosen field of interest.
4. Exhibit professionalism, ethical attitude, communication skills, teamwork and leadership quality in profession and adapt to current trends by engaging in lifelong learning.

#### **COURSES OFFERED:**

- ⦿ B Tech in Mechanical Engineering
- ⦿ M Tech in Machine Design
- ⦿ M Tech in Fluid Mechanics & Heat Transfer
- ⦿ M Tech in Thermal Engineering

#### **LABORATORIES WITH RESPECTIVE EQUIPMENT:**

##### **Thermal Engineering Lab**

###### **Equipments:**

- ⦿ Fluidization and fluid bed heat transfer unit.
- ⦿ Computer linked Refrigeration Laboratory unit
- ⦿ Air conditioned Laboratory unit
- ⦿ Cross flow heat exchanger unit

##### **Heat Power Lab**

###### **Equipments**

- ⦿ Heat conduction unit
- ⦿ Heat exchanger
- ⦿ Natural convection
- ⦿ Forced convection
- ⦿ Vacuum gauge
- ⦿ Stefan-Boltzmann apparatus
- ⦿ Automobile Laboratory
- ⦿ Boiler
- ⦿ Separating & Throttling Calorimeter
- ⦿ Variable CR multi-fuel IC Engine test rig
- ⦿ Variable CR Diesel Engine test rig
- ⦿ Morse test
- ⦿ Rope brake dynamometer
- ⦿ Air compressor test rig
- ⦿ Convective heat transfer over Artificial roughness
- ⦿ Liquid crystal thermography system

##### **Machine Dynamics Lab**

###### **Equipments**

- ⦿ Twin rotor MIMO system
- ⦿ Digital pendulum system
- ⦿ Precision modular servd workshop
- ⦿ Dynamic balancing machine
- ⦿ 3-axis gyroscope
- ⦿ Mechanical power transmission system
- ⦿ FFT analyzer
- ⦿ Soccer robot set-up

##### **CAD/CAM Lab**

###### **Equipments**

- ⦿ CATIA
- ⦿ MSCNASTRAN
- ⦿ ANSYS
- ⦿ MSC. PATRAN
- ⦿ MSCEASY
- ⦿ MSCADAMS
- ⦿ MATLAB
- ⦿ CNC Vertical Machining Center
- ⦿ XY Positioning Table

##### **Fluid Mechanics & Hydraulics Lab**

###### **Equipments**

- ⦿ Impact of Jet
- ⦿ Determination of Pipe friction
- ⦿ Determination of Minor Losses



- ⊙ Determination of Coefficient of Discharge in orifice & venture meter
- ⊙ Determination of coefficient of discharge in open channel flow
- ⊙ Performance test of Pelton Turbine
- ⊙ Performance test of Francis Turbine
- ⊙ Performance test of Kaplan Turbine
- ⊙ Performance test of Centrifugal Pump
- ⊙ Performance test of Reciprocating Pump

### **Metrology Lab**

#### **Equipment**

- ⊙ Tool Maker's Microscope
- ⊙ Floating Carriage Micrometer
- ⊙ Strain Measuring Device



### **RESEARCH ACTIVITIES:**

The research activities revolve around mobile robot navigation, soft computing/knowledge discovery, dynamics study, machine dynamics, vibration and control, micro robotics and MEMS, rehabilitation robotics, composite structure, nontraditional machining, micromachining, additive manufacturing, Intelligent Manufacturing System, CAD/CAM, vehicle dynamics, mechanical system modeling and simulation, microtribology and biotribology, machine tool dynamics, computational mechanics and FEM, computational fluid dynamics and heat transfer, enhancement of heat transfer using artificial roughness, renewable and alternative energy, use of alternate fuel in I.C Engines, combustion engineering, Water Resource Management, Simulation And Modelling.

### **MEMBERS OF FACULTY:**

- ⊙ Mullick A.N., PhD(HOD)
- ⊙ Majumder M.C., PhD
- ⊙ Basak I., PhD
- ⊙ Halder B., PhD
- ⊙ Saha A.K., PhD
- ⊙ Banerjee N., PhD
- ⊙ Biswas A.K., PhD
- ⊙ Mukhopadhyay S., PhD

- ⊙ Mitra A.K., PhD
- ⊙ Layek A., PhD
- ⊙ Puri A.B., PhD
- ⊙ Pramanick A.K., PhD
- ⊙ Hui N.B., PhD
- ⊙ Roy S.S, PhD
- ⊙ Das A.K.
- ⊙ Khan K., PhD
- ⊙ Karmakar S., PhD

- ⊙ De J., PhD
- ⊙ Mitra R.K., PhD
- ⊙ Pramanik S., PhD
- ⊙ Bera, B., PhD
- ⊙ Rana S.C., PhD
- ⊙ Patari, A
- ⊙ Barman, R.N., PhD



# Department of **METALLURGICAL AND MATERIALS ENGINEERING**



*“Engineering or technology is all about using the scientific methods of material development to make life better for people, to reduce cost”- Anonymous*

Since its inception in 1960, it has progressed greatly in providing PG courses as well as staying constantly in collaboration with IIT Kharagpur, IIST Shibpur, Jadavpur University, CSIR Laboratories, SAIL and other steel plants. The Metallurgical and Materials Engineering Department has developed expertise in the areas of Extractive and Physical Metallurgy, Powder Metallurgy, Manufacturing Processes, Mechanical Behaviour of Materials, Surface Engineering, Nano-Science and Technology,

Modelling and Simulation. A new dimension of understanding and evaluating newer materials necessitate Materials engineering approach, which is an interdisciplinary field to study all type of engineering materials and advanced materials despite their basic classification. The Department aims to establish itself as a pioneer of Metallurgical & Materials research and education so that it can effectively cater to the growing needs of industry, academia and research institutions of India. Excellence in teaching and research is the key element of this vision and the Department has set clear-cut objectives and strategies to realise this vision. The department was even awarded the STEEL CHAIR PROFESSOR honour by the Ministry of Steel, Government of India. The job prospects are enormous, with great demand in the fields of Material Science, Industrial and Metallurgical Engineering .The Metallurgical and Materials Engineering Department of NIT Durgapur has earned expertise for conventional fields like study of blast furnace, fracture mechanics, advanced materials like polymer ,composite, nano materials. The department is equipped with XRD, FESEM, UTM, Wear Testing, Mechanical Testing, Reducibility Testing, Heat Treatment Facility, Mineral Beneficiation Facility, Corrosion Testing Facility , Induction Furnace, Rolling Mill. The latest glory added to the department is a dedicated welding Laboratory and study of the weld defects. Powder Metallurgy laboratory and Materials modelling is also planned to be started in the coming months.

## **VISION:**

Development of techno-scientific knowledge base to impart quality education to students at all levels (UG, PG and PhD) with an augmented focus on research and innovation in various fields of Metallurgical and Materials Engineering so as to cater the need of Industry and society at large.



**MISSION:**

1. To develop students possessing strong knowledge-base who will cater Industry A organizations in various fields of Metallurgical and Materials Engineering as highly qualified, skillful and motivated manpower.
2. To pursue inventive research in Metallurgical and Materials Engineering that would support the growth of nation.
3. To enhance internal revenue generation through sponsored research, consultancy and testing and continuing education programme.
4. To interact with global scientific community through (i) collaborative research and (ii) participating/organizing seminars, conferences etc

**PROGRAMME EDUCATIONAL OBJECTIVES(PEO):**

1. The graduates of the programme will have successful technical and professional career in Metallurgical and Materials Engineering and related fields
2. Graduates of the programme will continue to learn and to adapt in solving multidisciplinary industrial and scientific problems in a world of constantly evolving technology
3. To inculcate the students of professional and ethical attitude, teamwork skills and an ability to transfer engineering issues to broader social context.

**COURSES OFFERED:**

- B-Tech ( Metallurgical and Materials Engineering) • M-tech ( Metallurgical and Materials Technology)

**LABORATORIES WITH RESPECTIVE EQUIPMENT:****1) Extractive Metallurgy laboratory****Equipments**

- 1) Ball mill 2) Pelletizer 3) Jaw crusher 4) Roll crusher 5) Froth Flotation

**2) Introduction to metals and materials laboratory****Equipments**

- 1) Microscope 2) Polishing machine

**3) Phase transformation and phase equilibrium laboratory****Equipments**

- 1) Microscope 2) Polishing machine

**4) Thermodynamics laboratory****5) Foundry Laboratory****Equipments**

- 1) Sand Muller 2) Melting furnace- electrical furnace

**6) Heat treatment laboratory****Equipments**

- 1) Jominy end quench apparatus 2) Resistance heat furnace

**7) Metal forming laboratory****Equipments**

- 1) Rolling mill 2) Forging equipments-hydraulically operated



- 8) **Energy materials laboratory**  
 9) **Mathematical modelling and simulation laboratory**

**Equipments**

- 1) Cold model of wire

- 10) **Material characterization laboratory**

**Equipments**

- 1) XRD machine 2) FESEM Machine

- 11) **Welding laboratory**

**Equipments**

- 1) Electric arc welding machine

- 12) **Testing of materials laboratory**

**Equipments**

- 1) UTM 2) Torsion testing 3) Impact test machine 4) Hardness testing machine



**RESEARCH ACTIVITIES:**

The research activities include solid state phase transformation in steel, development of novel composite materials, tribological studies of various materials, aqueous and high temperature corrosion of materials, synthesis and characterization of nano fluids and production and characterisation of Iron ore Hollow Pellets.

**MEMBERS OF FACULTY:**

- Pramanik .S., PhD (HOD)
- Ghosh K.S., PhD
- Maity J., PhD
- GhoshM.M., PhD
- Bera S., PhD
- Mallik M., PhD
- Show B.K., PhD
- Mondal M.K., PhD
- Maji B., PhD
- Mandal D., PhD





# STUDENT ACTIVITY CENTRE



*“Sports teaches you character, it teaches you to play by the rules, it teaches you to know what it feels like to win and lose: it teaches you about life” -Billie Jean King*

Apart from the scholastic achievements, our college excels and believes in the importance of sports and extra-curricular activities. The Institute lays emphasis on the promotion of sports and games through interaction between different NITs, Universities and other Engineering colleges of the country. The Institute has houses a Students' Activity Centre (SAC) for indoor games like table tennis and chess. Through provision of regular practice and excellent infrastructure, namely gymnasiums, playgrounds for cricket, football and hockey, athletic track and a basketball, badminton and tennis courts, the Student Activity Centre gives the students a chance to pursue their sport of interest and improve at it.

The department organized a Credit Course which combined Physical Education and Sports, Yoga, Martial Arts and NCC as a compulsory subject in B-Tech for the first two semesters in order to enhance the students' development.

## MAJOR FACILITIES IN THE DEPARTMENT:

Excellent facilities are available including two well equipped multi gymnasiums separately for boys, girls and guests. This also includes the impressive Lords Football stadium, the central Sports ground Oval including Volleyball courts with flood light facilities, concrete cricket practice pitch, concrete Basketball court with flood light facilities, concrete tennis court, concrete badminton courts and chess.

Beside central sports facilities, every hall of residence has concrete badminton and Volleyball courts including Table Tennis and Carom board facilities.



## IN THE YEAR 2016- 2017 THE INSTITUTE PARTICIPATED IN THE FOLLOWING GAMES AND SPORTS EVENTS IN INTER COLLEGIATE SPORTS MEET AND ALL INDIA INTER NIT TOURNAMENTS:

1. All India Inter NIT Basketball Tournaments organized by NIT Jaipur during November 05-07, 2016.
2. All India Inter NIT Cricket & Swimming Tournaments organized by NIT Rourkela during January 27-30, 2017.
3. National Level sports Fest MST-17 in Football organized by NIT Jaipur during February 17-19, 2017.
4. All India Inter NIT Volleyball, Hockey, Handball & Yoga Tournaments organized by NIT Surathkal during March 17-19, 2017.
5. All India Inter NIT Badminton & Tennis Tournaments organized by NIT Tiruchirappalli during March 24-26, 2017.
6. All India Inter NIT Track & Field, Body Building & Power Lifting Tournaments organized by NIT Kurukshtra during March 06-08, 2017.
7. National Level Sports Fest (Sangram- 17) in Table Tennis & Chess tournaments Organized by IIT Roorkee during March 31- April 02, 2017.

## GAMES AND SPORTS ACHIEVEMENTS IN 2016 -2017:

1. Table Tennis (Women) Champion in the National Level Sports Fest (Sangram-17) held at IIT Roorkee.
2. Track & Field (Women) Won Two Gold and One Silver Medals in All India Inter NIT Meet held at NIT Kurukshtra.
3. Body Building & Power Lifting (Men) Secure Best Physique position and won Two Gold and One Silver Medals in All India Inter NIT Meet held at NIT Kurukshtra..
4. Volleyball (Women) Secured Third Position in All India Inter NIT Meet held at NIT Surathkal.
5. Yoga (Women) Secured Third Position in All India Inter NIT Meet held at NIT Surathkal.
6. Tennis (Men) Secured Third Position in All India Inter NIT Meet held at NIT Tiruchirappalli.





# Department of PHYSICS

*“All of physics is either impossible or trivial. It is impossible until you understand it, and then it becomes trivial.”- Ernest Rutherford.*

Established in 1960, the Physics Department is tasked with the essential job of ensuring that future scientists and engineers of this world don't fall behind on their basic understanding of Physics. The department started with only 7 faculty members and had none of the elaborate research labs described below, which only speaks for their level of success.

Since the apple fell on Newton's head, the students of this subject have been looking for their Eureka moments on their path to unravel the universe. Every physicist starts off in the

same way- “I believe in the theory X, I have no basis, I have no proof and I have no money.” However, being the most creative and imaginative people on this planet, they are often right in their theories and hypothesises (assuming the body to be in a vacuum, of course).

The Physics Department provides valuable knowledge in detailed research in the fields of basic and applied physics, backed by a good amount of physical evidence, with the help of advanced technology and equipments at hand. The pristine technology at hand is of great advantage, including various state-of-the-art laboratories in the fields of Low Temperature Characterization, Nanoscience and Nanotechnology, High Energy Physics and Optical Sensors. A degree from this department is of high demand in the fields of Geophysics, Metallurgy, Quantum Physics, Radiation, Seismology, Meteorology, Nuclear Physics and even Government and privately funded research jobs.

Physics is an inseparable part of Engineering and Fundamental Science. In that aspect, the Physics Department teaches all engineering undergraduate students of this institute as well. It is accredited by the NBA.

## VISION:

To impart quality education & focus on research in basic and applied sciences leading to advancement of technology to cater to the need of the country.

## MISSION:

1. The Department of Physics of NIT Durgapur aims to provide a quality education to students with a sound understanding of the fundamentals and applications of Physics leading to development of Technologies for the benefit of the mankind.



2. The Department aims to have highly qualified motivated faculty and staff members along with state-of -the-art facilities to carry out the educational and research process and thereby to ensure increased global visibility of the department.
3. The Department strives to provide the most up-to-date and purposeful curriculum and the highest quality laboratory facilities for the education of our students in a "student-centric" approach to empower them in finding suitable employment.
4. To have close interaction with the nearby industries so that our programs and graduates are highly regarded and accepted in their workplace.
5. To provide the necessary knowledge, experience and ethical values to the students leading to responsible citizen of the nation.

### PROGRAMME EDUCATIONAL OBJECTIVES (PEOS):

1. To produce graduates who would have developed fundamental understanding of science and engineering of advanced materials and ability to use these tools for solving real life problems.
2. To produce graduates who have the ability to demonstrate technical competence in professional career in Materials Science & Engineering and related fields.
3. To produce graduates who would be able to attain the ability to adapt in a world of constantly evolving technology through lifelong learning, such as advanced degrees, professional registration, and other professional activities.
4. To produce graduates who function effectively in a multi-disciplinary environment and individually, within a global, societal and environmental context.
5. To produce graduates who would be able to take individual responsibility and to work as a part of a team towards the fulfilment of both individual and organisational goals.

### COURSES OFFERED:

1. PhD program 2. B. Tech 3. M. Tech in Advanced Material Science and Technology 4. M. Sc. in Physics.

### RESEARCH LABS WITH EQUIPMENT

#### I. Low Temperature Characterization Lab

Electromagnet at (up to Magnetic field up to 1 Tesla) 3.61/2 and 81/2 digit digital multimeter and Electrometer, Impedance Analyzer, Current Source, Liquid Nitrogen Cryostat (up to 77K). Closed Cycle He Cryostat, Spot welding, Ball Mill, Spin Coater.

#### II. Nanoscience Lab

Monochromator, Si CCD, Xenon lamp, Photo Luminescence System, UV-Vis absorption spectrophotometer, Abbe-refractometer.

#### III Carbon Nanotechnology Lab

I-V measurement system, C-V measurement system, Potentiostat/ Galvanostat, Rotary Vacuum evaporator

#### IV Theoretical Study in High Energy Physics

GM counter.

#### V Electronics Lab

Digital storage oscilloscope, Spectrum analyzer, Synthesized signal source, PCB design machine, Lock-in amplifier, Analog & Digital communication kits, 8085/8086 Trainer kit, Function Generators, Digital Oscilloscopes and 24 port L3 Switch

**VI Material Science Lab**

Polarizing Microscope, Digital Balance (5 decimal), Centrifuge (both low and high temperature), Glove box

**VII He & Geothermal Exploration and Earthquake Precursor Study****VIII Optical Sensor Lab**

VLS cum Glancing angle depositor for InN, InO<sub>3</sub>, TiO<sub>3</sub> nanowires and Quantum Dots, Spin Coater, Optical Detector Characterization System, Muphle Furnace, Thermal Evaporation System, Probe station, Gas Sensor Measurement system, Electron Beam Evaporation System.

**UG and PG Laboratories****PG Laboratories**

General Materials Science Laboratory, Materials Synthesis and Characterization Laboratory, Computational Laboratory General Physics Laboratory, Solid State Physics Laboratory, Electronics Laboratory, Nuclear Physics Laboratory, Optoelectronics Laboratory, Advanced Condensed Matter Physics Laboratory.

**UG Laboratories**

Physics Laboratory, Semiconductor Physics Laboratory, Semiconductor Device Laboratory, Advanced Physics Laboratory

**RESEARCH ACTIVITIES**

The Department currently boasts of several state-of-the-art research laboratories which provide the infrastructural support for cutting edge multidisciplinary research which is primarily focused on various aspects of synthesis and properties of materials. In recognition of the high quality research in materials conducted by its faculty members, the Department has been selected by the MHRD, Govt. of India for the prestigious "Centre of Excellence" grant in 2013 (in partnership with the department of MME of this institute). However, the Department encourages other research areas including Exploration of Helium and Geothermal Power, Earthquake Precursory Studies, Nonlinear Systems and Time Series Analysis, Study of chaotic behavior of Electronic circuits and systems and application of chaos in cryptography, Research towards synthesis of nanomaterials for optical sensors, solar cells etc., Standard model and beyond standard model, B meson decays.

**MEMBERS OF FACULTY:**

- Meikap A.K., PhD (HOD)
- Kumbhakar P., PhD
- Chakraborty A.K., PhD
- Sahoo S., PhD
- MondalM.K., PhD
- Basu S., PhD
- Chaudhuri H., PhD
- Mandal A., PhD





# Department of **TRAINING & PLACEMENT**

*“Find out what you like doing best and get someone to pay you for doing it”--Katherine Whitehorn*

Through the efficient management of placement activities, the Department of Training and Placement is the one that “pays” off your hard work. The department works in close coordination with faculty advisors from all departments and student representatives from various courses in order to help the students earn their dream job. Apart from keeping liaison with various industrial groups and research organisations, the department also helps the students with the professional aspects of a future job. Through innovative ways of preparing the academic and interpersonal skills of the student, the department helps the students target the cream of the group of the recruiting firms.

The Training and Placement department provides placement opportunity to students of all Branches N.I.T Durgapur. 424 UG students, out of 714 eligible students, have been already placed within 24th January for the academic session of 2017-2018. In addition to that 45 UG students secured more than one job. The department has attracted 83 companies already for the campus placement for 2017-18, within this period. The companies are including of renowned multinational companies, such as MICROSOFT, AMAZON, ORACLE, D E SHAW, ENDURANCE, AMDOCS, IBM, L&T-ECC, CESC, TATA MOTORS, TATA POWER, RELIANCE, VEDANTA, MARUTI, HERO MOTOR, GODREJ, ERICSSON, SCHNEIDER ELECTRIC, EMAMI, BLUE STAR and Public Sector Undertaking such as HPCL, COAL INDIA, C-DOT, HSCC, BPCL.

## PLACEMENT PROCESS

Training and Placement cell invites companies to the Capmus

Interested Companies fill the CPI (Capmus Placement Information) form and submit to the placement section

The CPI is made available to the students, along with the information furnished by the company such as date, packages etc.

The willing students data base is shared with the company for prior shortlisting, if required.

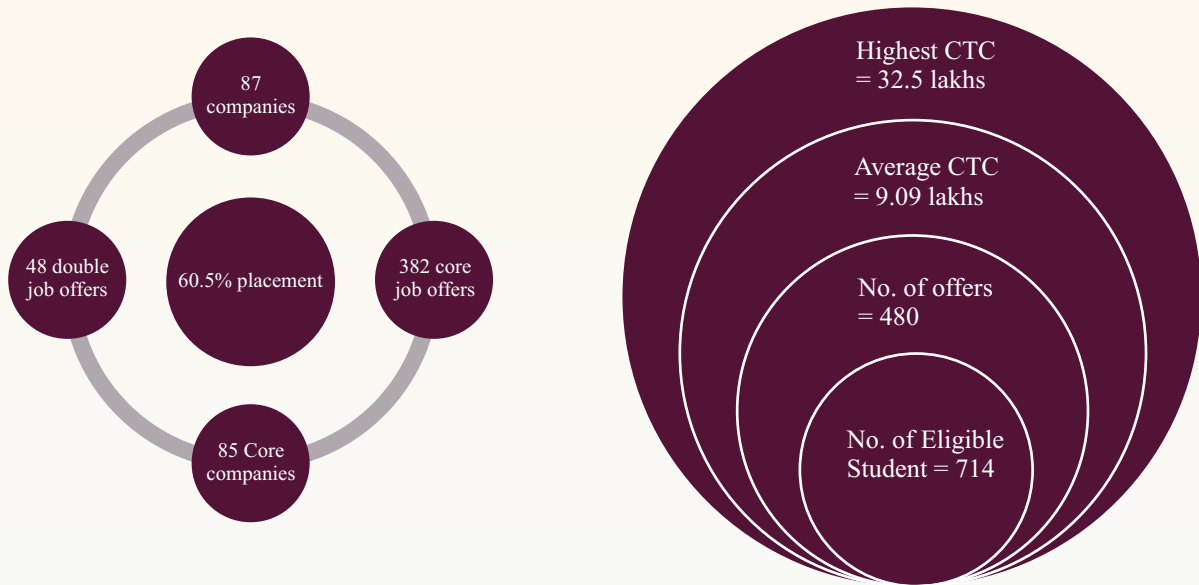
The Placement section and Companies coordinate to fix a convenient date for recruitment procedure viz. Pre Placement Test, online/pen paper test and interviews of the shortlisted student.

The Company/Organisation is required to furnish the final list of selected students  
At the end of the process.

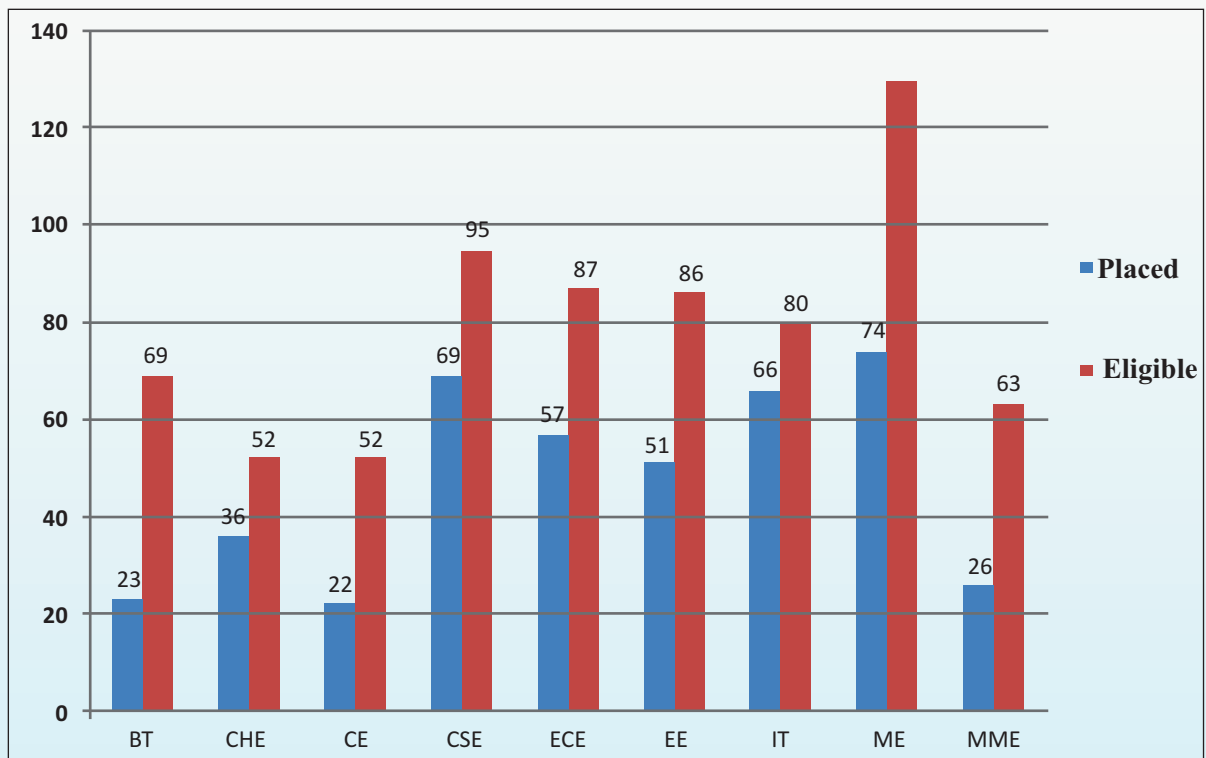
The selected students are provided with the Letter of Intent and joins the company in the stipulated date.



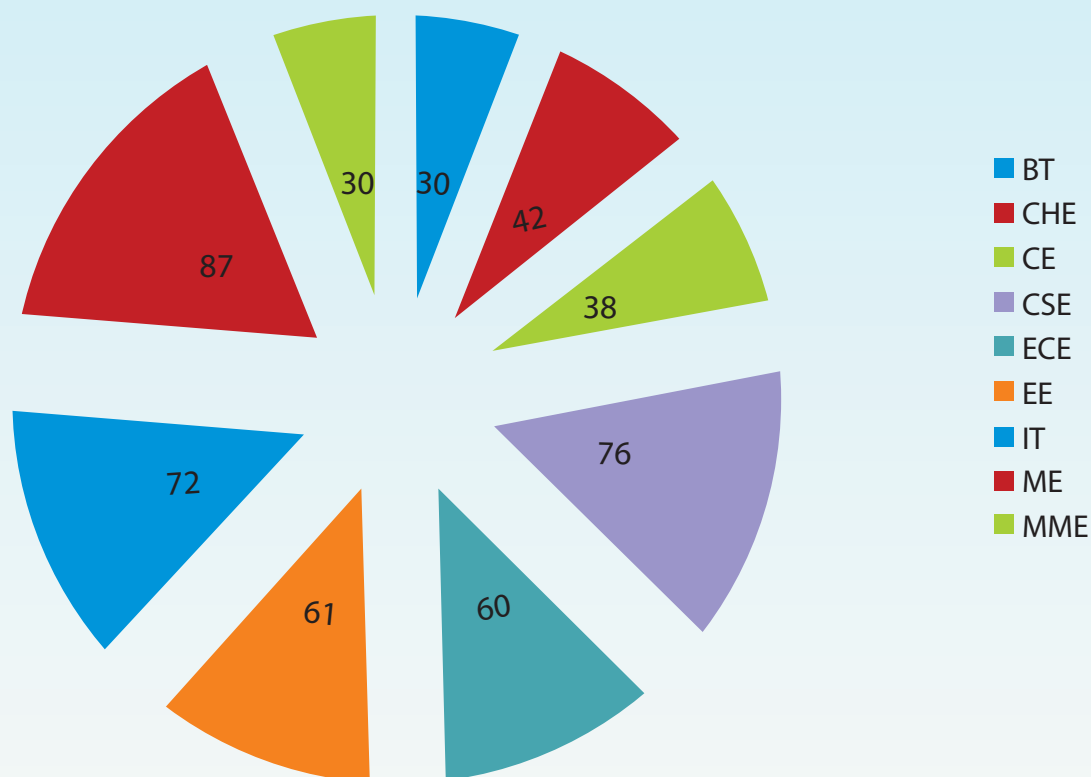
# Highlights till 24th January, 2018



Statistics till 24th January 2018



Statistics till 24th January 2018



### TRAINING

The Department of Training and Placement facilitate the internship/training of students after sixth semester in reputed organisations viz;

**TABLE : LIST OF INDUSTRIES FOR TRAINING/ INTERNSHIP**

SL.NO	NAME OF THE COMPANY	SL.NO	NAME OF THE COMPANY
1	D.V.C.	36	D.E.SHOW & COMPANY
2	BSNL	37	TATA CUMMINS PVT.LTD
3	HT MEDIA	38	CYIENT HYDERABAD
4	PDCL	39	WEBTEK LAB PVT.LTD
5	HPCL	40	IIITN (GWALIOR)
6	D.S.P.	41	PYTHON
7	N.T.P.C.	42	JUGNOO
8	W.B.P.D.C.L.	43	SIMPLEX
9	L&T INFOTECH	44	TATA POWER
10	C.E.S.C.	45	HAL
11	MOBSTAC(BANGALORE)	46	NICED
12	STICHIO COMPANY	47	APOLLO HOSPITAL
13	VERSE(BANGALORE)	48	IISER (PUNE)
14	PERVACIO	49	DMC
15	O.N.G.C	50	CCMB(HYDRABAD)
16	M.N.DASTUR & COMPANY (P) LTD	51	NIV(PUNE)

SL.NO	NAME OF THE COMPANY	SL.NO	NAME OF THE COMPANY
17	TATA MOTORS LTD.	52	NIPGR(DELHI)
18	TATA STEEL LTD.	53	IIT
19	BRIDGE & ROOF COMPANY (INDIA)LTD	54	GOOGLE SUMMER OF CODE
20	DOORDARSHAN KENDRA(KOLKATA)	55	VOGGLE(BANGALORE)
21	BARAUNI REEINERY TRAINING & DEVELOPMENT CENTRE	56	RECSTECHNOLOGIES PVT.LTD
22	GONTERMANN-PEIPERS(INDIA)LTD	57	MICROSOFT
23	OTPC PALATANA SITE	58	MICROSOFT INDIT(R & D PVT.LTD)
24	CMERI	59	INNORRAFT SOLUTION PVT.LTD
25	BHEL	60	IISC ( BANGALORE)
26	IOCL	61	ISRO ( BANGALORE)
27	FCA INDIA AUTOMOBILE	62	NSIT (DELHI)
28	DABBODIL ENTERPRISE	63	HPL
29	OFDC	64	EXIDE
30	CERN GENEVA	65	IDCL
31	VIZAG STEEL PLANT	66	ICT ( MUMBAI)
32	MARUTI SUZUKI INDIA LTD	67	ESSAR OIL & GAS
33	ARCI	68	ASP (DURGAPUR)
34	DMRL(HYDRABAD)	69	CSIR-NML
35	DRDO(HYDRABAD)		

# COMPUTER CENTRE

The Computer Centre possesses state-of-art computing facilities. The Computer Centre acts as a central computing facility for the students, scholars and faculties of the Institute. The centre has necessary infrastructure like sufficient number of Computer Hardware, Software, Air-conditioned Laboratories and stabilized Uninterrupted Power Supply, and all are managed by faculty and staff members.

Departments, Office, Students' Hostels, Faculty Quarters and Staff Club are connected by a campus wide network using high speed Fibre Optic & UTP cables. The common places namely Library, Board Room, Assembly Hall, Senate Hall Students' Activity Centre, Guest House etc. are covered by Wireless connectivity. The Institute has a dedicated 95 Mbps 24 x 7 Internet connectivity.

## PRESENT INFRASTRUCTURE:

1. Software: Microsoft Campus License-Windows 2008 Server, Windows Vista, Windows 7, Microsoft Office 2010, Oracle 10g Enterprise Edition with DW tools (Windows) 20 users, SQL Server 2005, SQL Server 2008, VISUAL STUDIO NET PRO, Visual Studio 2012; Oracle Developer Suit 10g (Windows) 25 users, SPSS (Windows) 10 users, SPSS Clemantine (Windows) 25 users, MATLAB (license on blade management server), LABVIEW 5 users, ANSYS 5 users license server on blade8 (win2K3), FLUENT & FLOWLAB-20 & 25 users, ASPEN PLUS 5 users network license / Single in standalone (license on Intel Server), AUTODESK Mechanical, Civil 40, 10 users license server on blade8 (win2K3), CATIA (license server on blade management server), Pro Engineer (license on Intel server), Adobe Director 10 users (license on blade server 1), Maya users (license on blade server 1).
2. PC Pentium-IV / Dual Core / V, Workstation : 160 nos.
- 3 HP Blade System, HCL Server (Xeon), Sun Fire -1 Server : 03 Nos.
- 4 HP color Laser Jet - 2550L, HP Laser Jet - 9040 DN, HP Design Jet 500 ps : 04 Nos.
5. A0 Scanner - 1 no., A3 Scanner-2 nos., A4 Scanner-2 nos. : 05 Nos.

## MEMBERS OF FACULTY:

Chatterjee R.K. Assistant Professor  
Saravanan C., PhD Assistant Professor / System Manager and Head



# HALLS OF RESIDENCE

The Institute has nine halls of residence for the male students and three halls of residence for the girl students. Hall accommodation is provided to all the students pursuing any degree in the college. Students receive all kind of necessary facilities in the hall which are being upgraded every year. A student will be allotted a seat only when he obtains admission to the Institute and produces the receipt for payment of all Institute dues.

The Halls of B.Tech. First, Second and Third year students comprise of multi-seated rooms. However, the final year students are allotted single rooms. The M.Tech., M. Sc., MCA students along with the Ph.D. scholars are also allotted different hostels with single rooms respectively. For International Students(male), the institute has a state of the art designed hostel with single rooms and attached washrooms and a balcony shared with two rooms. A separate hostel with single rooms is allotted to international female students as well.

Each hall is self-contained with amenities, such as, a common room, a lounge (with facilities like TV, indoor games etc.) and a dining hall with a Mess. Also, every room has LAN connection/WIFI Router.

It's rightly said, "I sound mind is in a sound body" and so every hall has a Mess which caters almost all kind of dishes keeping in mind not only the diversity of the students but their health as well. There is a special centralized Veg Mess for all the vegetarian students in the college. Each Hall has a Mess Committee consisting of students and wardens which lays down appropriate rules and norms for running the mess.

In sound body fitness comes next so every hall has a requisite amount of sports equipment whether it be for indoor or outdoor. From cricket bat to table tennis racquet and carrom board, the students are provided with all kinds of possible equipment. The halls of residence also have a playing space for outdoor games apart from the main grounds.

The halls are not only equipped with entertainment and sports facilities but also, the cleanliness is taken care of. Each block(wing) has a dustbin and washroom. Cleaners are employed to clean the toilets and the corridors every day.

## WARDENS

**Chief Warden - Dr. Kalyan Adhikari**

HALL OF RESIDENCE	WARDENS/MANAGER
Netaji Subhas Chandra Bose Hall of Residence (Hall-1)	Dr. Suvomoy Chongder, Dr. Aniruddha Mondal, Mr. Rajendra Das
Jagadish Chandra Bose Hall of Residence (Hall-2)	Dr. Sajal Mukhopadhyay, Dr. Sujit Karmakar, Mr. Goutam Mukherjee
Rabindra Nath Tagore Hall of Residence (Hall-3)	Dr. Rajat Mahapatra, Dr. Pijush Topder, Mr. Debabrata Mukherjee
C V Raman Hall of Residence (Hall-4)	Dr. Gopinath Halder, Dr. Sanjay Dhar Roy
Swami Vivekananda Hall of Residence (Hall-5)	Dr. Suman Halder, Dr. Sujit Kumar Mondal, Mr. Subol Ch. Bandopadhyay

Rishi Aurobindo Hall of Residence (Hall-6)	Dr Sanjib Sadhu, Dr. R.N. Barman, Mr. Amit Lakra
Preetilata Waddader Hall of Residence (Hall-8)	Dr. Mousumi Saha, Dr. Kazy Sufia Khannan, Mrs. Basanti Banerjee
SatyendraNath Bose Hall of Residence (Hall-9)	Sri Jagannath De, Dr. Anupam De, Dr. Durbadal Mondal, Mr. Amit Lakra
Mother Teresa Hall of Residence (Hall-10)	Dr. Mousumi Saha, Dr. Kazy Sufia Khannan, Mrs. Basanti Banerjee
Meghnad Saha Hall of Residence (Hall-11)	Dr. Bijay Kr. Show, Dr. Manas Kr. Mondal, Dr. Amlan Ghosh, Mr. Bikash Das
A.P.J. Abdul Kalam International Hostel (Hall-12)	Dr. Supriya Bera, Mr. Bikash Das
Sarojini Naidu Hall of Residence (Hall-13)	Dr. Durba Pal, Dr. Nibedita Mahata







# LIBRARY



The Library as one of the important central facilities of the Institute supports the study, teaching, research, and development programmes of the Institute. It is housed in a separate building having three floors on a plinth area of 1000 sq. mtrs. The library has a collection of 1,65,746 volumes, which includes text books, reference books & bound volumes of Journals, Standards etc. The library subscribes to about 110 current Journals (Subscribed & Gifted). Library operations have been automated with the help of an integrated library management software package, LIBSYS-4. The book database is accessible through OPAC (Online Public Access Catalogue). It has

good collection of references books related to all branches of the Institute. It has a good collection of electronic resources in its Digital Library. It is an open access library and remains open from 8:30 A.M. to 9:30 P.M. on weekdays and from 9 A.M. to 5 P.M. on Saturdays and Sundays, during vacation 8:30 A.M. to 5:30 P.M. (on Institute holidays remain closed). Library has introduced Wi-Fi facility in the reading halls to access e-resources.

The library has a well-equipped photocopying facility. The users can avail of this facility on payment of a nominal charge. It has also some Audio-Visual equipment like Colour TVs, VCPs, Video Cameras, Direct Projectors, Multimedia Projectors, etc. It has also a good IT infrastructure.

The library is an institutional member of DELNET (Developing Library Network), and NPTEL (National Programme on Technology Enhanced Learning).

It is also a beneficiary member of eSS (e-SodhSindhu) previously known as INDEST-AICTE (Indian National Digital Library in Engineering, Science & Technology) which provides Desktop Access to high quality e-resources (online journals and databases).

### **E-Journals/Databases through e-SodhSindhu (2017) are as follows:**

Sl. No.	Name of Resource	Sl. No.	Name of Resource
1	ACM Digital Library	9	IEEE (IEL Online) Level-2
2	American Institute of Physics (AIP) journals	10	Institute for Studies in Industrial Development (ISID) Database
3	American Physical Society (APS)	11	JGate Plus (JCCC),
4	ASCE Journals Online	12	JSTOR
5	ASME Journals Online	13	Nature Journal
6	ASTM Standards	14	Oxford University Press
7	Emerald 298 Journals Collection	15	Science Direct Content Fees (CFTIs),
8	Economic & Political Weekly	16	Web of Science Lease Access



## LIBRARY INDIVIDUALLY SUBSCRIBED MANY IMPORTANT JOURNALS AND DATABASES FOR THE YEAR 2017. THEY ARE AS:

### 1. E-Journals

Sl. No.	Name of Resource	Sl. No.	Name of Resource
1	Elsevier -Science Direct (11 Subject Collection)	6	Royal Society of Chemistry (RSC Gold EA)
2	Wiley Online (24 Journals),	7	Springer 1400+
3	Emerald Journals	8	PNAS Tier - 3
4	IEEE SWEBOK Course Content	9	Sage iMeChe - Material Science & Engineering & Management & Org. Studies
5	Indian Standards (BIS Code)	10	Taylor and Francis (4 Subject Collection)

### 2. Databases & Tools

Sl. No.	Name of Database/Tools
1	Elsevier -SCOPUS
2	PROWESS Database (CMIE)
3	Project Muse
4	Mathscinet
5	iThenticate (Anti-plagiarism/Similarity measure tool)
6	Grammarly (Writing tool)

### Library subscribes e-Books from different leading publishers:

1. Oxford e-Book collection for Mathematics and Physics,
2. Springer e-Book collection, LNCS (Lecture Note in Computer Science) from 1973 to 2016
3. Elsevier e-Books
4. CRC Press

### Collections:

Total collection of Books, Print journals, etc. are as below (up to 31.03.2018):

<b>(i) Collection</b>	General Book	119896
	Book Bank	40464
	Bound Vol. of Journals	7744
	SC/ST	934
	ISI	5072
	Gift	4356
	Misc.	1485
	TEQIP Books	4244
	<b>Total Collection</b>	<b>1,84,195</b>
<b>(ii) Print Journals</b>	Purchased Journal	57
	Gifted	53
	<b>Total</b>	<b>110</b>



## WORKSHOP

Engineering education in the field of applied science enables one for optimum utilization of natural resources, which are abundant in our country. The Department of Workshop is imparting training to B.Tech students of different engineering disciplines, helping them in completion of their project work and also assisting in preparation of different types of models for participating in the Inter-college competition held nationally and sometimes internationally. Some students have own silver salver and prizes as well, on the scientific models facilitated by us which have made us proud too.

Our Workshop also extends high level expertise in the experimental project works of the M.Tech students of Mechanical and Electrical Engineering Departments in particular.

Keeping pace with the change occurring throughout the globe in Science and Technology, some state-of-the-art machines, e.g. RP m/c, ECM, MIG/MAG, CNC etc. are added in different sections of workshop to make our students equally knowledgeable compared to their counterparts in the advanced countries like USA, Canada, UK etc.

### THE DEPARTMENT OF WORKSHOP COMPRISES OF THE FOLLOWING SHOPS/LABS.

- |                             |                      |
|-----------------------------|----------------------|
| 1. Carpentry & Pattern shop | 5. Black Smithy shop |
| 2. Fitting & Assembly shop  | 6. Sheet Metal shop  |
| 3. Electrical shop          | 7. Welding shop      |
| 4. Machine shop             | 8. Foundry shop      |

Dutta G. Foreman



# HOSPITAL

“Wherever the art of medicine is loved, there is a love of humanity”-Hippocrates. One of the most indispensable necessities in the college campus, the **Medical Unit** of our Institute is served by three resident doctors, three temporary doctors and other medical staff. With Morning and Evening OPDs, there is also a provision of **round the clock medical emergency services**. Apart from the regular doctors, specialist doctors of **various fields visit the medical unit** on fixed days of a week. It has observatory beds, isolation ward for students and dressing room. Moreover, the unit has an **outsourced pathological blood collection and reporting system from IQ city hospital**. The institute is upgrading the old facilities in order to provide the students and the staff with efficient treatment. In case of any serious sickness, patients are referred to State Government Hospital, The Mission Hospital, IQ City Hospital and **some other hospitals with tie up**. The Medical unit has a help desk for insurance for these kinds of treatments.

## MEDICAL OFFICERS:

- DR. B.K. Sarkar Senior Medical Officer
- DR. (Mrs.) S. Patra Medical Officer
- DR. (Mrs.) G. Pravabhati Medical Officer

## TEMPORARY DOCTORS:

- DR. Daisy Bhengra
- DR. Arnab Saha
- DR. Anisul Islam

## HOSPITAL TIMINGS:

1. Monday to Saturday Morning and Evening OPD, Timings: MOPD:9 AM- 1 PM EOPD:5 PM- 9 PM
2. Round the clock emergency services on all days 24x7.
3. Sunday and Institute Holidays- Outdoor facility is not available only emergency facilities available.



S.No.	NAME OF DOCTORS	TIMINGS
1.	Dr.Dipankar Chakraborty(Cardiology and Medicine)	MON (5PM),WED (7PM),THU (5PM)
2.	Dr.Sukesh Nath(Medicine)	TUE (12 NOON)
3.	Dr.Ishani Dasgupta(Gynaec& Obs.)	TUE (6:30 PM)
4.	Dr.Anita Chatterjee(Eye Specialist)	FRI (10:00 AM)
5.	Dr.Subir Mukherjee(Dentist)	TUE (5PM),THU (5PM), SAT (5PM)
6.	Dr.Debashish Roy(ENT Specialist)	FRI (11AM)
7.	Dr.Om Prakash Singh(Psychiatrist)	SUN (9 AM) (ALTERNATE)

**Note: The changes made in the brochure are highlighted with bold letters and are underlined.**



## PURCHASE & STORE



Purchase & Stores Section is the central procurement and store holding Section in the Institute. Its work ranges from procurement and purchase of items, tender floating, stock and inventory management, AMC and issue of items to other Departments/Sections/Centres/Central Facilities etc.

### 2. FACILITIES (RESOURCE/ EQUIPMENT/SOFTWARE/LAB):

Issue of Stock items to Departments/Sections/Centres/Central Facilities etc.

### 3. ACCESSIBILITIES :

Access Hours/Timing: 08:15 a.m. -05.30 p.m with lunch recess of 12.12 p.m. to 01.30 p.m..

Admissible Access: 09.00 a.m. -11.00 a.m. & 2.00 p.m. to 03.30 p.m.

### 4. PEOPLE

Name	Designation	In-charge Head of Section
Mr. Alope Kumar Chattopadhyay	Deputy Registrar (Purchase & Stores)	
Mr. Panchanan Laha	Senior Assistant	Store -2 (1st Floor)
Mr. Debasis Kundu	Senior Assistant	Store -1 (Ground Floor)
Ms. Mina Bahadur	Office Peon	

### 5. CONTACT : 0343 - 2759151/0343 - 2759160





## CLUBS

### DEBATING SOCIETY:

*"It is better to debate a question without settling it than to settle a question without debating it." -Joubert*

The Debating Society is an inseparable part of any college. It represents the leaders on the forefront of expression and intellectuality.

Being a part of this society ensures regular participation in National Level Debates, with past invitations from **IIM, NLU, St. Xavier's, IEST** etc. The mere participation in these debates enlists each member as a dominant force in all world matters. They would also conduct multiple in-house debates to promote a debating culture in this college.

Started in 2016, the Society regularly holds debates on issues of personal and national importance. This comes in the form of major events like **Clarion Call** and **Cross Swords** and even a **Presidential Debate**. They regularly conduct **Online Debates** for the introverts who need that little push. They even created a platform for expressing views during the Student Council Elections.

At the end of the day, the Debating Society strives to provide each student with an unwavering, fearless and independent voice.

### MUSIC CLUB:

*"Where words trail off, music begins!"*

Known for uniting the music fraternity of NIT Durgapur, Mu-C promotes the music culture among the students and faculty alike, giving a stage to willing performers and a platform to beginners to cultivate their skills. It organizes an array of events encompassing many genres, both Western and Indian. Mu-C is a place where students come to jam, learn and make music of different flavours.

The club conducts a variety of activities throughout the year ranging from grand intra-campus shows (Nescafe Jam) and online competitions (Cover-Up) to fierce musical competitions (Battle of Bands). The club performs in college fests Verve, ANK, Aarohan and RECSTACY.

Mu-C is expanding its horizons beyond the campus boundaries by participating in events of other colleges as well as organizing events like Junction Jam.

Mu-C is known for delivering dynamic, innovative, melodic performances which not only caters to the audiences' ears but also satiates their souls.

Being part of this club will help you nurture your skills and also provides a platform for representing the college in various fests and events. There is no greater honour than representing the Institute you study in.

Comprising of members with diverse musical tastes, you will never fall short in having a good time. Bond over jam sessions, showcase your talents and make memories for a lifetime.

So, if your passion is music, then MuC might be your calling.

### GNU/LINUX USER'S GROUP:

*"In real open source, you have the right to control your own destiny" -Linus Torvalds*

The GNU/Linux User's Group, NIT Durgapur is a community of GNU/Linux User's that promote the use of

Free and Open Source Software(FOSS). The Group was established in 2003 by a bunch of FOSS enthusiasts with the idea of popularising and contributing to Open Source. We provide budding enthusiasts like ourselves a forum to contribute and learn about FOSS.

Through varied workshops on revolutionary technologies throughout the year, we spread the idea of Open Source to beginners and veterans alike. We bring people together to ideate and contribute to the leading Open technologies. We provide help and resources to everyone who wants to make the web world a better place. As FOSS enthusiasts, we preach the idea of “free things are the best things” and firmly believe in sharing knowledge.

We strive to elevate the tech culture in our college and for science to make a difference in the world so if you are an open source enthusiast and want to learn more about technology, this club is your nerdvana.

### QUIZINC:

*“To know what you know and what you do not know, that is true knowledge.” - Confucius*

QuizInc, the Knowledge Club of this college, strives to unveil the unknown and display the unseen. One of the most active clubs of this college, QuizInc ensures that there is at least one quiz every month. Started in 2003, it is one of the few clubs of this college that has its own Major Fest- Quizzitch Cup. In totality, the club has a footfall of over 600 participants every year.

Renowned Colleges and schools from all over East India have taken part in their quizzes such as **DPS, St. Xavier’s, IEST, Calcutta University**, etc. They even collaborated with **NIT Silchar and NIT Warangal**, to organise national quizzes of prize money Rs. 40000!

Being a part of this club ensures an unlimited flow of rare and valuable knowledge, as well as the unique skill of thinking on your feet. Some of the most intellectual and witty people on campus (as well as outside campus) will surround you with their opinions, quirky facts and witty comments.

Some of their exciting quizzes include- India Quiz, TV Series Quiz, Newspaper Quiz, Bollywood Quiz and FLAMES Quiz.

There’s only one question left unanswered. What exciting events and quizzes do they have in store for you, this coming academic session? Show up and you’ll find out!

### INDIAN SOCIETY FOR TECHNICAL EDUCATION STUDENTS’ CHAPTER DURGAPUR:

ISTE Students’ Chapter NIT Durgapur is one of the oldest student chapters of ISTE constituted way back in 1990s and headquartered in New Delhi, ISTE is a Premier National Society with student chapters across various institutes including IITs and NITs for students and teachers of technical education system with 5.5 lakh student members, 2410 institutional members, 1214 faculty chapters and 1322 student chapters across India.

The major objective of ISTE-NIT Durgapur is to provide quality training programmes to the students to update their knowledge and skills in their field of interest and to assist and contribute in the production and development of top quality professional engineers and technicians needed by the industry and other respective organizations. Thus, along the lines of its’ motto ISTE NIT Durgapur Chapter is credited with organizing activities such as Inter College Technical Meet, All India Students’ Engineering Congress, Industrial Trips, Seminars and Workshops by allied professionals etc. throughout the year with participation of students from various institutes in and around Durgapur.

**BMEP:**

*“Be the change that you want to see in the world” -Mahatma Gandhi*

BMEP (Bihari More Education Project) is a volunteer driven initiative by students of NIT Durgapur aimed at eradicating illiteracy in and around the vicinity of NIT Durgapur campus by mentoring underprivileged children. It has served as a platform for many little buds to bloom and enhance the potential they possess within. The volunteers selflessly dedicate themselves towards inculcating values and intensifying their avidity towards learning more and learning better. Through the Institute’s cooperation, classes are conducted every weekend during morning hours, within the campus to provide a better learning atmosphere for them. Sports day is also organized for them to unleash their sportsmanship and other important dates are also celebrated with them to keep them enlightened about the essence and importance of those days. Through the relentless efforts of all the helping hands, alumni members and volunteers who have supported BMEP all along and made donations, our meritorious kids have excelled in various academic fields, their efforts have given these children wings to soar high up in the sky and dream big, we have been able to get them admitted to many schools.

**DANCE CLUB NIT DURGAPUR:**

*“The only way to make sense out of change is to plunge into it, move with it and join the dance.”*

The Dance Club, affectionately called DC, was formed in the college in the year 2003-04. This club is a storehouse of talented members who have keen interest in dance and have been active in promoting it in the college as well as other colleges of national importance all over India. The members of the Dance Club strongly believe in versatility in their practise and hence perfect popular forms like Hip Hop(main form)urban , Bollywood(main form) ,Lyrical Hip Hop, freestyle, Whacking as well as Traditional dance forms like Salsa and classical dance forms – Kathak, Bharatnatyam, Odissi, Kuchipudi , to name a few. DC participates in college events like ANK, AAROHAN, VERVE, RECSTACY and never fails to put up spectacular performances during the Independence Day, Republic Day and MatribhashaDiwas Celebrations. The achievement of Dance Club in the past academic year, speaks proudly how talented and immensely popular this club is as compared to the clubs of other institutes. DC participates in inter college fests and events like V-Fest, Centrifuge(group dance) and Two for a Tango(duo) in Spring Fest(IITKGP), Carpe Diem(IIM Calcutta) and has bagged positions in almost every fest last year. Apart from participation in inter college fests, this club has conducted several workshops in the fests of this college, the most recent one being the Zumba Dance workshop in ANK 2016. The club is open to those enthusiasts those who wish to hone their dancing skills and make maximum utilisation of the opportunities provided by this institute to cultivate their talent further. The Official Dance club of this college aims at innovation, versatility, progress, entertainment and most importantly success in the coming academic year.

**MATHS 'N' TECH CLUB:**

*“Pure mathematics is, in its way, the poetry of logical ideas.” -Albert Einstein*

If you believe that Mathematics is undoubtedly the most ancient yet most intriguing of all sciences ever developed by humans, then MNTC is the place for you. Even in today's brutally competitive world, where economies fall like stash of dominoes, mathematics retains its significance as a pre-requisite for being successful, be it in corporate world or financially ascetic but astute technocratic circles. Creativity when spiced with technology inter-relates knowledge with society and the environment, the basic thing that one needs for survival in this world and that is what MNTC stands for.

Established in 2004, MNTC was set up with the motive of creating a platform for mathematical fervor through a multitude of challenges realising the importance of analytical reasoning and rational thinking. We conduct various maths based contests with college students, throughout the year.

### **LITERARY CIRCLE:**

*"Making the simple complicated is commonplace; making the complicated simple, awesomely simple, that's creativity." -Charles Mingus*

If traits like originality, creativity and literary prowess resonate with you, Literary Circle is your place. Much like its name, LC endlessly strives to achieve perfection and is centred at intellect, originality and variety. It serves as a platform for the creatively inclined to express themselves in myriad ways. outside the rigors of an engineering students life. Our motto is to think out of the box and think sky high. Amongst other things, we publish an edition of the official college newsletter and the college magazine, Déja vu, every year. Literary Circle tries to provide the students with a plethora of opportunities to showcase their talents and pique their interest through a list of events throughout the year, namely, NITMUN that you the chance to explore your intellect and confidence through its Model United Nations, VERVE, the annual youth cum literary fest of NIT Durgapur with a plethora of events and workshops to enchant and enthrall all and much more.

### **PRAKRITI:**

*"The Earth does not belong to us: we belong to the Earth" -Marlee Matlin*

We the people of Prakriti The Environmental Club of NIT Durgapur, strive to make a difference and inculcate the seed of awareness and action in the minds of prospective engineers to make this environment a sustainable place for every living being. If you want to change the notion that Engineers do not care for environment into making every individual on campus, a Green Engineer, who minimizes the risk of pollution that might be caused with new inventions of breakthrough researches in technology, then Prakriti is your chance to do that.

As a club, we imbibe to the values our Mother Nature has taught us :Prescverance, Sustenance and Progress, Right from its rootage, Team Prakriti has made true those environs of the founders of our club and crossed many milestones ever since its onset. We conduct our events throughout the year, reminding and awaking the slumbered minds, the importance of environment and its preservation. We organise a series of events including Green Art, Plantation, Green Diwali, RUN IT, Earth Hour, etc, to spread awareness environment

### **SOCIETY FOR AUTOMOTIVE ENGINEERING:**

The SAE India Collegiate Chapter, since its inception in 2007, form the pillars of brilliance in this college, envisioned to anchor itself as an indispensable society in the hearts and minds of all avid automobile enthusiasts. Switching gears from a regular academic life in lecture halls and drawing labs, this society has encouraged students to drive into faster lanes with the amalgamation of innovation, knowledge, application and talent under the same hood. The guidance of an excellent and unparalleled group of mentors has helped the club to continue the legacy of its explosive ignition four years ago, successfully inaugurating its unique auto fest "Motor Zundung". Motor Zundung stood for the endeavour to appreciate raw talent and give budding technocrats a feel of real-time automotive acumen with a plethora of online gaming events, robotic events, non-robotic events including Auto Quiz, Jig for a jigsaw and even a mini auto-expo. SAE overall organizes



workshops on IC engines in association with Delflip, IIT Kharagpur, wherein renowned experts and research scholars from Delflip perform demonstrations and deliver lectures to instill into the future automobile enthusiasts, the detailed working and explanation of mechanisms in an IC engine. With sponsorships from Tata Motors, Toyota and Fiat to boast of SAE India has participated in Baja SAE-India one of India's biggest automobile project platforms and delivered a spectacular performance, leaving an indelible impression in an Inter college event of such stature. The SAE India Collegiate Chapter of NIT Durgapur is all set to propel ahead in the years to come. Hence this club provides the best platform and a plethora of opportunities for all the budding automobile enthusiasts ranging across all the departments in this institute. A club with a different vision and a unique mission, strives to instill among the future engineers of the college the passion for working and experimenting with robots and automobiles

### **SPIC MACAY NIT DURGAPUR CHAPTER:**

SPIC MACAY NIT Durgapur is a part of nationwide voluntary youth movement that organises programmes of classical music and dance, folk arts, crafts, yoga, classic cinema screenings, heritage walks, etc. inside the college campuses throughout the world to make students more aware about Indian and world heritage. This initiative makes education more holistic and meaningful as it highlights all that is abstract, subtle, inspiring and mystical in the world teaching one to look within oneself. SPIC MACAY promotes intangible aspects of Indian culture through a variety of endearing events like Kite festivals, classical dance performances, etc. VIRASAT, the grand fest organised by SPIC MACAY, is a spectacle of classical dance and musical performances by world famous artists that celebrates our heritage at its best.

### **RADIO NITROZ:**

If being a RJ has been a life long dream of yours, search no more. Conceived in 2006-2007, Radio Nitroz is the official Radio Station of NIT Durgapur. With the aim of bringing the students of the closer and connecting to all, RN is reputed to be the third largest LAN/Internet based radio station among all IIT's and NIT's.

It aims is to create a crazy family within the college. Specialities include Dedications wherein one can dedicate song to their loved ones live each night from 10:00-12:00pm.

People can also connect to RN through the official youtube video channel- The speciality includes 'VideoKahinka' which makes original video on playful themes to entertain students.

Apart from the online events RN is associated with all the clubs within the campus and conduct many fun filled events throughout the year. So unleash the fun with Radio Nitroz.

### **ENTERACT**

The stage is not merely the meeting place of all arts, but is also the return of art to life.-Oscar Wilde

Enteract, the official dramatics club of NIT Durgapur has been providing a platform to one and all in the college to showcase their talents in dramatics which gets somewhere lost amidst the daily class routines and has been helping people improve their dramatics skills.

The club not only takes charge of the entertainment field but also spreads awareness among people through modes of street plays and through short films.

The club enthusiastically contributes in making RECSTACY the biggest cultural fest of NIT-dgp by organizing a lot many workshops and events of different genres.

The club performs on various events in the college throughout the year ranging from republic day to independence day from flash mob to nss camp.

Over the years, the club has put up excellent performances in many other fests and has achieved accolades in the field of art and dramatics by winning in street plays, stage plays, mime and monoacting at Spring fest(IIT Kgp), Carpe- diem(IIM-C) and Rendezvous(IIT Delhi)

Enteract is about cheerful faces singing and tapping their feet joyfully to the drumbeats, their voices loud echoing through the walls of SAC making the surrounding reverberate with the same energy, thus cultivating dramatics skills in the young technical minds.

### **RECURSION**

RECurSION NIT Durgapur is an initiative to embolden the budding coding minds through regular Code Classes, robust coding competitions and geeky sessions.

Pioneered by a faction of enthusiasts in 2014, RECurSION has continued to evolve ever since. Besides a fancy placement package, We seek to ameliorate participation in programming competitions like ACM ICPC etc.

Our dynamic panel is invariably available to sort any techie doubts and cultivate positivity in you. We intend to create an intriguing ambience where coding is more of a mind sport and after every green tick the Coder in you gets bigger and wittier. So if you have those bits hovering over your head 24\*7, RECurSION is your Solution!

### **ENTREPRENEURSHIP DEVELOPMENT CELL**

Entrepreneurship Development Cell of NIT Durgapur formerly known as NEN NIT Durgapur students chapter is the one and only independent and official cell of the institute of National Importance inculcating an entrepreneurial environment across the campus. If you dream of being your own boss and wish to head your very own start-up, EDC is here to guide you. The main target of the club is to make NIT Durgapur stand out of the box from other colleges in the startup showcase across India. For the same purpose, there are different events conducted across the year like Sangyaan, Entrepreneurship Fair etc. In 2016, EDC has set a mark in the college by introducing learnwise classes under the aegis of National Entrepreneurship Network. Learnwise is a unique package developed by Wadhvani Foundation and we, here at EDC have taken up the responsibility of conducting it giving students practical insights about entrepreneurship and innovation. Amidst the academic hustle EDC comes up with Sangyaan, a bizz marathon. Its sole purpose is to instill the virtues of entrepreneurship, for which well thought events are commenced. Our blast event of the year is Entrepreneurship Fair. In E-Fair 2k17, the events were laid on the pillars of rural entrepreneurship. Stalls were set up to house the indigenous small scale start-ups from all across the country. Three big events namely B-plan, business plan presentation event. Next was Auction Arcadia, meant to give real time fantasy bidding experience and glamorous Ethnica, the fashion walk.

### **CCA (CENTRE FOR COGNITIVE ACTIVITIES):**

CCA, the Official Science Club of NIT Durgapur. It is the focal point where convergence of all technical and scientific endeavors of the students materializes. As the official technical club of the institute, this club bridges the gap between knowledge and application. Bulk of the extracurricular activities held in the college all the year round are organized by the CCA, with the objective of stimulating the grey cells of human mind to create, conceptualize and evolve a rebellion of mind against baseless conventions and meek acceptance.

CCA is divided into five wings which work together in collaboration with each other. These cells basically function to cover every aspect required for the success of an organization.

**1. CORE CELL**

Motivating, along with leading is a task well known by these robust people. Engaged throughout the year, working behind the scenes, the core cell excels in cooperating with the other cells to get things done. It also take care of proper publicity and gathering potential sponsors for the club.

**2. ENTREPRENEURSHIP CELL**

Believing in the potent power of imagination and dreams to nourish the spirit of entrepreneurship among its members from the student community and faculty, inspire and encourage them to take on entrepreneurial challenges and assist them in their efforts to launch and run their business and try to foster technical innovation within the campus.

**3. WEB DESIGN AND CREATIVE TEAM**

With the present boom of social media and online connectivity, this team designs the Web platform for the club in form of Websites and Social media Pages. They also ensure the designing of posters and presentations for publicity and conduct online events to keep people busy with u.

**4. ROBOCELL**

They work for the inculcation of technical innovations and is here to bridge the gap between the prevailing technology and you. It is the place to know about the robots beyond the boundaries of conventional concepts of study.

**5. RESEARCH DEVELOPMENT AND INNOVATION CELL**

Lighting the torch of wisdom, this cell provides the brilliant minds in campus a platform to showcase and quench their quest of research and innovation. Along with its initiatives of Paper Presentation, IEEE Certification, Model Making & Science Exhibition, they fulfil the endeavor for budding brains.

CCA every year conducts aarohan, which is the second largest techno management fest of eastern India. Aarohan is a paradise of innovation. It comprises of ardent competition, elucidative workshops, exhibitions, illuminating talks and exhilarating pro nights that inspire, enthrall and mesmerize the massive hordes that attend. The forte of this festival lies not only in its spectacular display of technical acumen but also in its wide platform for social initiatives.

## E-Journals/Databases through e-SodhSinEdhu (2017) are as follows:

Sl. No.	Name of Resource	Sl. No.	Name of Resource
1	ACM Digital Library	9	JSTOR
2	All Society Periodicals Package (ASPP) & Proceedings Order Plan (POP),	10	Nature
3	ASPP and POP Proceedings	11	Oxford University Press
4	ASCE Journals Online	12	Science Direct Content Fees (CFTIs),
5	ASME Journals Online	13	Web of Science Lease Access
6	ASTM Standards	14	AIP
7	Emerald 295 Collection	15	Economic & Political Weekly
8	JGate Plus (JCCC),	16	IEEE/IEE

Library individually subscribed many important journals and databases for the year 2016-17 they are as:

Sl. No.	Name of Resource	Sl. No.	Name of Resource
1	Wiley Online (7 Subject Collection),	6	PNASTire-3
2	Project Muse	7	PROWESS Database (CMIE)
3	Royal Society of Chemistry (RSC Gold EA)	8	Taylor & Francis (4 subject collections)
4	Mathscinet	9	SWEBOK, IEEE
5	Springer 1400+	10	SAGE iMeChe

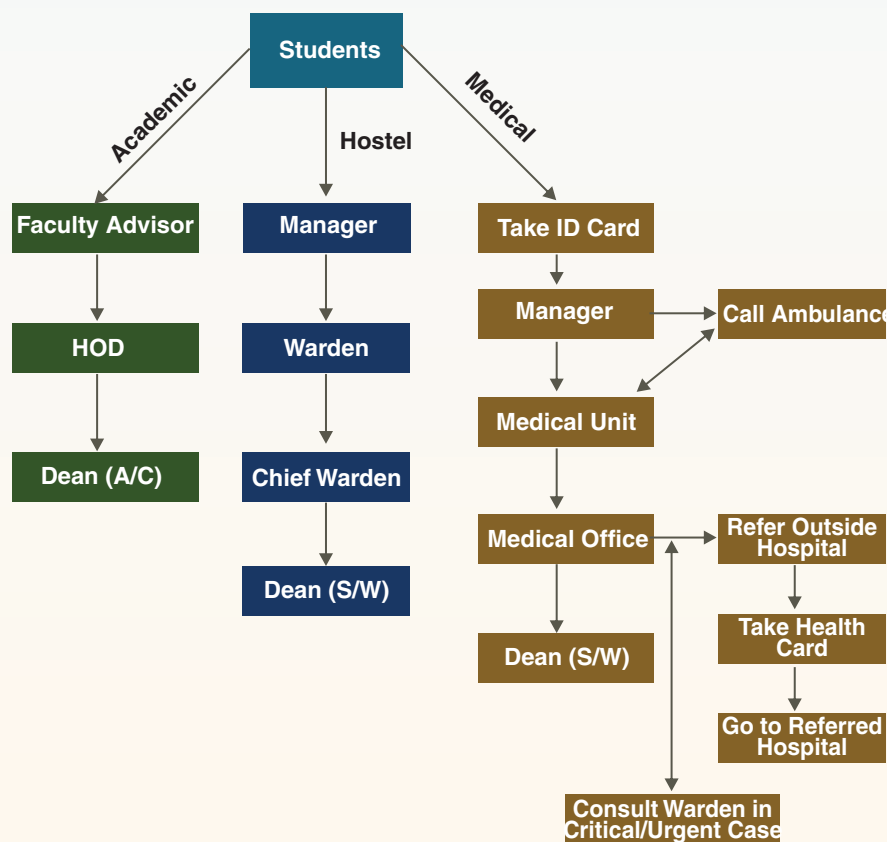
### Services:

1. iThenticate, similarity measure tool
2. SCOPUS database
3. BIS (Indian Standards)
4. Grammerly (writing tool)

### e-Books from different leading publishers :

- Oxford e-Book collection for Mathematics and Physics,
- Springer e-Book collection, LNCS (Lecture Note in Computer Science) from 1973 to 2018
- Elsevier e-Books

### When to meet whom





# NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR

## General conduct and disciplines to be maintained by the boarders

### Do's

### Don'ts

1. Do stay in the room allotted to you.

1. Do stay in the room allotted to you. I. Do not mutually exchange rooms after the completion of final allotment (Chief Warden may, however, allow for the same, in special cases, on valid and reasonable grounds.) Violation of this rule will be considered as an act of gross misconduct and will entail appropriate disciplinary action, including imposition of heavy fine and expulsion from the Hostel.

2. Do keep the rooms and the hostel premises clean. Do keep note of the fact that the Warden team member or any authorized member of the Institute staff can inspect the room of any student in the hostel at any time to ensure proper cleanliness and other discipline related matters.

2. Do not engage a private servant or keep pet animals.

3. Do avoid the use of motor vehicles such as Cars, Motorcycles, Scooters, Hopeds, etc., inside the institute/hostel premises. If any boarder is found to have any of the above items in possession, strict action will be taken by the competent authority.

3. Do not remain absent from your hostel during the night without the prior permission of the Warden. Hostel Closing time: 6:00 P.M. (for girls), 6:00 P.M. (for boys) for all days. [Disciplinary action may be taken if a student returns to the hostel after scheduled hostel closing time (6 P.M. To 6 A.M.) without prior permission.

4. Do carry your identity card whenever you go outside the hostel and do produce the aforementioned identity card on demand from institute / Hostel authorities. Else, the student may be fined or disciplinary actions may be taken.

4. Do not leave the hostel premises on holidays for the purpose of excursion or picnic or going home. Permission from the Wardens/Chief Warden has to be obtained before going for a picnic or excursion or home. (However, the Institute authorities will not be accountable or responsible for any eventuality that may occur during picnic/excursion,)

5. Do maintain the room furniture, electric fittings, and LAN fittings, Room Wall, Door in good condition. At the time of room allotment and while leaving the hostel, do be careful in matters pertaining respectively to the take-over and hand-over of the hostel property. The boarder shall not cause any kind of damage to hostel property.

5. Do not, keeping your own interests in perspective, leave excess cash or any other valuables unguarded in your hostel rooms.

6. Do lock your rooms before going out for bath, food, food etc. (In the cases pertaining to double / triple/four seated accommodations, each roommate should have a key of the door lock of her room.) Do keep your rooms, boxes, suitcases, cupboards, etc., securely locked with good quality locks.

6. Do not disregard the mandate whereby male students are strictly forbidden from entering the Girls' Hostel and female students are forbidden from entering Boy's Hostel.

7. Do be mindful of the fact that you are personally responsible for safeguarding your belongings. Any theft of Laptop, mobile phone, computer, purse, calculator, wristwatch, wallet or any other valuable item is to be accounted for solely by your sense of responsibility. Do be careful about the safety of your belongings. You are advised to dose your room securely when you leave the room, even for a short period of time, or while sleeping. (Institute shall not be responsible for the loss of such items due to theft or otherwise.) However, in the case of theft, do report the matter to the Security Control Room (SCR) of the Institute,

7. Do not forget that Parents/relatives if friends are no! allowed to stay in the hostels. They must obtain prior permission from the Registrar to stay in the institute guesthouse.

8. Do report all disputes to the hostel Warden, and avoid all kinds of shouting, fighting, gambling, stealing, violent knocking, maltreating or abusing.

8. Do not consume alcohol and other intoxicants and drugs. Do not keep any firearms, lethal weapons, poisonous things or intoxicants of any kind in the Hostel. Do not take law into your own hands. Violation of any of the rules will entail strict disciplinary action. Do riot gel involved, endorse, participate in, or propagate the act of ragging junior students in any form and violation of this will be treated as a gross misconduct.

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9. Do switch off the lights and fans, when they are not in use, Use water and electricity judiciously. (If fan, tube, etc., is/are found turned ON in the absence of the students at their rooms, fine will be charged by hostel authorities.)

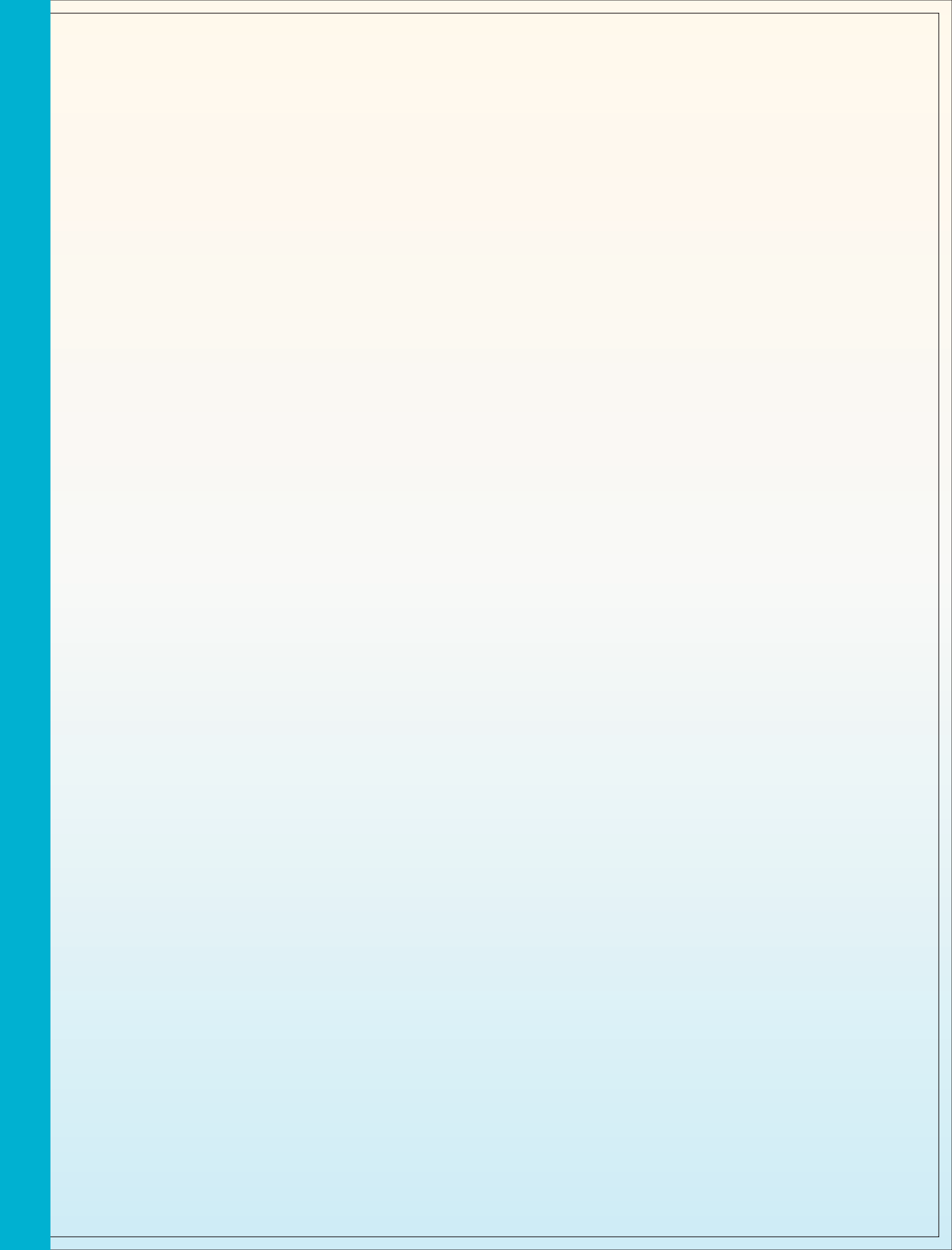
9. Do not take meal or utensils to your rooms. Heavy penalty will be imposed if this rule is violated. Only under special circumstances, such as severe illness, and with prior permission from the hostel warden, the student may be allowed to take food in her room.

10. Do make entry in the "In/Out Register" kept in the Hostel office, in accordance with the norms of the Hostel authorities.)

10. Do not use any electrical appliance, such as R&frigerstor, Air Cooler etc., in your respective rooms. Do not cook food in the hostel room. In order to avoid fire hazards, no firs producing equipment in the room is permitted.

11. Do treat your fellow boarders, institute staff, hostel staff, mess staff with dignity and decorum.

11. Do not patronize food/soft drinks/snacks from unhygienic shops and road-side vendors. These measures will help you in avoiding infection and will also prevent or reduce the spread of infections and diseases among fellow boarders.





You have to dream  
before your  
dreams can  
come true.