

MANDATORY DISCLOSURE BY INSTITUTIONS RUNNING AICTE APPROVED ENGINEERING/TECHNOLOGY/PHARMACY PROGRAMMES TO BE INCLUDED IN THEIR RESPECTIVE INFORMATION BROCHURE, DISPLAYED ON THEIR WEBSITE AND TO BE SUBMITTED TO AICTE EVERY YEAR LATEST BY 30TH APRIL TOGETHER WITH ITS URL

The following information is to be given in the Information Brochure besides being hosted on the Institution's official Website.

"The information has been provided by the concerned institution and the onus of authenticity lies with the institution and not on AICTE."

I. NAME OF THE INSTITUTION

BLACK DIAMOND COLLEGE OF ENGINEERING &
TECHNOLOGY, JHARSUGUDA (BDCET)
AT: L&T, DHUTURA ROAD
PO/DIST: JHARSUGUDA(ORISSA) PIN-768202
Post Box No. 21
Phone. No:- (06645) 270362, 9337054892
Fax No.:- (06645) 270848
E.mail: blackdiamondorissa@rediffmail.com

II. NAME & ADDRESS OF THE DIRECTOR/ PRINCIPAL

DR. SHRIRAM ROY
AT: QR.NO-B-62, CGM COMPLEX,
IB VALLEY AREA, PO: BRAJRAJNAGAR,
DIST: JHARSUGUDA-768216
Phone. No:- (06645) 242233, 9777038081
Fax No.:- (06645) 242988
E.mail: shriram_roy@rediffmail.com

III. NAME OF THE AFFILIATING UNIVERSITY

Biju Patnaik University of Technology (BPUT),
Rourkela Orissa
Phone: (0661) 2501349, (0674) 2352223
Fax: (0661) 2501345, (0674) 2352229

IV. GOVERNANCE

❖ **Members of the Board and their brief background**

Sl. No.	Name	Address	Designation
1.	Sri. Rajendra Prasad Singh	At. Mandalia Colony, Post. Brajrajnagar, District Jharsuguda	President
2.	Sri. Kishore Sakunia	At/Post. Beheramal, District Jharsuguda.	Vice President
3.	Sri. Anil Singh	Dwarikapuram, Post. Beheramal, District. Jharsuguda.	Secretary
4.	Sri. Bhagirathi Sahu	At. R Katapali, Post. Brajrajnagar. District: Jharsuguda	Joint Secretary
5.	Sri Satya Prakash Singh	At. Mandalia, Post. Brajrajnagar, District: Jharsuguda	Treasurer

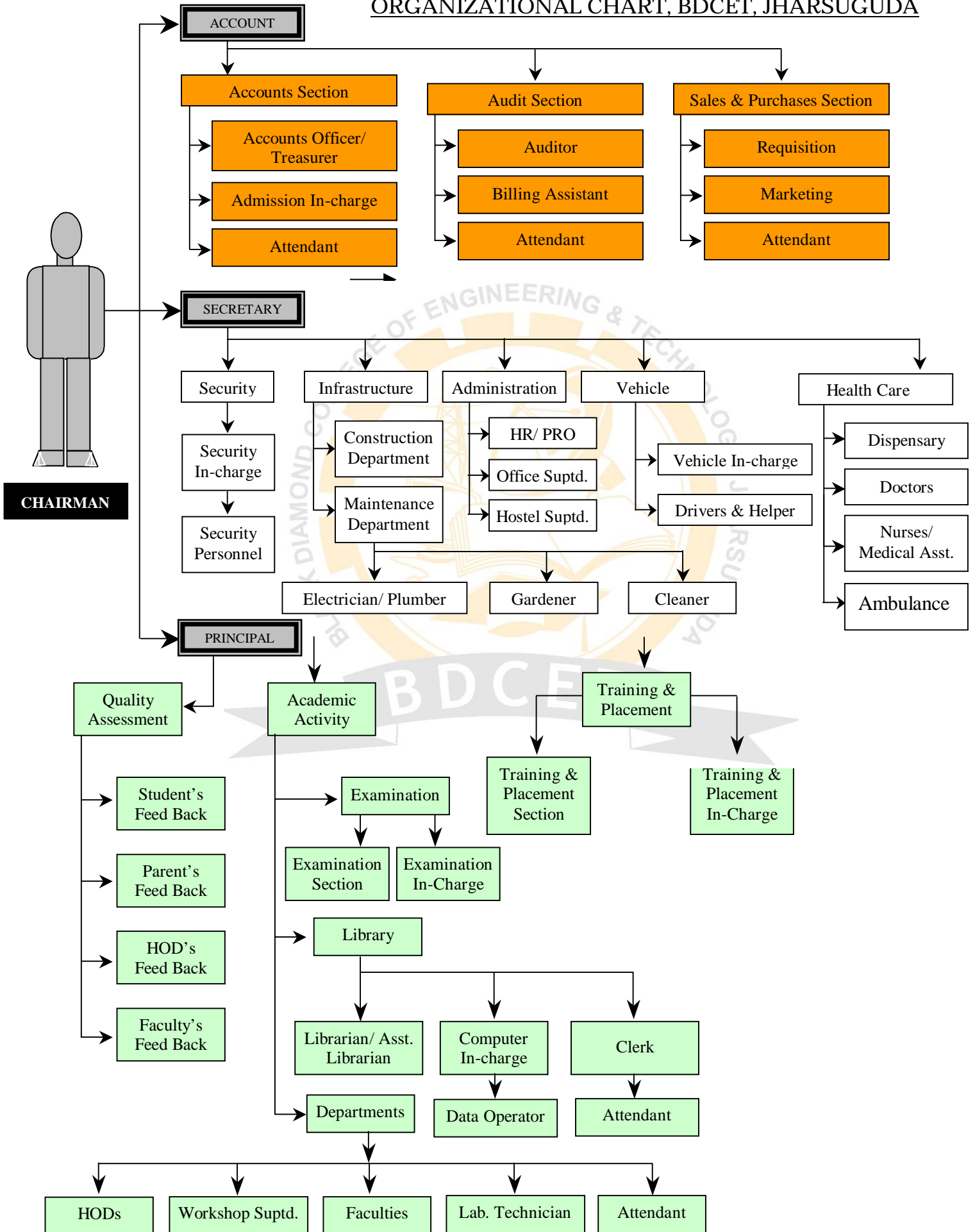
❖ Members of Academic Advisory Body

Sl. No.	Name	Designation
1.	Dr. Ganapati Panda	Deputy Director, IIT Bhubaneswar.
2.	Mr. U. K. Mallick	Principal, JES, Jharsuguda.
3.	Er. Shriram Roy	Principal, BDCET
4.	Mr. Tahalu Sahu	Administrator
5.	Er. G. S. Panda	Academic Coordinator
6.	Er. H. C. Panigrahi	Workshop Superintendent
7.	Dr. D. K. Sahu	Professor, Humanities
8.	Mr. S. K. Panigrahi	Asst. Professor Humanities

❖ Frequency of the Board Meetings and Academic Advisory Body : [Quarterly review](#)

❖ Organizational chart and processes

ORGANIZATIONAL CHART, BDCET, JHARSUGUDA



- ❖ Nature and Extent of involvement of faculty and students in academic affairs/ improvements:
Student ~ Faculties interaction/ discussion on academics matter/ study tours and industrial visits/ technical seminars and communicative skill development programs.
- ❖ Mechanism/Norms & Procedure for democratic/good Governance:
Interaction of top level management (Chairman/ Secretary/ Administrator & Principal) for curriculum and infrastructures development, faculties feedback, students feedback discussion and solution of problems. Quarterly open-minded meetings in friendly environment. All problems are being solved by the assigned responsible persons in roper time.
- ❖ Student Feedback on Institutional Governance/faculty performance:
A team of Senior Students take care of the students requirement, place before the appropriate faculties as well as with the management. Senior Faculties (HOD/ Workshop Superintendent) motivate Faculties to perform their best of capabilities for over all development of all students.
- ❖ Grievance redressal mechanism for faculty, staff and students:
During the quarterly meeting of the Board all Grievance are taken into consideration and immediate solution. Grievance are being collected through proper channels and placed in the agenda of the Board meeting

V. PROGRAMMES

- ❖ Name of the Programmes approved by the AICTE:

B-Tech degree course in

1. Computer Science Engineering
2. Electrical Engineering
3. Electronics & Telecommunication Engineering
4. Mechanical Engineering

- ❖ Name of the Programmes accredited by the AICTE

NIL

- ❖ For each Programme the following details are to be given:

Sl. No.	Name	Number of seats	Duration	Cut off mark/ Rank	
				2008-09	2009-10
1	Computer Science Engineering	60	4 Years	31650	29696
2	Electrical Engineering	60	4 Years	24777	43056
3	Electronics & Telecommunication Engineering	60	4 Years	25315	40706
4	Mechanical Engineering	60	4 Years	18027	41778

- Fee: Rs. 52,000 Per year
 - Placement Facilities: Not Required (as being a new college)
 - Campus placement in last three years with minimum salary, maximum salary and average salary: Not Required
- ❖ Name and duration of programme(s) having affiliation/collaboration with Foreign University(s)/ Institution(s) and being run in the same Campus along with status of their AICTE approval. If there is foreign collaboration, give the following details:

Details of the Foreign Institution/University:

- Name of the University/Institution NIL
 - Address
 - Website
 - Is the Institution/University Accredited in its Home Country
 - Ranking of the Institution/University in the Home Country
 - Whether the degree offered is equivalent to an Indian Degree? If yes, the name of the agency which has approved equivalence. If no, implications for students in terms of pursuit of higher studies in India and abroad and job both within and outside the country.
 - Nature of Collaboration
 - Conditions of Collaboration
 - Complete details of payment a student has to make to get the full benefit of collaboration.
- ❖ For each Collaborative/affiliated Programme give the following:
- Programme Focus
 - Number of seats
 - Admission Procedure
 - Fee
 - Placement Facility
 - Placement Records for last three years with minimum salary, maximum salary and average salary
- ❖ Whether the Collaborative Programme is approved by AICTE? If not whether the Domestic/Foreign Institution has applied to AICTE for approval as required under notification no. 37-3/Legal/2005 dated 16th May, 2005

VI. FACULTY

❖ Branch wise list faculty members:

- Permanent Faculty

Faculty Position for the existing programme(s) (Programme-wise)

Name of the Programme (UG & PG)	Total Sanctioned Intake (last 4 yrs. for Engg./Arch./HMCT/ Pharmacy/ Applied Arts etc. , last 3 yrs. for MCA and last 2 yrs. for MBA/ PGDBM)	Total number of Faculty required as per norms (column 2 divided by 15)	Details of Faculty Available						Nature of Appointment		
			Professors (Rs. 16400-22400 scale) Ph.D. / Non Ph.D.		Assistant Professors/ Readers (Rs. 12000-18000) Ph.D. / Non Ph.D.		Lecture Rs. (Rs.8000 - 13500)	Total	Others/ visiting faculty	Total number of faculty Permanent & Approved by University	Total number of faculty on adhoc Basis
			Ph.D.	Non Ph.D.	Ph.D.	Non Ph.D.					
B.Tech in	2008-2009 & 2009-2010 (Total 2 Years)										
Computer Science Engg	60+60=120					06			06		
Electrical Engg	60+60=120	33		01			05		06		
Electronics & Tele Comm Engg	60+60=120					02	03		05		
Mechanical Engg	60+60=120		01	01		01	04		07		
Humanities			01			01	07		09		

- Visiting Faculty

1. [Er. S. Ray HOD Mechanical JES, Jharsuguda](#)
2. [Dr. K. Panda Lecturer in Chemistry L.N. College, Jharsuguda](#)

- Adjunct Faculty

❖ Guest Faculty

1. [A. Routray Proff. Electrical Engg Dept., IIT Kharagpur](#)
2. [Dr. Ganapati Panda, Deputy Director, IIT Bhubaneswar](#)

- Permanent Faculty: Student Ratio: 1:15

❖ Number of faculty employed and left during the last three years:

[Left 4 nos. \(during summer vacation in the month June\) Employed Total 10 nos. during the session 2009-10.](#)

VII. PROFILE OF DIRECTOR/PRINCIPAL WITH QUALIFICATIONS, TOTAL EXPERIENCE, AGE AND DURATION OF EMPLOYMENT AT THE INSTITUTE CONCERNED

1. Name : Dr. Shriram Roy
2. Date of Birth : 15/02/1958
3. Educational Qualification : M. Tech (Civil), PhD
4. Work Experience
- Teaching : 23 Years from July 1985 to till date
 - Others
 - Research Works : From October 1993 to March 1995 (Research on Black Cotton Soil)
5. Area of Specializations : Soil Mechanics & transportation Engineering
6. Subjects teaching at Under Graduate Level: Soil Mechanics, Transportation Engg., Water Power Engg.



- Post Graduate Level
7. Research guidance : Research on Black Cotton Soil (Soil Mechanics) under Dr. A Prakash (HOD Civil Engg., MIT, VRA Bihar University, Muzaffarpur)

No. of papers published in

National Journals

Master's

1 No. (Pavement Design)

Ph.D.

1 No. (Black Cotton Soil)

International Journals

NIL

Conferences

- I. (Conference on Total Quality Management at BOSE, Cuttack in the year 2005)
- II. (Conference on Disaster Management at IIT Gowhati in the year 2006)

8. Projects Carried out : Water Power Engg as elective(UG Level) Pavement Design (PG Level)
9. Patents
10. Technology Transfer : NIL
11. Research Publications : Black Cotton Soil (Characteristics, behavior and effect)
12. No. of Books published with details: NIL

VIII. FEE

- ❖ Details of fee, as approved by State fee Committee, for the Institution : 52,000.00/- per Year
- ❖ Time schedule for payment of fee for the entire programme. : Yearly, at the time of Commencement of Odd Semester Classes (1,3,5,7)
- ❖ No. of Fee waivers granted with amount and name of students. : NIL
- ❖ Number of scholarship offered by the institute, duration and amount : NIL
- ❖ Criteria for fee waivers/scholarship. : Not Required
- ❖ Estimated cost of Boarding and Lodging in Hostels. : Rs. 40,000/- Per Year

IX. ADMISSION

- ❖ Number of seats sanctioned with the year of approval.

2008-09	60 in each Branch out of 4 Branches total 240 Nos.
2009-10	60 in each Branch out of 4 Branches total 240 Nos.

- ❖ Number of students admitted under various categories each year in the last three years.

2008-09

AIEEE Candidates	32 Nos.
NRI Candidates	36 Nos.
WO Candidates	34 Nos.
GC Candidates	09 Nos.
GE Candidates	92 Nos.
ES Candidates	01 Nos.
OS-GE Candidates	20 Nos.
SC Candidates	12 Nos.
ST Candidates	04 Nos.
<u>Total</u>	<u>240 Nos.</u>

2009-10

AIEEE Candidates	27 Nos.
NRI Candidates	19 Nos.
WO Candidates	14 Nos.
GC Candidates	08 Nos.
GE Candidates	66 Nos.
ES Candidates	02 Nos.
OS-GE Candidates	15 Nos.
SC Candidates	09 Nos.
ST Candidates	09 Nos.
<u>Total</u>	<u>169 Nos.</u>

- ❖ Number of applications received during last two years for admission under Management Quota (against 15% NRI Vacancies) and number admitted.

Branch	Year	No. of Application Received	No. of Student Admitted
1. Mechanical	2008-09	9	9
2. Electrical		9	9
3. Computer Science		9	9
4. Electronics & Telecommunication		9	9
Total		36	36
1. Mechanical	2009-10	6	6
2. Electrical		6	6
3. Computer Science		1	1
4. Electronics & Telecommunication		6	6
Total		19	19

X. ADMISSION PROCEDURE

- ❖ Mention the admission test being followed, name and address of the Test Agency and its URL (website).

Orissa State conducted test through OJEE, website : www.jeeorissa.com

- ❖ Number of seats allotted to different Test Qualified candidates separately [AIEEE/CET (State conducted test/University tests)/Association conducted test] :

- AIEEE 15% of the intake in each branch
- CET (State conducted test through OJEE) 70% of the intake in each branch
- NRI 15% (through both AIEEE & OJEE)

- ❖ Calendar for admission against management/vacant seats:

- Last date request for applications. **10th June**
- Last date for submission of application. **15th July**
- Dates for announcing final results. **30th July**
- Release of admission list (main list and waiting list should be announced on the same day) **30th July**
- Date for acceptance by the candidate (time given should in no case be less than 15 days) **16th August**
- Last date for closing of admission. **27th August**
- Starting of the Academic session. **1st September**
- The waiting list should be activated only on the expiry of date of main list.
- The policy of refund of the fee, in case of withdrawal, should be clearly notified. : **Within one month after withdrawal of Admission.**

XI. CRITERIA AND WEIGHTAGES FOR ADMISSION

- ❖ Describe each criteria with its respective weightages i.e. Admission Test, marks in qualifying examination etc.

As per the Rank of AIEEE/ OJEE, Pass Marks in 10+2 Science with Physics, Chemistry , Mathematics & English.

- ❖ Mention the minimum level of acceptance, if any. : **NIL**

- ❖ Mention the cut-off levels of percentage & percentile scores of the candidates in the admission test for the last three years. : [As per the decision of OJEE](#)
- ❖ Display marks scored in Test etc. and in aggregate for all candidates who were admitted. : [List available in OJEE Web Site.](#)
www.jeeorissa.com

Item No I - XI must be given in information brochure and must be hosted as fixed content in the website of the Institution.

The Website must be dynamically updated with regard to XII–XV.

XII. APPLICATION FORM

- ❖ Downloadable application form, with online submission possibilities.
[Downloadable application form is available in OJEE Web Site](#)
www.jeeorissa.com

XIII. LIST OF APPLICANTS

- ❖ List of candidates whose applications have been received along with percentile/percentage score for each of the qualifying examination in separate categories for open seats. List of candidates who have applied along with percentage and percentile score for Management quota seats. [Available in OJEE Web Site](#) www.jeeorissa.com

XIV. RESULTS OF ADMISSION UNDER MANAGEMENT SEATS/VACANT SEATS

- ❖ Composition of selection team for admission under Management Quota with the brief profiles of members (This information be made available in the public domain after the admission process is over)

Sl. No.	Name	Designation
1.	Dr. Shriram Roy	Principal, BDCET
2.	Mr. Tahalu Sahu	Administrator
3.	Er. G. S. Panda	Academic Coordinator
4.	Er. H. C. Panigrahi	Workshop Superintendent
5.	Dr. D. K. Sahu	Professor, Humanities
6.	Mr. S. K. Panigrahi	Asst. Professor Humanities

- ❖ Score of the individual candidates admitted arranged in order of merit.
- ❖ List of candidates who have been offered admission.
- ❖ Waiting list of the candidates in order of merit to be operative from the last date of joining of the first list candidates.
- ❖ List of the candidates who joined within the date, vacancy position in each category before operation of waiting list.

Admission under Management/ Vacant Seats of NRI in the Year 2008-09				
Sl. No.	Name of the student	Branch	Rank	OJEE/AIEEE
1	ROHIT KISHORE SINHA	Mechanical	8242	OJEE
2	MANTOSH KUMAR	E&TC	9519	OJEE
3	NARENDRA KUMAR	E&TC	11154	OJEE
4	AMIT KUMAR SINGH	Mechanical	11710	OJEE
5	DHEERAJ KUMAR	CSE	12923	OJEE
6	MANOJ KUMAR SINGH	Mechanical	13454	OJEE

7	MUKESH PRASAD GUPTA	E&TC	13492	OJEE
8	RAJEEV KUMAR	CSE	13662	OJEE
9	SUMAN KUMAR PATEL	Mechanical	22947	OJEE
10	PRAVAT MAHARANA	E&TC	23064	OJEE
11	BISWA BHUSAN PRADHAN	Electrical	24885	OJEE
12	AWADESH SAHU	Mechanical	27432	OJEE
13	ABHISHEK MOHANTA	Mechanical	27818	OJEE
14	SUDHIR RANJAN PATEL	Mechanical	27966	OJEE
15	SUDARSAN SAKUNIA	CSE	30357	OJEE
16	SHILPI SHARMA	CSE	30535	OJEE
17	NIBEDITA NAIK	CSE	31982	OJEE
18	ACHARYA PATRA	Electrical	32865	OJEE
19	GYANA RANJAN BEHERA	Mechanical	33449	OJEE
20	AKASH KUMAR JASWANI	E&TC	33545	OJEE
21	BISWAJEET SAMAL	E&TC	33571	OJEE
22	DILLIP KUMAR BEHERA	Electrical	33994	OJEE
23	SUBODHA KUMAR SAHU	E&TC	34133	OJEE
24	CHANDAN PANIGRAHI	CSE	36030	OJEE
25	SOURAJIT SAHU	Electrical	36977	OJEE
26	PRIYABRATA KSHATRI	Electrical	37432	OJEE
27	SAMEER RANJAN BHUKTA	Mechanical	38311	OJEE
28	DIVYADARSHI PATTANAIK	E&TC	38531	OJEE
29	SOMA MOHANTY	Electrical	38913	OJEE
30	MINU KUMARI	CSE	387205	AIEEE
31	JYOTI RANJAN ROUT	E&TC	387388	AIEEE
32	JITENDRA PRASAD GOPE	Electrical	409700	AIEEE
33	NAVEEN KUMAR	CSE	587649	AIEEE
34	ROSHAN KUMAR SARANGI	Electrical	634149	AIEEE
35	RAVI SHANKAR YADAV	Electrical	658214	AIEEE
36	SONI KUMARI	CSE	773587	AIEEE

Admission under Management/ Vacant Seats of NRI in the Year 2009-10					
Sl. No.	Name of the Candidate	AIEEE/OJEE	Rank No.	Category	Branch Alloted
1	Abhisek Mishra	OJEE	36897	GE	E&TC
2	Shuvendu Shekhar Naik	OJEE	39641	GE	E&TC
3	Juli Lata Meher	OJEE	33557	GE	E&TC
4	Jitendra Kumar	OJEE	9692	OS-GE	E&TC
5	Deepika Patel	OJEE	33395	GE	E&TC
6	Omit Kumar Behera	AIEEE	783529	GE	E&TC
1	Atul Chandra Patel	OJEE	43056	GE	Electrical
2	Sahbaj Alam	OJEE	31871	GE	Electrical
3	Sumeet Kumar Verma	OJEE	38821	GE	Electrical
4	Chandan Kumar	OJEE	13601	OS-GE	Electrical
5	Shailendra Kumar Karsel	AIEEE	939411	GE	Electrical
6	Sandesh Patel	OJEE	37645	GE	Electrical
1	Sabir Kumar Dash	OJEE	29093	GE	Mechanical
2	Soumya Prakesh Mishra	OJEE	39571	GE	Mechanical
3	Motilal Meher	OJEE	41778	GE	Mechanical
4	Byomakesh Satpathy	OJEE	32469	GE	Mechanical
5	Atikranta Samantaray	AIEEE	306649	GE	Mechanical
6	Sourav Kumar Agrawal	AIEEE	478808	GE	Mechanical
1	Anjali Sakunia	AIEEE	530181	GE	CSE

XV. INFORMATION ON INFRASTRUCTURE AND OTHER RESOURCES AVAILABLE

LIBRARY:

- Number of Library books/Titles/Journals available (programme-wise)
- List of online National/International Journals subscribed.

Sl. No.	Courses	No. of Title of the Book	No. of Volumes	Journals	
				National	International
01	Humanities & Science	289	1669	06	03
02	Computer Sc. Engg	271	2147	06	03
03	Electrical Engg	291	1157	06	03
04	Electronics & Tele Comm Engg	294	1707	10	03
05	Mechanical Engineering	300	2207	11	03
Total		1445	8887	39	15

- E-Library facilities **Under Process**

LABORATORY:

For each Laboratory

- List of Major Equipment/Facilities

Sl. No	Name of the laboratory	Total Area of lab In Sq. Mtr	Major Equipments
1.	Communicative Eng. Lab.	105	31 No. Computer terminals, 10 KVA Online UPS, 2 Nos. 24 Ports D-link Network Switch, ACEN Setup Machine Kit.
2.	Physics Lab	209	Newton's Ring Compact Set, Spectrometer, Microscope, PN-Junction Diode, Searle's Apparatus, Barton's Apparatus, Sonometer, BJT Apparatus.
3.	Chemistry Lab	209	Chemical Balance, Distil Water Plant, Pensky Apparatus, Fume Chamber, Heat Chamber, Water Bath, Bunsen Burners.
4.	Computer Lab (C & C++)	150	1 Nos. IBM Server, 60 No. Computer terminals, 30 KVA Online UPS, 3 Nos. 24 Ports D-link Network Switch, Projector.
5.	Computer Lab (DBMS)	150	1 Nos. IBM Server, 60 No. Computer terminals, 30 KVA Online UPS, 3 Nos. 24 Ports D-link Network Switch, Projector.
6.	Network Device Lab	100	Cathode Ray Oscilloscope, Spectrum, Open-Circuit & Short Circuit Parameter, R-L-C Series & Parallel Circuit.
7.	Analog Electronics Lab	100	Cathode Ray Oscilloscope, Function Generator, Oscillator Circuit, Common Emitter Amplifier, IC Tester.
8.	Digital Electronics Lab	100	CRO, Multiflex – Demultiflexure Trainer Kit, Multimeter, IC Tester, Parity Checker
9.	Electrical & Electronics Measurement Lab	100	Galvanometer Bridge Circuit, Potentiometer, Q-Meter, Kelvin's Double Bridge
10.	Material Testing Lab	200	Universal Testing Machine, Brinell & Rockwell Hardness Testing Machine, Fatigue Testing Machine, Compressive Strength and Tensile Strength Testing Machine.

11.	Hydraulic & Hydraulic Machine Lab	200	Turbines (Pelton Wheel, Caplon), Hydraulic Bench, Bernaulie's Experiment, Centrifugal pump.
12.	Basic Electrical Engg Lab	105	M-G Set (Compound Motor), Series Motor, Star-Delta Starter, Transformer.
13.	Basic Electronics Engg Lab	105	CMOS Logic inverter, MUX-DEMUX, Trainer Kit, p-n-p, n-p-n transistor circuit, RC Coupled Amplifier
14.	Electrical Machine Lab-1	280	Shunt Motor, D-O-L Starter, Synchronous Motor, DC Motor, AC Motor, MG Set, Alternator, 3 Phase Transformer, Generator.

➤ List of Experimental Setup (1st, 2nd & 3rd Semester BPUT Syllabus)

B-TECH, FIRST YEAR

BE7104 Chemistry Laboratory (0-0-3)

(Any ten experiments may be done)

1. Determination of amount of sodium hydroxide and sodium carbonate in a mixture.
2. Determination of total hardness of water by EDTA method.
3. Estimation of calcium in limestone.
4. Determination of percentage of available chlorine in a sample of bleaching powder.
5. Preparation of Phenolphthalein.
6. Preparation of Aspirin.
7. Preparation of buffer solution and determination of pH of a buffer solution.
8. Standardization of KMnO₄ using sodium oxalate.
9. Determination of Ferrous iron in Mohr's salt by potassium permanganate.
10. Determination of partition coefficients of iodine between benzene and water.
11. Determination of rate constant of acid catalysed hydrolysis reaction.
12. Determination of concentration of a coloured substance by spectrophotometer.
13. Determination of dissolved Oxygen in a sample of water.
14. Determination of Viscosity of a lubricating oil by Red wood viscometer.
15. Determination of Flash point of a given oil by Pensky_Marten's flash point approach.

BE7103 PHYSICS LABORATORY (0-0-3)

A Student is expected to perform ten experiments from the list given below.

1. Determination of Young's modulus by Searle's methods.
2. Determination of Rigidity modulus by static methods.
3. Determination of surface tension by capillary rise method.

4. Determination of acceleration due to gravity by Bar / Kater's pendulum.
5. Determination of thermal conductivity by Lee's method.
6. Determination of wave length of light of light by Newton's rin apparatus.
7. Determination of grating element of a diffraction grating.
8. Plotting of characteristic curves of a PN junction diode.
9. Plotting of characteristic curves of BJT.
10. Varification of laws of verification of strings using sonometer.
11. Determination of wavelength of laser source by diffraction rating methods.
12. Study of Hall effect. 6
13. Study of RC circuit.
14. Study of a power source- output imedence.
15. Study of a Photoemission.

BE7101 Engineering Drawing (0-0-3)

Sheet Lay-out & Sketching, Line Drawing, Lettering & Dimensioning; Concept of Orthographic Projection, First-angle Projection, Projections of Points, Projection of straight line, Projection of planes, Projection of Solids, Intersection of surfaces, Development of surfaces, Isometric Projection, Sectional Views of solids, Full section, Introduction to computer-Aided Drafting.

BE7102 Workshop Practice (0-0-3)

Fitting Practice: Use of hand tools in fitting, preparing a male and female joint of M.S. or making a paper weight of M.S.

Welding Practice : Gas welding & Electric Arc welding Practice.

A joint such as a Lap joint, a T-joint or a Butt joint is to be prepared or to make furniture.

Machining:

- (i) Stepped cylindrical Turning of a job and Thread-cutting in lathe.
- (ii) Shaping
- (iii) Milling

BE7105 - Basic Electronics Laboratory (0 – 0 – 3; Credits: 2; Contact Hours: 3)

(At least 8 experiments including experiments 1 to 7 and any one from experiments 8 to 10)

1. Familiarization of electronic components and devices (Testing of semiconductor diodes and transistors using digital multimeter)
2. Study and use of Oscilloscope, signal generator to view waveforms and measure amplitude and frequency of a given waveform.
3. V-I characteristics of semiconductor diode and determining its DC and AC resistance.
4. Studies on half-wave and full-wave rectifier circuits without and with capacitor filter; recording of the waveforms and measurement of average and rms values of the rectifier output.
5. V-I characteristic of an n-p-n or p-n-p transistor, DC biasing the transistor in common-emitter configuration and determination of its operating point (i.e., various voltages and currents).

6. Studies on Op-Amp applications (Inverting, non-inverting integrating and differentiating configurations); recording of the input-output waveforms.
7. Studies on Logic gates (Truth table verification of various gates).
8. Gain-frequency response studies of a BJT common-emitter RC coupled amplifier.
9. Studies and experiments using MUX-DEMUX ICs.
10. Study on CMOS logic inverter.

HM 7101 Communicative Practice Lab -I (0-0-3) (1ST Sem)

Lab sessions will be devoted to practice activities based on all three modules of theory.

a. phonemic transcription 5 hours

Students will be trained to find out the correct pronunciation of words with the help of a dictionary, to enable them to monitor and correct their own pronunciation.

i transcription of words and short sentences in normal English orthography (writing) into their IPA equivalents ;

ii transcription of words presented orally ;

iii conversion of words presented through IPA symbols into normal orthography

iv syllable division and stress marking (in words presented in IPA form)

b. Listening 10 hours

i listening with a focus on pronunciation (ear-training) : segmental sounds, stress, weak forms, intonation

Students should be exposed, if possible, to the following varieties of English during listening practice : Standard Indian, British and American.

c. Speaking 15 hours

i pronunciation practice (for accent neutralization), particularly of problem sounds, in isolated words as well as sentences

ii practising word stress, rhythm in sentences, weak forms, intonation

iii reading aloud of dialogues, poems, excerpts from plays, speeches etc. for practice in pronunciation

d. Grammar and usage 12 hours

The focus will be on the elimination of common errors. Some writing activities (e.g. writing of short paragraphs on assigned topics) can be used to identify these errors.

Project Work

Students will be required to produce and submit by the end of Semester 1 a 350-500 word project report on a topic of their choice. The project should involve data collection, analysis and reporting. Ten marks (out of the 100 marks allocated for the Lab test) will be set apart for the project.

HM 7102 Communicative Practice Lab -II (0-0-3) (2nd Sem)

a. Communication Practice 30 hours

i Speaking : oral communication in social and 10 hours work-related situations, e.g.:

Greeting an acquaintance/ friend, introducing oneself, introducing a friend to another friend, breaking off a conversation politely, leave-taking; making and responding to inquiries; expressing an opinion; expressing agreement/ disagreement, contradicting/ refuting an argument; expressing pleasure, sorrow, regret, anger, surprise, wonder, admiration, disappointment etc.

Narrating or reporting an event;

Describing people, objects, places, processes etc.

Ordering / directing someone to do something

Making requests; accepting / refusing a request

Expressing gratitude; responding to expressions of gratitude

Asking for or offering help; responding to a request for help

Asking for directions (e.g. how to reach a place, how to operate a device etc.) and giving directions

asking for and granting/ refusing permission prohibiting someone from doing something suggesting, advising, persuading, dissuading, making a proposal praising, complimenting, felicitating expressing sympathy (e.g. condolence etc.)

Complaining, criticizing, reprimanding

ii Reading 10 hours

Students will be given practice in reading and comprehending 6-8 simple passages of 100-300 words each, on topics of general as well as professional interest. The texts will be supported by suitable exercises designed to foster comprehension skills and vocabulary enrichment, together with study skills (note making) and reference skills (using a dictionary).

Practice will be provided in the important sub-skills of reading which are introduced in Module 2 of the theory component.

iii Writing 10 hours

Writing short paragraphs on given topics or topics of one's choice; social and business letters; reports; applications ; resumes ; summaries. The principles of 'Process Writing' should be used to teach writing skills.

i pre-writing : generating ideas, brain-storming, idea mapping, outlining

ii writing : generating a first draft ; reviewing, redrafting, editing

iii post-writing : making a presentation ; discussion and feedback, preparing the final draft

b. Soft skills practice 10 hours

Activities designed to highlight leadership and 'team' skills ; Group discussion

BE 7106 - BASIC ELECTRICAL ENGINEERING LABORATORY (3-1-0)

Select any 8 experiments from the list of 10 experiments :

1. Connection and measurement of power consumption of a fluorescent lamp.
2. Measurement of armature and field resistances of a DC compound machine.
3. Starting and speed control of a DC shunt motor by (a) field flux control method, and (b) armature voltage control method.
4. V-I characteristics of incandescent lamps and time-fusing current characteristics of a fuse.
5. Connection and testing of a single-phase energy meter.
6. Starting of three-phase induction motor by star-delta starter.
7. Determination of open circuit characteristics (OCC) of DC shunt generator.
8. Calculation of current, voltage and power in series R-L-C circuit excited by single-phase AC supply and calculation of power factor.
9. Calculation of no load losses of a single-phase transformer.
10. Study of single-phase induction motors/ fan motors.

BE7107 – 'C' PROGRAMMING LAB (0-0-3)

(Minimum 10 programs to be done covering 8 Experiments)

Experiment No. 1

a) Write a C program to find the sum of individual digits of a positive integer.

b) A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence. Write a C program to generate the first n terms of the sequence.

c) Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.

Experiment No. 2

a) Write a C program to calculate the following Sum:

$$\text{Sum} = 1 - x^2/2! + x^4/4! - x^6/6! + x^8/8! - x^{10}/10!$$

b) Write a C program to find the roots of a quadratic equation.

Experiment No. 3

a) Write C programs that use both recursive and non-recursive functions

i) To find the factorial of a given integer.

ii) To find the GCD (greatest common divisor) of two given integers.

iii) To solve Towers of Hanoi problem.

Experiment No. 4

a) Write a C program to find both the largest and smallest number in a list of integers.

b) Write a C program that uses functions to perform the following:

i) Addition of Two Matrices

ii) Multiplication of Two Matrices

Experiment No. 5

a) Write a C program that uses functions to perform the following operations:

i) To insert a sub-string in to given main string from a given position.

ii) To delete n Characters from a given position in a given string.

b) Write a C program to determine if the given string is a palindrome or not

Experiment No. 6

a) Write a C program to construct a pyramid of numbers.

b) Write a C program to count the lines, words and characters in a given text.

Experiment No.7

a) Write a C program that uses functions to perform the following operations:

i) Reading a complex number

ii) Writing a complex number

iii) Addition of two complex numbers

iv) Multiplication of two complex numbers

(Note: represent complex number using a structure.)

Experiment No. 8

a) Write a C program which copies one file to another.

b) Write a C program to reverse the first n characters in a file.

(Note: The file name and n are specified on the command line.)

BE 7108 DATA STRUCTURE LAB (0-0-3)
(Minimum 10 experiments to be done)

Experiment No.1

Write a C program to perform matrix multiplication using array.

Experiment No.2

(a) Write a C program to create a stack using an array and perform

(i) push operation (ii) pop operation

(b) Write a C program to create a queue and perform

i) Push ii) pop iii) Traversal

Experiment No. 3

Write a C program that uses Stack operations to perform the following:

i) Converting infix expression into postfix expression

ii) Evaluating the postfix expression

Experiment No. 4

Write a C program that uses functions to perform the following operations on Single linked list:

i) Creation ii) Insertion iii) Deletion iv) Traversal in both ways

Experiment No. 5

Write a C program that uses functions to perform the following operations on Double linked list:

i) Creation ii) Insertion iii) Deletion

Experiment No. 6

Write a C program that uses functions to perform the following operations on Binary Tree:

i) Creation ii) Insertion iii) Deletion

Experiment No. 7

Write C programs that use both recursive and non recursive functions to perform the Linear search operation for a Key value in a given list of integers:

i) Linear search

Experiment No. 8

Write C program that use both recursive and non recursive functions to perform the Binary search operation for a Key value in a given list of integers:

Experiment No.9

Write a C program that implement Bubble Sort method to sort a given list of integers in descending order.

Experiment No.10

Write a C program that implement Quick Sort method to sort a given list of integers in ascending order:

B-TECH, SECOND YEAR

Electronics and Telecommunication Engineering (E&TCE)

BEES7211 **Network and Devices Lab**

Select any 8 experiments from the list of 10 experiments

1. Verification of Network Theorems (Superposition, Thevenin, Norton, Maximum Power Transfer).
2. Study of DC and AC Transients.
3. Determination of circuit parameters: Open Circuit and Short Circuit parameters.
4. Determination of circuit parameters: Hybrid and Transmission parameters.
5. Frequency response of Low pass and High Pass Filters.
6. Frequency response of Band pass and Band Elimination Filters.
7. Determination of self inductance, mutual inductance and coupling coefficient of a single phase two winding transformer representing a coupled circuit.
8. Study of resonance in R-L-C series circuit.
9. Study of resonance in R-L-C parallel circuit.
10. Spectral analysis of a non-sinusoidal waveform.

PCEC7201 **Analog Electronics Circuit Lab**

List of Experiments

(At least 10 out of 13 experiments should be done)

1. BJT bias circuit – Design, assemble and test.
2. JEET/MOSFET bias circuits – Design, assemble and test.
3. Design, assemble and test of BJT common-emitter circuit – D.C and A.C performance: Voltage gain, input impedance and output impedance with bypassed and un-bypassed emitter resistor.
4. Design, assemble and test of BJT emitter-follower – D.C and A.C performance: A.C. voltage gain, input impedance and output impedance.
5. Design, assemble and Test of JFET/MOSFET common-source and common-drain amplifiers – D.C and A.C performance: Voltage gain, input impedance and output impedance.

6. Frequency response of a common-emitter amplifier: low frequency, high frequency and mid frequency response.
7. Differential amplifiers circuits: D.C bias and A.C operation without and with current source.
8. Study of Darlington connection and current mirror circuits.
9. OP-Amp Frequency Response and Compensation.
10. Application of Op-Amp as differentiator, integrator, square wave generator.
11. Square wave testing of an amplifier.
12. R.C phase shift oscillator/Wien-Bridge Oscillator using OP-Amp/Crystal Oscillator.
13. Class A and Class B Power Amplifier.

PCEE7204 **Electrical and Electronics Measurement Lab**

Select any 8 experiments from the list of 10 experiments

1. Measurement of Low Resistance by Kelvin's Double Bridge Method.
2. Measurement of Self Inductance and Capacitance using Bridges.
3. Study of Galvanometer and Determination of Sensitivity and Galvanometer Constants.
4. Calibration of Voltmeters and Ammeters using Potentiometers.
5. Testing of Energy meters (Single phase type).
6. Measurement of Iron Loss from B-H Curve by using CRO.
7. Measurement of R, L, and C using Q-meter.
8. Measurement of Power in a single phase circuit by using CTs and PTs.
9. Measurement of Power and Power Factor in a three phase AC circuit by two-wattmeter method.
10. Study of Spectrum Analyzers.

PCEC7202 **Digital Electronics Circuit Lab**

List of Experiments:

(Atleast 10 experiments should be done, Experiment No. 1 and 2 are compulsory and out of the balance 8 experiments atleast 3 experiments has to be implemented through both Verilog/VHDL and hardware implementation as per choice of the student totaling to 6 and the rest 2 can be either through Verilog/VHDL or hardware implementation.)

1. Digital Logic Gates: Investigate logic behavior of AND, OR, NAND, NOR, EX-OR, EX-NOR, Invert and Buffer gates, use of Universal NAND Gate.
2. Gate-level minimization: Two level and multi level implementation of Boolean functions.
3. Combinational Circuits: design, assemble and test: adders and subtractors, code converters, gray code to binary and 7 segment display.
4. Design, implement and test a given design example with (i) NAND Gates only (ii) NOR Gates only and (iii) using minimum number of Gates.
5. Design with multiplexers and de-multiplexers.
6. Flip-Flop: assemble, test and investigate operation of SR, D & J-K flip-flops.
7. Shift Registers: Design and investigate the operation of all types of shift registers with parallel load.
8. Counters: Design, assemble and test various ripple and synchronous counters - decimal counter, Binary counter with parallel load.
9. Memory Unit: Investigate the behaviour of RAM unit and its storage capacity – 16 X 4 RAM: testing, simulating and memory expansion.
10. Clock-pulse generator: design, implement and test.
11. Parallel adder and accumulator: design, implement and test.
12. Binary Multiplier: design and implement a circuit that multiplies 4-bit unsigned numbers to produce a 8-bit product.
13. Verilog/VHDL simulation and implementation of Experiments listed at Sl. No. 3 to 12.

BECS7212 **C++ & Object Oriented Programming Lab**

1. Programs on concept of classes and objects.(1 class)
2. Programs using inheritance.(1 class)
3. Programs using static polymorphism.(1 class)
4. Programs on dynamic polymorphism.(1 class)
5. Programs on operator overloading.(1 class)

6. Programs on dynamic memory management using new, delete operators.(1 class)
7. Programs on copy constructor and usage of assignment operator.(1 class)
8. Programs on exception handling .(1 class)
9. Programs on generic programming using template function & template class.(1 class)
10. Programs on file handling.(1 class)

HSSM7203 **Communication & Interpersonal skills for Corporate Readiness Lab.**

Lab 30 hours

This course will focus on communication in professional (work-related) situations of the kind that BPUT graduates may expect to encounter on entering the professional domain.

Some typical forms of work-related communication, oral or written, are listed below. Practice activities for all four skills can be designed around these or similar situations.

1. Gaining entry into an organization
 - i. Preparing job-applications and CVs
 - ii. Facing an interview
 - iii. Participating in group discussion (as part of the recruitment process)
- 2 In-house communication
 - a. Superior/ Senior subordinate / junior (individual ↔ individual / group)
 - i. Welcoming new entrants to the organization, introducing the workplace culture etc.
 - ii. Briefing subordinates / juniors : explaining duties and responsibilities etc.
 - ii. Motivating subordinates / juniors ('pep talk')
 - iii. Instructing/ directing subordinates/ juniors
 - iv. Expressing / recording appreciation, praising / rewarding a subordinate or junior
 - v Reprimanding / correcting / disciplining a subordinate/junior (for a lapse) ; asking for an explanation etc.
 - b. Subordinate / Junior ↔ Superior / Senior
 - i. Responding to the above
 - ii. Reporting problems / difficulties / deficiencies
 - iii. Offering suggestions

COMPUTER SCIENCE & ENGINEERING (CSE)

HSSM7203 **Communication & Interpersonal skills for Corporate Readiness Lab.**

Lab 30 hours

This course will focus on communication in professional (work-related) situations of the kind that BPUT graduates may expect to encounter on entering the professional domain.

Some typical forms of work-related communication, oral or written, are listed below. Practice activities for all four skills can be designed around these or similar situations.

1. Gaining entry into an organization
 - i. Preparing job-applications and CVs
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 - iii. Participating in group discussion (as part of the recruitment process)
- 2 In-house communication
 - a. Superior/ Senior ↔ subordinate / junior (individual ↔ individual / group)
 - i. Welcoming new entrants to the organization, introducing the workplace culture etc
 - ii. Briefing subordinates / juniors : explaining duties and responsibilities etc.
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 - iii. Instructing/ directing subordinates/ juniors
 - iv. Expressing / recording appreciation, praising / rewarding a subordinate or junior
 - v. Reprimanding / correcting / disciplining a subordinate/junior (for a lapse) ; asking for an explanation etc.
 - b. Subordinate / Junior ↔ Superior / Senior
 - i. Responding to the above
 - ii. Reporting problems / difficulties / deficiencies
 - iii. Offering suggestions

PCES7201 **Analog Electronics Lab**

List of Experiments

(At least 10 out of 13 experiments should be done)

1. BJT bias circuit – Design, assemble and test.
2. JEET/MOSFET bias circuits – Design, assemble and test.
3. Design, assemble and test of BJT common-emitter circuit – D.C and A.C performance: Voltage gain, input impedance and output impedance with bypassed and un-bypassed emitter resistor.
4. Design, assemble and test of BJT emitter-follower – D.C and A.C performance: A.C. voltage gain, input impedance and output impedance.
5. Design, assemble and Test of JFET/MOSFET common-source and common-drain amplifiers – D.C and A.C performance: Voltage gain, input impedance and output impedance.
6. Frequency response of a common-emitter amplifier: low frequency, high frequency and mid frequency response.
7. Differential amplifiers circuits: D.C bias and A.C operation without and with current source.
8. Study of Darlington connection and current mirror circuits.
9. OP-Amp Frequency Response and Compensation.
10. Application of Op-Amp as differentiator, integrator, square wave generator.
11. Square wave testing of an amplifier.
12. R.C phase shift oscillator/Wien-Bridge Oscillator using OP-Amp/Crystal Oscillator.
13. Class A and Class B Power Amplifier.

PCCS7209 **Object Oriented Programming Lab**

1. Programs on concept of classes and objects.(1 class)
2. Programs using inheritance.(1 class)
 - (i) Single inheritance
 - (ii) Multiple inheritance
 - (iii) Multi level inheritance
 - (iv) Use of virtual base classes
3. Programs using static polymorphism.(1 class)

- (i) Function overloading
- (ii) Ambiguities while dealing with function overloading

4. Programs on dynamic polymorphism.(1 class)

(i) Use of virtual functions

(ii) Use of abstract base classes

5. Programs on operator overloading.(1 class)

(i) Operator overloading using member operator functions.

(ii) Operator overloading using non member operator functions.

(iii) Advantages of using non member operator functions.

6. Programs on dynamic memory management using new, delete operators.(1 class)

7. Programs on copy constructor and usage of assignment operator.(1 class)

8. Programs on exception handling .(1 class)

9. Programs on generic programming using template function and template class.(1 class) Programs on file handling.(1 class)

PCEC7202 **Digital Electronics Circuit Lab**

List of Experiments:

(Atleast 10 experiments should be done, Experiment No. 1 and 2 are compulsory and out of the balance 8 experiments atleast 3 experiments has to be implemented through both Verilog/VHDL and hardware implementation as per choice of the student totaling to 6 and the rest 2 can be either through Verilog/VHDL or hardware implementation.)

1. Digital Logic Gates: Investigate logic behavior of AND, OR, NAND, NOR, EX-OR, EX-NOR, Invert and Buffer gates, use of Universal NAND Gate.
2. Gate-level minimization: Two level and multi level implementation of Boolean functions.
3. Combinational Circuits: design, assemble and test: adders and subtractors, code converters, gray code to binary and 7 segment display.
4. Design, implement and test a given design example with (i) NAND Gates only (ii) NOR Gates only and (iii) using minimum number of Gates.
5. Design with multiplexers and de-multiplexers.
6. Flip-Flop: assemble, test and investigate operation of SR, D & J-K flip-flops.
7. Shift Registers: Design and investigate the operation of all types of shift registers with parallel load.
8. Counters: Design, assemble and test various ripple and synchronous counters - decimal counter, Binary counter with parallel load.
9. Memory Unit: Investigate the behaviour of RAM unit and its storage capacity – 16 X 4 RAM: testing, simulating and memory expansion.
10. Clock-pulse generator: design, implement and test.
11. Parallel adder and accumulator: design, implement and test.
12. Binary Multiplier: design and implement a circuit that multiplies 4-bit unsigned numbers to produce a 8-bit product.
13. Verilog/VHDL simulation and implementation of Experiments listed at Sl. No. 3 to 12.

PCCS7203 **Design and Analysis of Algorithms Lab**

1. Using a stack of characters, convert an infix string to postfix string.(1 class)
2. Implement insertion, deletion, searching of a BST. (1 class)
3. (a) Implement binary search and linear search in a program
- (b) Implement a heap sort using a max heap.
4. (a) Implement DFS/ BFS for a connected graph.
- (b) Implement Dijkstra's shortest path algorithm using BFS.
5. (a) Write a program to implement Huffman's algorithm.
- (b) Implement MST using Kruskal/Prim algorithm.
6. (a) Write a program on Quick sort algorithm.

- (b) Write a program on merge sort algorithm.
Take different input instances for both the algorithm and show the running time.
- 7. Implement Strassen's matrix multiplication algorithm.
- 8. Write down a program to find out a solution for 0 / 1 Knapsack problem.
- 9. Using dynamic programming implement LCS.
- 10. (a) Find out the solution to the N-Queen problem.
(b) Implement back tracking using game trees.

PCCS7204 Database Engg. Lab

- 1. Use of SQL syntax: insertion, deletion, join, updation using SQL. (1 class)
- 2. Programs on join statements and SQL queries including where clause. (1 class)
- 3. Programs on procedures and functions. (1 class)
- 4. Programs on database triggers. (1 class)
- 5. Programs on packages. (1 class)
- 6. Programs on data recovery using check point technique. (1 class)
- 7. Concurrency control problem using lock operations. (1 class)
- 8. Programs on ODBC using either VB or VC++. (1 class)
- 9. Programs on JDBC. (1 class)
- 10. Programs on embedded SQL using C / C++ as host language. (1 class)

Electrical Engineering (EE)

BEES7211 Network and Devices Lab

Select any 8 experiments from the list of 10 experiments

- 1. Verification of Network Theorems (Superposition, Thevenin, Norton, Maximum Power Transfer).
- 2. Study of DC and AC Transients.
- 3. Determination of circuit parameters: Open Circuit and Short Circuit parameters.
- 4. Determination of circuit parameters: Hybrid and Transmission parameters.
- 5. Frequency response of Low pass and High Pass Filters.
- 6. Frequency response of Band pass and Band Elimination Filters.
- 7. Determination of self inductance, mutual inductance and coupling coefficient of a single phase two winding transformer representing a coupled circuit.
- 8. Study of resonance in R-L-C series circuit.
- 9. Study of resonance in R-L-C parallel circuit.
- 10. Spectral analysis of a non-sinusoidal waveform.

BECS7212 C++ & Object Oriented Programming Lab

- 1. Programs on concept of classes and objects.(1 class)
- 2. Programs using inheritance.(1 class)
- 3. Programs using static polymorphism.(1 class)
- 4. Programs on dynamic polymorphism.(1 class)
- 5. Programs on operator overloading.(1 class)
- 6. Programs on dynamic memory management using new, delete operators.(1 class)
- 7. Programs on copy constructor and usage of assignment operator.(1 class)
- 8. Programs on exception handling .(1 class)
- 9. Programs on generic programming using template function & template class.(1 class)
- 10. Programs on file handling.(1 class)

PCEC7201 **Analog Electronics Circuit Lab**

List of Experiments

(At least 10 out of 13 experiments should be done)

1. BJT bias circuit – Design, assemble and test.
2. JEET/MOSFET bias circuits – Design, assemble and test.
3. Design, assemble and test of BJT common-emitter circuit – D.C and A.C performance: Voltage gain, input impedance and output impedance with bypassed and un-bypassed emitter resistor.
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10. Application of Op-Amp as differentiator, integrator, square wave generator.
11. Square wave testing of an amplifier.
12. R.C phase shift oscillator/Wien-Bridge Oscillator using OP-Amp/Crystal Oscillator.
13. Class A and Class B Power Amplifier.

PCEE7203 **Electrical Machines Lab-I**

Select any 8 experiments from the list of 10 experiments

1. Determination of critical resistance and critical speed from no load test of a DC shunt generator.
2. Plotting of external and internal characteristics of a DC shunt generator.
3. Speed control of DC shunt motor by armature voltage control and flux control method.
4. Determination of efficiency of DC machine by Swinburne's Test and Brake Test.
5. Determination of efficiency of DC machine by Hopkinson's Test.
6. Determination of Efficiency and Voltage Regulation by Open Circuit and Short Circuit test on single phase transformer.
7. Polarity test and Parallel operation of two single phase transformers.
8. Back-to Back test on two single phase transformers.
9. Determination of parameters of three phase induction motor from No load Test and Blocked Rotor Test.
10. Determination of Efficiency, Plotting of Torque-Slip Characteristics of Three Phase Induction motor by Brake Test.

PCEE7204 **Electrical and Electronics Measurement Lab**

Select any 8 experiments from the list of 10 experiments

1. Measurement of Low Resistance by Kelvin's Double Bridge Method.
2. Measurement of Self Inductance and Capacitance using Bridges.
3. Study of Galvanometer and Determination of Sensitivity and Galvanometer Constants.
4. Calibration of Voltmeters and Ammeters using Potentiometers.
5. Testing of Energy meters (Single phase type).
6. Measurement of Iron Loss from B-H Curve by using CRO.
7. Measurement of R, L, and C using Q-meter.
8. Measurement of Power in a single phase circuit by using CTs and PTs.
9. Measurement of Power and Power Factor in a three phase AC circuit by two-wattmeter method.
10. Study of Spectrum Analyzers.

PCEC7202 Digital Electronics Circuit Lab

List of Experiments:

(Atleast 10 experiments should be done, Experiment No. 1 and 2 are compulsory and out of the balance 8 experiments atleast 3 experiments has to be implemented through both Verilog/VHDL and hardware implementation as per choice of the student totaling to 6 and the rest 2 can be either through Verilog/VHDL or hardware implementation.)

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10. Clock-pulse generator: design, implement and test.
11. Parallel adder and accumulator: design, implement and test.
12. Binary Multiplier: design and implement a circuit that multiplies 4-bit unsigned numbers to produce a 8-bit product.
13. Verilog/VHDL simulation and implementation of Experiments listed at Sl. No. 3 to 12.

HSSM7203 Communication & Interpersonal skills for Corporate Readiness Lab.

Lab 30 hours

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 - a. Superior/ Senior ☺↻ subordinate / junior (individual ☺↻ individual / group)
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 - ii. Briefing subordinates / juniors : explaining duties and responsibilities etc.
 - ii. Motivating subordinates / juniors ('pep talk')
 - iii. Instructing/ directing subordinates/ juniors
 - iv. Expressing / recording appreciation, praising / rewarding a subordinate or junior
 - v Reprimanding / correcting / disciplining a subordinate/junior (for a lapse) ; asking for an explanation etc.
 - b. Subordinate / Junior ☺↻ Superior / Senior
 - i. Responding to the above

- ii. Reporting problems / difficulties / deficiencies
- iii. Offering suggestions

MECHANICAL ENGINEERING

PCME7201 Machine Drawing

Orthographic and Sectional drawing of Machine components: (Any seven)

Screw threads, Screwed fastenings, Turn Buckle, Keys, Cotter joints and Knuckle joints; Pulley; Flanged coupling, Pedestal Bearing or Plummer Block.

Fundamentals of AutoCAD (Two classes)

1. Dimension & annotations
2. Use of Layers
3. Working with constraint in dimension
4. Creating assembly
5. Axi-symmetrical parts
6. Creating surface features
7. Working with bill of material

Drawing of the following using AUTOCAD: (Any two)

1. Projection of solids
2. Nut & bolt and Fasteners
3. Cotter joint
4. Expansion joint
5. Shaft coupling

BECS7208 Database Managements System Lab

1. Use of SQL syntax: insertion, deletion, join, updation using SQL. (1 class)
2. Programs on join statements and SQL queries including where clause. (1 class)
3. Programs on procedures and functions. (1 class)
4. Programs on database triggers. (1 class)
5. Programs on packages. (1 class)
6. Programs on data recovery using check point technique. (1 class)
7. Concurrency control problem using lock operations. (1 class)
8. Programs on ODBC using either VB or VC++. (1 class)
9. Programs on JDBC. (1 class)
10. Programs on embedded SQL using C / C++ as host language. (1 class)

PCME7202 Mechanical Engineering Lab

Group A

1. Determination of equilibrium of coplanar forces.
2. Determination of Moment of Inertia of Flywheel
3. Determination of tensile strength of materials by Universal Testing Machine.

Group B

4. Determination of Metacentric Height and application to stability of floating bodies.
5. Verification of Bernoulli's Theorem and its application to Venturimeter.
6. Determination of C_v and C_d of Orifices.

Group C

7. Calibration of Bourdon Tube Pressure gauge and measurement of pressure using manometers.
8. Study of Cut-Sections of 2 stroke and 4 stroke Diesel Engine.
9. Study of Cut-Sections of 2 stroke and 4 stroke Petrol Engine.

PCME7203 **Machine Shop and Fabrication Practice**

1. A job on lathe with taper turning, thread cutting, knurling and groove cutting
2. Gear cutting (with index head) on milling m/c
3. Working with shaper, planer and slotting m/c
4. Working with surface/ cylindrical grinding
5. TIG/ MIG welding, gas cutting

PCME7204 **Material Testing and Hydraulic Machines Lab**

Material Testing :

1. Impact strength
2. Hardness strength
3. Rigidity modulus
4. Compression / Bending strength
5. Fatigue strength

Hydraulic Machines :

1. Experiments on impact of Jets
2. Experiments on performance of reciprocating pump
3. Experiments on performance of centrifugal pump
4. Experiments on performance of Pelton Turbine
5. Experiments on performance of Francis Turbine
6. Experiments on performance of Kaplan Turbine

HSSM7203 **Communication & Interpersonal skills for Corporate Readiness Lab.**

Lab 30 hours

This course will focus on communication in professional (work-related) situations of the kind that BPUT graduates may expect to encounter on entering the professional domain.

Some typical forms of work-related communication, oral or written, are listed below. Practice activities for all four skills can be designed around these or similar situations.

1. Gaining entry into an organization

i. Preparing job-applications and CVs

ii. Facing an interview

iii. Participating in group discussion (as part of the recruitment process)

2 In-house communication

a. Superior/ Senior ☺↻ subordinate / junior (individual ☺↻ individual / group)

i. Welcoming new entrants to the organization, introducing the workplace culture etc.

ii. Briefing subordinates / juniors : explaining duties and responsibilities etc.

ii. Motivating subordinates / juniors ('pep talk')

iii. Instructing/ directing subordinates/ juniors

iv. Expressing / recording appreciation, praising / rewarding a subordinate or junior

v Reprimanding / correcting / disciplining a subordinate/junior (for a lapse) ; asking for an explanation etc.

b. Subordinate / Junior ☺↻ Superior / Senior

i. Responding to the above

ii. Reporting problems / difficulties / deficiencies

iii. Offering suggestions

COMPUTING FACILITIES:

- Number and Configuration of Systems : 120
- Total number of systems connected by LAN : 90
- Total number of systems connected to WAN : 15
- Internet bandwidth : 2 mbps
- Major software packages available : Windows'98/Me/XP, Visual Studio, Ms-Office, Auto CAD, C. C++, ORACLE, Photoshop, fox pro, SQL Server 2005
- Special purpose facilities available : ACEN Machine Setup Kit, ACEN Software, High Tech Headset.

WORKSHOP:

- List of facilities available.

Sl. No.	Name of the Workshop	Total Area of Workshop In Sq. Mtr	Major Equipments/ Facilities
1.	Fitting Shop	195	Bench Vice, Sine Bar, Centre Lathe, Drilling & Grinding Machine.
2.	Carpentry Shop	195	Carpentry Vice, Carpentry Lathe, Wood Cutter.
3.	Welding Shop	195	Arch Welding, Gas Welding, MIG & TIG, Sheet Cutter and Sheet Binder.
4.	Black smithy & Foundry Shop	195	Hearth, Blower, Anvil, Coupla Furnace, Tilting Furnace.
5.	Machine Shop (Mechanical)	390	Centre Lathe, Milling Machine, Shaping Machine, Vertical & Radial Drilling Machine, Power hacksaw, Profile Projector & Tool Maker Microscope.

Games and Sports Facilities : Indoor & outdoor games
 Extra Curriculum Activities : Cultural Programme & Annual Sports
 Soft Skill Development Facilities : Central Computer Lab facilities for all students
 Number of Classrooms and size of each : 05, 70 Sq.mtr each
 Number of Tutorial rooms and size of each : 03, 40 Sq.mtr each
 Number of laboratories and size of each : 09, 2000 Sq.m (Total)
 Number of drawing halls and size of each : 01, 180 Sq.mtr
 Number of Computer Centres with capacity of each : 01, 160 Sq.m
 Central Examination Facility, Number of rooms and capacity of each : 14 Nos. of Rooms with capacity of 20

- Curricula and syllabi for each of the programmes as approved by the University.
[Link: http://www.bput.ac.in/syllabus.html](http://www.bput.ac.in/syllabus.html)
- Academic Calendar of the University
[Link : http://www.bput.ac.in/academic_calender_08_10.pdf](http://www.bput.ac.in/academic_calender_08_10.pdf)
- Academic Time Table
[Link: http://www.blackdiamond.org.in/Student.htm](http://www.blackdiamond.org.in/Student.htm)
- Teaching Load of each Faculty
[As per BPUT & AICTE Norms.](#)
- Internal Continuous Evaluation System and place :
[VIVA in each Practical at the end off the period.](#)
- Students' assessment of Faculty, System in place. :
[Assessment through Class Test \(Three Class Test each of 10 Marks for each Subject as per BPUT Academic Calendar.](#)

For each Post Graduate programme give the following : [Not Applicable](#)

NOTE: Suppression and/or misrepresentation of information would attract appropriate penal action.