

List and description of courses and Activities which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.

Sr. No	Cost cutting Issues	Course	Program	Additional Activities
1	Professional Ethics	Professional Communication and Ethics-I, Business Communication and Ethics, Project Management, FE Induction Program	All Branches	Internship and Career Expo by TEDxCRCE
		Industrial Relations and Human Resource Management	Production Engineering	Salon Event by TEDxCRCE
		Cyber Security and Laws, Embedded Systems and Real Time Operating System	Electronics Engineering	Awareness Session on IPR & IP Management for Innovation and Start-ups by Dr. Bhushan Patil in association with CSI and IIC-FrCRCE
		Software Engineering, Cryptography and System Security, Advance System Security & Digital Forensics	Computer Engineering	TestPrep and Profile Building Seminar by CollegePond organised by Training and Placement Cell
		Software Engineering with Project Management, Cryptography and Network Security, Infrastructure Security, Management Information System	Information Technology	GRE Coaching Demo by CollegePond organised by Training and Placement Cell
				Student Development Program on Grooming for Placements by Industry Experts organised by department of computer engineering
2	Gender			International Women's day celebration by WIE
				Best Allrounder Award for Male and Female Students
				Women Development Cell
				Gender equality session arranged by Akshara Rao NGO and NSS

				Dr. SSS Award for Excellence in Mathematics
3	Human Values	FE Induction Program	All Branches	Donation Drive for flood relief by NSS and TEDxCRCE
				Blood Donation drive by NSS
				Bandra fair volunteering cum crowd management by NSS
				Walk for Freedom rally to stand against the inhumane practice of human trafficking by NSS
				“Happy Hours” In Collaboration With Cerebral Palsy Association Of India(Cpai) By Nss
				ASBB FUN RUN (Marathon) Volunteering by NSS
				No Smoking Pledge drive by NSS
				Mission Blue Seminar by United Ways organised by NSS
				Self Defense Workshop by NSS
				Poster making for Corona Virus Awareness by NSS
				8-day camp to the Tandulwadi area of Palghar District to educate kids about technologies by NSS
				Annual charity run: The Heart and Sole Run 3 by Rotaract to spread awareness about the right to education for children in Collaboration with NGO Bigger than Life
				NGO Project with BTL NGO for teaching kids about environmental issues by Rotaract
				Awareness seminar to throw light on child abuse by NSS
				Volunteering at the Read Carnival by United Way and NSS

				Disaster management workshop organized by Mumbai university and NSS
				Food Donation Drives by TEDxCRCE in association with Mumbai Roti Bank
				Session at 'The Welfare for Stray Dogs' for passionate animal lovers by TEDxCRCE
				Character Building Session for Agnel Ashram Children by TEDxCRCE
4	Environment and Sustainability	Sustainable Manufacturing, Product Design and Industrial Marketing	Production Engineering	Climate Change Seminar by NSS
		Electronics Product Design, Embedded Systems and Real Time Operating System	Electronics Engineering	Tree Plantation Drive by NSS
				Awareness Program in association with Bisleri of Plastic Bottles use by NSS
				Post Ganpati Visarjan beach cleanups by NSS
				Beach Cleanup programs at Chimbai by NSS
				Seminar on waste management in collaboration with RUR foundation by NSS
				Making of Compose Pit in Emerald Court garden by NSS
				1 Week Terrace Garden Project in college campus by NSS
				Plastic Ban Rally by NSS
			Annual charity run: The Heart and Sole Run 3 by Rotaract to raise awareness about the importance of planting in collaboration with NGO Swapnavan	

**Supporting Documents for Curriculum and Activities
related to
Professional Ethics, Gender Equity, Human Values and
Environment and Sustainability
(A.Y. 2019-20)**

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Professional Ethics

- Courses Offered in Curriculum
- Internship and Career Expo by TEDxCRCE
- Salon Event by TEDxCRCE
- Awareness Session on IPR & IP Management for Innovation and Start-ups by Dr. Bhushan Patil in association with CSI and IIC-FrCRCE
- Aptitude Trainings by Placement Cell
- Student Development Program on Grooming for Placements by Industry Experts organised by department of computer engineering

Semester II

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned				
		Theory	Pract.	Tut.	Theory	Pract.	Tut.	Total	
FEC201	Engineering Mathematics-II	3	--	1*	3	--	1	4	
FEC202	Engineering Physics-II	2	--	--	2	--	--	2	
FEC203	Engineering Chemistry-II	2	--	--	2	--	--	2	
FEC204	Engineering Graphics	2	--	--	2	--	--	2	
FEC205	C programming	2	--	--	2	--	--	2	
FEC206	Professional Communication and Ethics- I	2	--	--	2	--	--	2	
FEL201	Engineering Physics-II	--	1	--	--	0.5	--	0.5	
FEL202	Engineering Chemistry-II	--	1	--	--	0.5	--	0.5	
FEL203	Engineering Graphics	--	4	--	--	2	--	2	
FEL204	C programming	--	2	--	--	1	--	1	
FEL205	Professional Communication and Ethics- I	--	2	--	--	1	--	1	
FEL206	Basic Workshop practice-II	--	2	--	--	1	--	1	
Total		13	12	01	13	06	01	20	
Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract. /oral	Total
		Internal Assessment			End Sem. Exam.	Exam. Duration (in Hrs)			
		Test1	Test 2	Avg.					
FEC201	Engineering Mathematics-II	20	20	20	80	3	25	--	125
FEC202	Engineering Physics-II	15	15	15	60	2	--	--	75
FEC203	Engineering Chemistry-II	15	15	15	60	2	--	--	75
FEC204	Engineering Graphics	15	15	15	60	3	--	--	75
FEC205	C programming	15	15	15	60	2	--	--	75
FEC206	Professional Communication and Ethics- I	10	10	10	40	2	--	--	50
FEL201	Engineering Physics-II	--	--	--	--	--	25	--	25
FEL202	Engineering Chemistry-II	--	--	--	--	--	25	--	25
FEL203	Engineering Graphics	--	--	--	--	--	25	50	75
FEL204	C programming	--	--	--	--	--	25	25	50
FEL205	Professional Communication and Ethics- I	--	--	--	--	--	25	--	25
FEL206	Basic Workshop practice-II	--	--	--	--	--	50	--	50
Total		--	--	90	360	--	200	75	725

* May be conducted batch-wise

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned				
		Theory	Pract.	Tut.	Theory	Tut.	Pract.	Total	
FEC206	Professional Communication and Ethics- I	2	--	--	2	--	--	2	
Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract. /oral	Total
		Internal Assessment			End Sem. Exam.	Exam. Duration (in Hrs)			
		Test1	Test 2	Avg.					
FEC206	Professional Communication and Ethics- I	10	10	10	40	2	--	--	50

Objectives

1. To demonstrate the fundamental concepts of interpersonal and professional communication.
2. To encourage active listening with focus on content, purpose, ideas and tone.
3. To facilitate fluent speaking skills in social, academic and professional situations.
4. To train in reading strategies for comprehending academic and business correspondence.
5. To promote effective writing skills in business, technology and academic arenas.
6. To inculcate confident personality traits along with grooming and social etiquettes.

Outcomes: Learners will be able to understand how to...

1. Eliminate barriers and use verbal/non-verbal cues at social and workplace situations.
2. Employ listening strategies to comprehend wide-ranging vocabulary, grammatical structures, tone and pronunciation.
3. Prepare effectively for speaking at social, academic and business situations.
4. Use reading strategies for faster comprehension, summarization and evaluation of texts.
5. Acquire effective writing skills for drafting academic, business and technical documents.
6. Successfully interact in all kinds of settings, displaying refined grooming and social skills.

Module	Detailed Contents	Hrs.
1	FUNDAMENTALS OF COMMUNICATION	12
	1.1. Introduction to Theory of Communication	
	<ul style="list-style-type: none"> ● Definition ● Objectives ● Postulates/Hallmarks ● The Process of Communication ● Organizational Communication <ul style="list-style-type: none"> ○ Formal (Upward, Downward and Horizontal) ○ Informal (Grapevine) 	
	1.2. Methods of Communication	
	<ul style="list-style-type: none"> ● Verbal (Written & Spoken) ● Non-verbal <ul style="list-style-type: none"> ○ Non-verbal cues perceived through the five senses: (Visual, Auditory, Tactile, Olfactory and Gustatory cues) ○ Non-verbal cues transmitted through the use of: (The Body, Voice, Space, Time and Silence) 	
	1.3. Barriers to Communication	

	<ul style="list-style-type: none"> ● Mechanical/External ● Physical/Internal ● Semantic & Linguistic ● Psychological ● Socio-Cultural <p>1.4. Communication at the Workplace</p> <ul style="list-style-type: none"> ● Corporate Communication - Case Studies ● Listening Tasks with Recordings and Activity Sheets ● Short Speeches as Monologues <ul style="list-style-type: none"> ○ Informative Speeches that Center on People, Events, Processes, Places, or Things ○ Persuasive Speeches to Persuade, Motivate or Take Action ○ Special Occasion Speeches for Ceremonial, Commemorative, or Epideictic purposes ● Pair-work Conversational Activities (Dialogues) ● Short Group Presentations on Business Plans 	
2	<p>VERBAL APTITUDE FOR EMPLOYMENT</p> <p>2.1. Vocabulary Building</p> <ul style="list-style-type: none"> ● Root words (Etymology) ● Meaning of Words in Context ● Synonyms & Antonyms ● Collocations ● Word Form Charts ● Prefixes & Suffixes ● Standard Abbreviations <p>2.2. Grammar</p> <ul style="list-style-type: none"> ● Identifying Common Errors <ul style="list-style-type: none"> ○ Subject - Verb Agreement ○ Misplaced Modifiers ○ Articles ○ Prepositions ● Tautologies ● Pleonasms (Redundancies) ● Idioms ● Cliches 	02
3	<p>DEVELOPING READING AND WRITING SKILLS</p> <p>3.1. Reading Comprehension</p> <ul style="list-style-type: none"> ● Long Passages ● Short Passages ● MCQs on Inferential Questions with 4 Options <p>3.2. Summarization of reading passages, reports, chapters, books</p> <ul style="list-style-type: none"> ● Graphic Organizers for Summaries <ul style="list-style-type: none"> ○ Radial Diagrams like Mind Maps ○ Flow Charts ○ Tree Diagrams ○ Cyclic Diagrams ○ Linear Diagrams like Timelines ○ Pyramids ○ Venn Diagrams ● Point-form Summaries ● One-sentence Summaries of Central Idea <p>3.3. Paraphrasing</p> <ul style="list-style-type: none"> ● Understanding Copyrights ● Running a Plagiarism Check on Paraphrased Passages ● Generating Plagiarism Reports 	02

	<ul style="list-style-type: none"> ● Basic APA and MLA Referencing Style and Format 	
4	<p>BUSINESS CORRESPONDENCE</p> <p>4.1. Seven Cs of Business Correspondence</p> <ul style="list-style-type: none"> ● Completeness ● Conciseness ● Consideration ● Concreteness ● Clarity ● Courtesy ● Correctness <p>4.2. Parts of a Formal Letter and Formats</p> <ul style="list-style-type: none"> ● Parts/Elements of a Formal Letter <ul style="list-style-type: none"> ○ Letterheads and/or Sender's Address ○ Dateline ○ Inside Address ○ Reference Line (Optional) ○ Attention Line (Optional) ○ Salutation ○ Subject Line ○ Body ○ Complimentary Close ○ Signature Block ○ Enclosures/Attachments ● Complete/Full Block Format <p>4.3. Emails</p> <ul style="list-style-type: none"> ● Format of Emails ● Features of Effective Emails ● Language and style of Emails <p>4.4. Types of Letters in Both Formal Letter Format and Emails</p> <ul style="list-style-type: none"> ● Claim & Adjustment Letters ● Request/Permission Letters ● Sales Letters 	06
5	<p>BASIC TECHNICAL WRITING</p> <p>5.1. Introduction</p> <ul style="list-style-type: none"> ● What is Technical Writing? ● Importance and Principles of Technical Writing ● Difference between Technical Writing & Literary Writing ● Framing Definitions ● Difference between Technical Description & Instructions <p>5.2. Description of a Technical Object</p> <ul style="list-style-type: none"> ● Definition ● Diagram ● Discussion of Parts/Characteristics <p>Working</p> <p>5.3. Writing User Instructions</p> <ul style="list-style-type: none"> ● User Instructions ● Special Notices (Note, Warning, Caution and Danger) ● Styles of Presentation <ul style="list-style-type: none"> ○ Impersonal ○ Indirect ○ Direct ● Imperative <p>5.4. Description of a Technical / Scientific Process</p>	02

	<ul style="list-style-type: none"> ● Definition ● Diagram ● Tools/ Apparatus/Software/ Hardware Used ● Working ● Result 	
6	<p>PERSONALITY DEVELOPMENT AND SOCIAL ETIQUETTES</p> <p>6.1. Personality Development</p> <ul style="list-style-type: none"> ● Introducing Self and/or a Classmate ● Formal Dress Code <p>6.2. Social Etiquettes</p> <ul style="list-style-type: none"> ● Formal Dining Etiquettes ● Cubicle Etiquettes ● Responsibility in Using Social Media ● Showing Empathy and Respect ● Learning Accountability and Accepting Criticism ● Demonstrating Flexibility and Cooperation ● Selecting Effective Communication Channels 	02

Assessment:

Internal Assessment Test:

Assessment consists of two class tests of 10 marks each.

TEST I -Public speech on general topics (Maximum 5 mins. per student)

TEST II - Written test covering modules 1 - 6

The second test should be based on theory and application exercises as mentioned in the syllabus. (Note: Summarization should be a compulsory question in Test II and not in the End Semester Theory Examination.)

End Semester Theory Examination:

- 1.Question paper will comprise of total 06 questions, each carrying 15marks.
- 2.Total 04 questions need to be solved.
- 3.Question No: 01 will be compulsory and based on entire syllabus wherein sub-questions of 2 to 5 marks will be asked.
- 4.Remaining questions will be mixed in nature.(e.g. Suppose Q.2 has part (a) from module3 then part (b) will be from any module other than module 3)
- 5.In question paper weightage of each module will be proportional to number of respective lecture hours as mentioned in the syllabus
6. The first module (Fundamentals of Communication) will carry 40 % weightage.

Text Books.

1. Sanjay Kumar & Pushp Lata (2018). Communication Skills with CD. New Delhi: Oxford University Press.
2. Hemphill, P.D., McCormick, D. W., & Hemphill, R. D. (2001). Business Communication with writing improvement exercises. Upper Saddle River, NJ: Prentice Hall.
3. Locker, Kitty O. Kaczmarek, Stephen Kyo. (2019). Business Communication: Building Critical Skills. Place of publication not identified: Mcgraw-hill.
4. Murphy, H. (1999). Effective Business Communication. Place of publication not identified: Mcgraw-Hill.
5. Raman, M., & Sharma, S. (2016). Technical Communication: Principles and practice. New Delhi: Oxford University Press.
6. Kaul, A. (2015). Effective Business Communication. Place of publication not identified: Prentice-Hall of India.

Total: 25 Marks

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned				
		Theory	Pract.	Tut.	Theory	Tut.	Pract.	Total	
FEL205	Professional Communication and Ethics- I	--	2	--	--	--	1	1	
Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract. /oral	Total
		Internal Assessment			End Sem. Exam.	Exam. Duration (in Hrs)			
		Test1	Test 2	Avg.					
FEL205	Professional Communication and Ethics- I	--	--	--	--	--	25	--	25

Objectives

To provide practice in ...

1. Active listening with focus on content, purpose, main idea, tone and pronunciation.
2. Fluent speaking and presentation skills in social, academic and professional situations.
3. Faster reading skills for effective comprehension in a variety of texts.
4. Drafting effective written discourse in academics, business and technology.
5. Grooming and projecting impressive persona in all interactions.

Outcomes: Learner will be able to...

1. Listen and comprehend all types of spoken discourse successfully.
2. Speak fluently and make effective professional presentations.
3. Read large quantities of text in a short time to comprehend, summarise and evaluate content.
4. Draft precise business letters, academic essays and technical guidelines.
5. Dress finely and conduct themselves with panache in social, academic and professional situations.

List of Assignments & Activities	Details of Assignments	Details of Activities	Hrs.
1.	Written record of listening activities	Listening practice tasks of 3 types (through audio recordings of (1) Monologues (2) Dialogues (3) Formal/Expert Talk or Lecture)	02
2.	Transcription of the public speech along with a plagiarism report	Practice public speech	02
3.	Transcription of the public speech along with a plagiarism report	Public speech (Internal Assessment - I)	02
4.	Written assignment on barriers and non-verbal communication	Role plays / case studies	02
5.	Summarization through graphic organisers (1. Text to graphic		02

	organizer 2. Graphic organizer to text)	NA	
6.	Written record of reading activities	Advanced level reading comprehension with MCQs (similar in level and format to CAT, GRE and GMAT verbal sections)	02
7.	Aptitude test on vocabulary and grammar	Aptitude test on vocabulary and grammar (similar in level and format to CAT, GRE and GMAT verbal sections)	02
8.	2 types of letters in complete block format	NA	02
9.	Written assignment on technical writing (Exercises based on framing Definitions, Describing Technical Objects, Framing User Instructions and Describing Technical Processes)	NA	02
10.	Documentation on case studies / role plays on Module 6	Case studies / role plays	02

Assessment:

The distribution of marks for term work shall be as follows:

- Assignments : **20 marks**
- Attendance (Theory and Practical) : **05 marks**

University of Mumbai

Program Structure B.E. Information Technology, (Rev. 2016)

T. E. Information Technology (Semester-V)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/Pract	Tut	Total
ITC501	Microcontroller and Embedded Programming	4	-	-	4	-	-	4
ITC502	Internet Programming	4	-	-	4	-	-	4
ITC503	Advanced Data Management Technology	4	-	-	4	-	-	4
ITC504	Cryptography & Network Security	4	-	-	4	-	-	4
ITDLO-I	Department Level Optional Course-I	4	-	-	4	-	-	4
ITL501	Internet Programming Lab	-	2	-	-	1	-	1
ITL502	Security Lab	-	2	-	-	1	-	1
ITL503	OLAP Lab	-	2	-	-	1	-	1
ITL504	IOT (Mini Project) Lab	-	2	-	-	1	-	1
ITL505	Business Communication and Ethics	-	2+2*	-	-	2	-	2
	Total	20	14	-	20	7	-	26

Course Code	Course Name	Examination Scheme								
		Theory					TW	Oral	Oral & Pract	Total
		Internal Assessment			End Sem. Exam	Exam Duration (in Hrs)				
		Test 1	Test 2	Avg.						
ITC501	Microcontroller and Embedded Programming	20	20	20	80	3	-	-	-	100
ITC502	Internet Programming	20	20	20	80	3	-	-	-	100
ITC503	Advanced Data Management Technology	20	20	20	80	3	-	-	-	100
ITC504	Cryptography & Network Security	20	20	20	80	3	-	-	-	100
ITDLO-I	Department Level Optional Course-I	20	20	20	80	3	--	-	-	100
ITL501	Internet Programming Lab	-	-	-	-	-	25	--	25	50
ITL502	Security Lab	-	-	-	-	-	25	25	--	50
ITL503	OLAP Lab	-	-	-	-	-	25	25	--	50

Course Code	Course Name	Theory	Practical	Tutorial	Theory	TW/ Practical	Tutorial	Total
ITL505	Business Communication and Ethics	2	2*	--	--	2	--	2

Course Code	Course Name	Examination Scheme							
		Theory Marks				Term Work	Oral & Practical	Oral	Total
		Internal assessment			End Sem. Exam				
		Test 1	Test 2	Avg. of two Tests					
ITL505	Business Communication and Ethics	--	--	--	--	50	--	--	50

* Batch wise practical's

Pre-requisite

- Communication Skills

Course Objective: Students will try:

1. To inculcate professional and ethical attitude at the workplace
2. To enhance effective communication and interpersonal skills
3. To build multidisciplinary approach towards all life tasks
4. To hone analytical and logical skills for problem-solving

Course Outcomes: Students will learn to:

1. Design a technical document using precise language, suitable vocabulary and apt style.
2. Develop the life skills/ interpersonal skills to progress professionally by building stronger relationships.
3. Demonstrate awareness of contemporary issues knowledge of professional and ethical responsibilities.
4. Apply the traits of a suitable candidate for a job/higher education, upon being trained in the techniques of holding a group discussion, facing interviews and writing resume/SOP.
5. Deliver formal presentations effectively implementing the verbal and non-verbal skills.

Module	Detailed Contents	Hrs.
01	Report Writing	05
1.1	Objectives of Report Writing	
1.2	Language and Style in a report	
1.3	Types : Informative and Interpretative (Analytical, Survey and Feasibility) and Formats of reports (Memo, Letter, Short and Long Report)	
02	Technical Writing	03
2.1	Technical Paper Writing (IEEE Format)	
2.2	Proposal Writing	
03	Introduction to Interpersonal Skills	08
3.1	Emotional Intelligence	
3.2	Leadership and Motivation	
3.3	Team Building	
3.4	Assertiveness	
3.5	Conflict Resolution and Negotiation Skills	
3.6	Time Management	
3.7	Decision Making	
04	Meetings and Documentation	02
4.1	Strategies for conducting effective meetings	
4.2	Notice, Agenda and Minutes of a meeting	
4.3	Business meeting etiquettes	
05	Introduction to Corporate Ethics	02
5.1	Professional and work ethics (responsible use of social media - Facebook, WA, Twitter etc.)	
5.2	Introduction to Intellectual Property Rights	
5.4	Ethical codes of conduct in business and corporate activities (Personal ethics, conflicting values, choosing a moral response and making ethical decisions)	
06	Employment Skills	06

6.1	Group Discussion	
6.2	Resume Writing	
6.3	Interview Skills	
6.4	Presentation Skills	
6.5	Statement of Purpose	
		26

1. Report Writing (Theory)
2. Technical Proposal
3. Technical Paper Writing (Paraphrasing a published IEEE Technical Paper)
4. Interpersonal Skills (Group activities and Role plays)
5. Interpersonal Skills (Documentation in the form of soft copy or hard copy)
6. Meetings and Documentation (Notice, Agenda, Minutes of Mock Meetings)
7. Corporate ethics (Case studies, Role plays)
8. Writing Resume and Statement of Purpose

1. Term Work:

2. Term work shall consist of all assignments from the list. The distribution of marks for term
3. work shall be as follows:
4. Book Report.....(10) Marks
5. Assignments (10) Marks
6. Project Report Presentation..... (15) Marks
7. Group Discussion..... (10) Marks
8. Attendance(05) Marks
9. **TOTAL:(50) Marks**

The final certification and acceptance of term work ensures the satisfactory performance of work assigned and minimum passing in the term work.

References

1. Fred Luthans, "*Organizational Behavior*", McGraw Hill, edition
2. Lesiker and Petit, "*Report Writing for Business*", McGraw Hill, edition
3. Huckin and Olsen, "*Technical Writing and Professional Communication*", McGraw Hill

Subject Code	Department Level Optional Course (DLO)	Subject Code	Institute Level Optional Course (ILO)
Semester VIII			
ITDLO8041	User Interaction Design	ILO8021	Project Management
ITDLO8042	Information Retrieval Systems	ILO8022	Finance Management
ITDLO8043	Knowledge Management	ILO8023	Entrepreneurship Development and Management
ITDLO8044	Robotics	ILO8024	Human Resource Management
ITDLO8045	Enterprise Resource Planning	ILO8025	Professional Ethics and CSR
		ILO8026	Research Methodology
		ILO8027	IPR and Patenting
		ILO8028	Digital Business Management
		ILO8029	Environmental Management

Course Code	Course Name	Credits
ILO8021	Project Management	03

Objectives:

1. To familiarize the students with the use of a structured methodology/approach for each and every unique project undertaken, including utilizing project management concepts, tools and techniques.
2. To appraise the students with the project management life cycle and make them knowledgeable about the various phases from project initiation through closure.

Outcomes: Learner will be able to...

1. Apply selection criteria and select an appropriate project from different options.
2. Write work break down structure for a project and develop a schedule based on it.
3. Identify opportunities and threats to the project and decide an approach to deal with them strategically.
4. Use Earned value technique and determine & predict status of the project.
5. Capture lessons learned during project phases and document them for future reference

Module	Detailed Contents	Hrs
01	Project Management Foundation: Definition of a project, Project Vs Operations, Necessity of project management, Triple constraints, Project life cycles (typical & atypical) Project phases and stage gate process. Role of project manager. Negotiations and resolving conflicts. Project management in various organization structures. PM knowledge areas as per Project Management Institute (PMI).	5
02	Initiating Projects: How to get a project started, Selecting project strategically, Project selection models (Numeric /Scoring Models and Non-numeric models), Project portfolio process, Project sponsor and creating charter; Project proposal. Effective project team, Stages of team development & growth (forming, storming, norming & performing), team dynamics.	6
03	Project Planning and Scheduling: Work Breakdown structure (WBS) and linear responsibility chart, Interface Co-ordination and concurrent engineering, Project cost estimation and budgeting, Top down and bottoms up budgeting, Networking and Scheduling techniques. PERT, CPM, GANTT chart. Introduction to Project Management Information System (PMIS).	8
04	Planning Projects: Crashing project time, Resource loading and leveling, Goldratt's critical chain, Project Stakeholders and Communication plan. Risk Management in projects: Risk management planning, Risk identification and risk register. Qualitative and quantitative risk assessment, Probability and impact matrix. Risk response strategies for positive and negative risks	6
05	5.1 Executing Projects: Planning monitoring and controlling cycle. Information needs and reporting,	8

	<p>engaging with all stakeholders of the projects. Team management, communication and project meetings.</p> <p>5.2 Monitoring and Controlling Projects: Earned Value Management techniques for measuring value of work completed; Using milestones for measurement; change requests and scope creep. Project audit.</p> <p>5.3 Project Contracting Project procurement management, contracting and outsourcing.</p>	
06	<p>6.1 Project Leadership and Ethics: Introduction to project leadership, ethics in projects. Multicultural and virtual projects.</p> <p>6.2 Closing the Project: Customer acceptance; Reasons of project termination, Various types of project terminations (Extinction, Addition, Integration, Starvation), Process of project termination, completing a final report; doing a lessons learned analysis; acknowledging successes and failures; Project management templates and other resources; Managing without authority; Areas of further study.</p>	6

REFERENCES:

1. Jack Meredith & Samuel Mantel, Project Management: A managerial approach, Wiley India, 7thEd.
2. A Guide to the Project Management Body of Knowledge (PMBOK[®] Guide), 5th Ed, Project Management Institute PA, USA
3. Gido Clements, Project Management, Cengage Learning.
4. Gopalan, Project Management, , Wiley India
5. Dennis Lock, Project Management, Gower Publishing England, 9 th Ed.

Assessment:

Internal:

Assessment consists of two tests out of which; one should be compulsory class test and the other is either a class test or assignment on live problems or course project.

End Semester Theory Examination:

Some guidelines for setting up the question paper. Minimum 80% syllabus should be covered in question papers of end semester examination. **In question paper weightage of each module will be proportional to number of respective lecture hours as mention in the syllabus.**

1. Question paper will comprise of total six question
2. All question carry equal marks
3. Questions will be mixed in nature (for example supposed Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4. Only Four question need to be solved.

presentation. Presentation of the report should be made in the language they are comfortable with, without any insistence that it should be in English. It is more important that they feel comfortable and confident. Each group may make the presentation through 4-5 of its group members or more. In case, the number of new students in a college is large, the presentation should be made by each group in front of 4 other groups besides their own, thus there would be about 100 students (in 5 groups) in the audience in a session. Several such sessions could run in parallel or serially. In each session, their faculty mentors and student guides, if any, should also be in the audience. These sessions would tell you how well the program ran, and what the students are feeling at the end of the program. This would also serve as a grand closure to the program.

A certificate shall be awarded to all the students, upon successful completion of the induction program based on their report and presentation.

Tentative schedule of 1st Week Induction Program:

Day 1	Session 1	Orientation program
	Session 2	Mentoring (group formation and introduction)
Day 2	Session 3	Diagnostic test (basic English, maths and computer operation)
	Session 4	Familiarisation of Department and Institute (Visits to department, laboratory, Library, Examination cell, office etc)
Day 3	Session 5	Physical Activity (Yoga, sports etc)
	Session 6	Universal human values session
Day 4	Session 7	Proficiency Modules (Short courses on basic maths, English and computer operation etc. for identified students)
	Session 8	Physical Activity (Yoga, sports etc)
Day 5	Session 9	Proficiency Modules (Short courses on basic maths, English and computer operation etc. for identified students)
	Session 10	Creative Arts, Cultural and Literary Activity

A session may be conducted for around 2-3 hours each.

Minimum 12 sessions to be conducted from the following 20 sessions, from 2nd week to last week of academics, throughout the semester.

Session 11	Physical Activity (Yoga, sports etc)- 1
Session 12	Extra-Curricular Activity- 1
Session 13	Physical Activity (Yoga, sports etc)-2
Session 14	Extra-Curricular Activity- 2
Session 15	Physical Activity (Yoga, sports etc)- 3
Session 16	Lectures /Workshops by Eminent People- 1
Session 17	Physical Activity (Yoga, sports etc)- 4
Session 18	Lectures /Workshops by Eminent People- 2
Session 19	Creative Arts, Cultural and Literary Activity- 1
Session 20	Lectures /Workshops by Eminent People- 3
Session 21	Creative Arts, Cultural and Literary Activity- 2
Session 22	Universal Human Values- 1 (Group Discussion among students as per mentoring group on various aspects of life, values, ethics etc.)
Session 23	Creative Arts, Cultural and Literary Activity- 3
Session 24	Universal Human Values- 2 (Group Discussion among students as per mentoring group on various aspects of life, values, ethics etc.)
Session 25	Creative Arts, Cultural and Literary Activity- 4
Session 26	Universal Human Values- 3 (Group Discussion among students as per mentoring group on various aspects of life, values, ethics etc.)
Session 27	Creative Arts, Cultural and Literary Activity- 5
Session 28	Physical Activity (Yoga, sports etc)- 5
Session 29	Feedback and Report on the Program- 1
Session 30	Feedback and Report on the Program- 2

B.E. (Production) Sem.-VIII

Course Code	Course Name	Teaching Scheme (Contact Hours)		Credits Assigned		Total			
		Theory	Pract	Theory	Pract				
PEC801	Fluid Power & Automation	04	--	04	--	04			
PEC802	Industrial Engineering and Human Resource Management	04	--	04	--	04			
PEC803	Economics, Finance, Accounting & Costing	04	--	04	--	04			
PEDLO 803X	Department Level Optional Course III	04	--	04	--	04			
ILO802X	Institute Level Optional courses	03	--	03	--	03			
PEL801	Fluid Power & Automation Laboratory	--	02	--	01	01			
PEL802	Industrial Engineering and Human Resource Management Laboratory	--	02	--	01	01			
PEL803	Economics, Finance, Accounting & Costing Tutorial	--	02	--	01	01			
	Total	19	06	19	03	22			
Examination Scheme									
Course Code	Course Name	Theory					Term Work	Pract. /Oral	Total
		Internal Assessment			End Sem. Exam.	Exam. Duration (in Hrs)			
		Test1	Test 2	Avg.					
PEC801	Fluid Power & Automation	20	20	20	80	03	--	--	100
PEC802	Industrial Engineering and Human Resource Management	20	20	20	80	03	--	--	100
PEC803	Economics, Finance, Accounting & Costing	20	20	20	80	03	--	--	100
PEDLO 803X	Department Level Optional Course III	20	20	20	80	03	--	--	100
ILO802X	Institute Level Optional courses	20	20	20	80	03	--	--	100
PEL801	Fluid Power & Automation Laboratory	--	--	--	--	--	25	25	50
PEL802	Industrial Engineering and Human Resource Management Laboratory	--	--	--	--	--	25	25	50
PEL803	Economics, Finance, Accounting & Costing Tutorial	--	--	--	--	--	25	--	25
	Total			100	400		75	50	625

Course Code	Course Name	Credits
PEC802	Industrial Engineering and Human Resource Management	04

Objectives

1. To familiarize with the practices of industrial engineering and human resource management.
2. To familiarize with the concepts of strategic objectives, optimization of human resource potential and enhancing of human effectiveness.

Outcomes learner will be able to...

1. Apply different industrial engineering principles for productivity enhancement.
2. Design integrated systems in industrial engineering.
3. Develop a concept in identifying, planning, and deployment of man power.
4. Develop an inter personal and soft skills.
5. Identify the training needs of employs at different levels.
6. Analyze legal aspects of employment

Module	Contents	Hrs
01	<p>1.1 Introduction to Industrial Engineering (IE) : Definition, History and Development of IE, Present Scenario of IE, Contributions to IE, Activities and approaches of IE, Objectives and Functions of IE.</p> <p>Productivity: Definition, Productivity in Enterprise, Task of Management, Productivity of Materials, Land, Building, Machine and Power. Measurement of Productivity, Factors affecting productivity, Productivity Improvement likes 5s, Poka-Yoke, Kaizen, Kanban, Quality Improvement Techniques like QFD, FMEA, Ishikawa diagram, SMED</p> <p>1.2 Method Study: Objectives and procedure for methods analysis, Recording techniques, Micro motion and macro-motion study: Principles of motion economy, Normal work areas and work place design.</p> <p>1.3 Work Measurement: Objectives, Work measurement techniques - time study, work sampling, pre-determined motion time standards (PMTS) Determination of time standards. Observed time, basic time, normal time, rating factors, allowances, and standard time, Maynard's Operation Sequence Technique (MOST).</p> <p>1.4 Job Evaluation and Wage Plan: Objective, Methods of job evaluation, job evaluation procedure, merit rating (performance appraisal), method of merit rating, wage and wage incentive plans.</p>	14
02	<p>2.1 Value Analysis : An Overview Of Value Analysis -Concepts and approaches of value analysis and engineering - importance of value, Function - identity, clarify – analysis Evaluation of VE-Evaluation of function, Problem setting system, problem solving system, value analysis case studies, Effective organization for value work, function analysis system techniques- FAST diagram, Case studies.</p> <p>2.2 Ergonomics :</p>	10

	<p>Introduction: Inter disciplinary nature of ergonomics modern ergonomics human performance – information processing – factors affecting human performance – physical workload and energy expenditure.</p> <p>Workspace Design - Anthropometry – workspace design for standing and seated workers – Arrangements of components within a physical space – Interpersonal aspect of workplace design.</p> <p>Recent Advances and Trends - Legislative trends – Trends in work system design – occupational diseases – Application of Ergonomics’ in automobiles.</p>	
03	<p>3.1 Human Resource Management : Introduction to HRM and Management Thought, Historical Developments of HRD, HRD core functions and activities, Virtual HR –E-Recruiting, HRIS- Human Resource Information System, E-Training, Human Resource Planning, Job Analysis, Recruitment and selection, Steps and types of Training and Development, Promotion, Safety and OSHA standards for HR, Differences of HR with Personnel Management, Careers with HR.</p>	06
04	<p>4.1 Human Behaviour : Definition, Factors affecting human behaviour – Genetics, social norms, creativity, attitude, faith and culture, Group and Group behaviour.</p> <p>4.2 Motivation : Definition, Types of theories and models of motivation, Practical Applications of motivation – Employee morale, Employee recognition programs, Drug abuse, Education, Business and work engagement.</p>	06
05	<p>5.1 Decision Making : Introduction, Problem Analysis through Decision making tools, Characteristics of decision making, Steps in Rational decision making.</p> <p>5.2 Communication: Definition, Types, Historical Developments in communication, Barriers to communication, Introduction to Bio-communications, Noise and its types,</p> <p>5.3 Leadership: Definition, Leadership Theories, Leadership styles, Self – Leadership.</p>	06
06	<p>Industrial Relations : Introduction, Historic perspective, Industrial Relations today, Collective Bargaining, Trade Unions and Managing Conflicts, Labour Laws and Legislations, Importance of Industrial Relations, Objectives of Industrial Relations, Introduction to Factories Act, Industries Disputes Act, Salary and Wage Fixation and Workman Compensation Act, Employee Grievances, Redressal.</p>	08

Assessment:

Internal Assessment for 20 marks:

Consisting **Two Compulsory Class Tests**

First test based on approximately 40% of contents and second test based on remaining contents (approximately 40% but excluding contents covered in Test I)

End Semester Examination:

Weightage of each module in end semester examination will be proportional to number of respective lecture hours mentioned in the curriculum.

1. Question paper will comprise of total **six questions, each carrying 20 marks**
2. **Question 1** will be **compulsory** and should **cover maximum contents of the curriculum**
3. **Remaining questions will be mixed in nature** (for example if Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4. Only **Four questions need to be solved**

Reference Books:

1. *Industrial Engineering and Production Management* -By M. Mahajan, Dhanpat Rai and Co.
2. *Human Resource Management*, Aswathapa. K, TMH,
3. Miles, L.D., "*Techniques of Value Engineering and Analysis*", McGraw Hill Book Company.
4. "*Industrial Engineering and Management*", Khanna, O.P., Dhanpat Rai and Sons.
5. *Personnel Management and Human Resources*, C.S. Venkataraman, B.K. Srivastava.
6. *Principles of Management*, P.C. Tripathi, P.N. Reddy.
7. *Organizational Behaviour*, Text and cases, Uma Sekaran.
8. *Factory Administration and Management*, A.S. Deshpande.
9. Bridger, R.S. "*Introduction to Ergonomics*", McGraw Hill.
10. Micomic, J. "*Human factors in Engineering and Design*", McGraw Hill,
11. *Work Study*, ILO, Geneva.

B.E. (Electronics Engineering) – Semester VIII

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical	Tutorial	Total
ELX801	Internet of Things	04	--	---	04	---	---	04
ELX 802	Analog and Mixed VLSI Design	04	--	---	04	---	---	04
ELXDLO804X	Department Level Optional course IV	04	--	---	04	---	---	04
ILO802X	Institute Level Optional course II#	03	---	---	03	---	---	03
ELXL801	Internet of Things Lab.		02			01	---	01
ELXL802	Analog and Mixed VLSI Design Lab.		02			01	---	01
ELXL803	Project-II	---	12	---	---	06	---	06
ELXLDLO804X	Department Level Optional Courses IV Lab.		02			01	---	01
	TOTAL	15	18	---	15	9	---	24

Course Code	Course Name	Examination Scheme – Semester VIII							
		Theory					Term Work	Oral /Prac	Total
		Internal Assessment (IA)			End Sem Exam Marks	Exam Duration (Hours)			
Test I	Test II	AVG.							
ELX801	Internet of Things	20	20	20	80	03	---	---	100
ELX 802	Analog and Mixed VLSI Design	20	20	20	80	03	---	---	100
ELXDLO804X	Department Level Optional course IV	20	20	20	80	03	---	---	100
ILO802X	Institute Level Optional course II	20	20	20	80	03	---	---	100
ELXL801	Internet of Things Lab.						25	25	50
ELXL802	Analog and Mixed VLSI Design Lab.						25	25	50
ELXL803	Project-II	---	---	---	---	---	100	50	150
ELXLDLO804X	Department Level Optional Courses IV Lab.						25	25	50
	Total	80	80	80	320	15	150	150	700

Programme Structure for Bachelor of Engineering (B.E.) – Electronics Engineering (Rev. 2016)

Course Code	Department Level Optional Course III	Course Code	Institute Level Optional Course I*
ELXDLO7031	Neural Network and Fuzzy Logic	ILO7011	Product Lifecycle Management
ELXDLO7032	Advance Networking Technologies	ILO7012	Reliability Engineering
ELXDLO7033	Robotics	ILO7013	Management Information System
ELXDLO7034	Integrated Circuit Technology	ILO7014	Design of Experiments
		ILO7015	Operation Research
		ILO7016	Cyber Security and Laws
		ILO7017	Disaster Management and Mitigation Measures
		ILO7018	Energy Audit and Management

Course Code	Department Level Elective Course IV	Course Code	Institute Level Elective Course II[#]
ELXDLO8041	Advanced Power Electronics	ILO8021	Project Management
ELXDLO8042	MEMS Technology	ILO8022	Finance Management
ELXDLO8043	Virtual Instrumentation	ILO8023	Entrepreneurship Development and Management
ELXDLO8044	Digital Image Processing	ILO8024	Human Resource Management
		ILO8025	Professional Ethics and CSR
		ILO8026	Research Methodology
		ILO8027	IPR and Patenting
		ILO8028	Digital Business Management
		ILO8029	Environmental Management

Course Code	Course Name	Credits
ILO7016	Cyber Security and Laws	03

Objectives:

1. To understand and identify different types cybercrime and cyber law
2. To recognized Indian IT Act 2008 and its latest amendments
3. To learn various types of security standards compliances

Outcomes: Learner will be able to...

1. Understand the concept of cybercrime and its effect on outside world
2. Interpret and apply IT law in various legal issues
3. Distinguish different aspects of cyber law
4. Apply Information Security Standards compliance during software design and development

Module	Detailed Contents	Hrs
01	Introduction to Cybercrime: Cybercrime definition and origins of the world, Cybercrime and information security, Classifications of cybercrime, Cybercrime and the Indian ITA 2000, A global Perspective on cybercrimes.	4
02	Cyber offenses & Cybercrime: How criminal plan the attacks, Social Engg, Cyber stalking, Cyber café and Cybercrimes, Botnets, Attack vector, Cloud computing, Proliferation of Mobile and Wireless Devices, Trends in Mobility, Credit Card Frauds in Mobile and Wireless Computing Era, Security Challenges Posed by Mobile Devices, Registry Settings for Mobile Devices, Authentication Service Security, Attacks on Mobile/Cell Phones, Mobile Devices: Security Implications for Organizations, Organizational Measures for Handling Mobile, Devices-Related Security Issues, Organizational Security Policies and Measures in Mobile Computing Era, Laptops	9
03	Tools and Methods Used in Cyberline Phishing, Password Cracking, Keyloggers and Spywares, Virus and Worms, Steganography, DoS and DDoS Attacks, SQL Injection, Buffer Over Flow, Attacks on Wireless Networks, Phishing, Identity Theft (ID Theft)	6
04	The Concept of Cyberspace E-Commerce, The Contract Aspects in Cyber Law, The Security Aspect of Cyber Law	8

	,The Intellectual Property Aspect in Cyber Law , The Evidence Aspect in Cyber Law , The Criminal Aspect in Cyber Law, Global Trends in Cyber Law , Legal Framework for Electronic Data Interchange Law Relating to Electronic Banking , The Need for an Indian Cyber Law	
05	Indian IT Act. Cyber Crime and Criminal Justice : Penalties, Adjudication and Appeals Under the IT Act, 2000, IT Act. 2008 and its Amendments	6
06	Information Security Standard compliances SOX, GLBA, HIPAA, ISO, FISMA, NERC, PCI.	6

Assessment:**Internal:**

Assessment consists of two tests out of which; one should be compulsory class test and the other is either a class test or assignment on live problems or course project.

End Semester Theory Examination:

Some guidelines for setting up the question paper. Minimum 80% syllabus should be covered in question papers of end semester examination.

In question paper weightage of each module will be proportional to number of respective lecture hours as mention in the syllabus.

1. Question paper will comprise of total six question
2. All question carry equal marks
3. Questions will be mixed in nature (for example supposed Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4. Only Four question need to be solved.

REFERENCES:

1. Nina Godbole, Sunit Belapure, *Cyber Security*, Wiley India, New Delhi
2. The Indian Cyber Law by Suresh T. Vishwanathan; Bharat Law House New Delhi
3. The Information technology Act, 2000; Bare Act- Professional Book Publishers, New Delhi.
4. Cyber Law & Cyber Crimes By Advocate Prashant Mali; Snow White Publications, Mumbai
5. Nina Godbole, *Information Systems Security*, Wiley India, New Delhi
6. Kenneth J. Knapp, *Cyber Security & Global Information Assurance* Information Science Publishing.
7. William Stallings, *Cryptography and Network Security*, Pearson Publication

8. Websites for more information is available on : The Information Technology ACT, 2008- TIFR : <https://www.tifrh.res.in>
9. Website for more information , A Compliance Primer for IT professional : <https://www.sans.org/reading-room/whitepapers/compliance/compliance-primer-professionals-33538>

Course Code	Course Name	Teaching scheme			Credit assigned			
		Theory	Pract.	Tut.	Theory	Pract.	Tut.	Total
ELX 601	Embedded Systems& Real Time Operating System	04	--	--	04	--	--	04

Course Code	Course Name	Examination Scheme									
		Theory					Term work	Pract.	Oral	Pract. / Oral	Total
		Internal Assessment			End sem	Duration (hrs)					
		Test 1	Test 2	Avg							
ELX 601	Embedded Systems& Real Time Operating System	20	20	20	80	03	--	--	--	--	100

Course Objectives

To study concepts involved in embedded hardware and software for systems realisation.

Course Outcomes

At the end of the course, the learner will have the ability to

1. Identify and describe various characteristic features and applications of embedded systems.
2. Analyse and identify hardware for embedded systems implementation.
3. Analyse and identify various software issues involved in Embedded systems for real time requirements.
4. Analyse and explain the design life-cycle for embedded system implementation.

Module		Contents	Time
1.		Introduction to Embedded Systems	04
	1.1	Characteristics and Design metrics of Embedded system.	
	1.2	Real time systems:Need for Real-time systems, Hard-Soft Real-time systems.	
	1.3	Challenges in Embedded system Design: Power, Speed and Code density.	
		Embedded Hardware	12
2.	2.1	Embedded cores, Types of memories, Sensors (Optical encoders, Resistive) and Actuators (Solenoid valves, Relay/switch, Opto-couplers)	
	2.2	Power supply considerations in Embedded systems: Low power features- Idle & Power down mode, Sleep mode, Brown-out detection.	
	2.3	Communication Interfaces: Comparative study of serial communication interfaces (RS-232, RS-485), I2C, CAN, USB (v2.0), Bluetooth, Zig-Bee. Selection criteria of above interfaces. (Frame formats of above protocols are not expected)	
		Embedded Software	14
3.	3.1	Program Modelling concepts: DFG,FSM,UML	
	3.2	Embedded C-programming concepts (from Embedded system point of view): Data types, Modifiers, Qualifiers, Functions, Macros, Interrupt service routine, Device drivers.	
	3.3	Real-time Operating system: Need of RTOS in Embedded system software and comparison with GPOS, Foreground/Background processes, Interrupt latency, Task, Task states, Multi-tasking, Context switching, Task scheduling, Scheduling algorithms-Rate Monotonic Scheduling, Earliest Deadline First (with numericals), Inter-process communication: Semaphore, Mailbox, Message queues, Event timers, Task synchronisation- Shared data, Priority inversion, Deadlock. Memory Management	
	3.4	Introduction to μ COS II RTOS: Study of Kernel structure of μ COS II, μ COS II functions for Initialisation, Task creation, Inter-task communication and Resource management, Memory management	08
		System Integration , Testing and Debugging Methodology	04
4.	4.1	Embedded Product Design Life-Cycle (EDLC)	
	4.2	Hardware-Software Co-design	
	4.3	Testing & Debugging: Boundary-scan/JTAG interface concepts, Black-Box testing, White-Box testing, Hardware emulation, Logic analyser.	
		Case Studies	06
5.	5.1	Soft Real-time: Automatic Chocolate Vending machine using μ COS II RTOS- Requirements study, Specification study using UML, Hardware architecture, Software architecture	
	5.2	Hard Real-time: Car Cruise-Control using μ COS II RTOS- Requirements study, specification study using UML, Hardware architecture, Software Architecture	

Text books:

1. Dr. K.V. K. K. Prasad, “Embedded Real Time System: Concepts, Design and Programming”, Dreamtech, New Delhi, Edition 2014.
2. Jean J. Labrosse, “MicroC / OS-II The Real-Time Kernel”, CMP Books, 2011, Edition 2nd.
3. Rajkamal, “Embedded Systems: Architecture, Programming and Design”, McGraw Hill Education (India) Private Limited, New Delhi, 2015, Edition 3rd.
4. SriramIyer, Pankaj Gupta, “Embedded Real Time Systems Programming”, Tata McGraw Hill Publishing Company Ltd., 2003.

Reference Books:

1. David Simon, “An Embedded Software Primer”, Pearson, 2009.
2. Jonathan W. Valvano, “Embedded Microcomputer Systems – Real Time Interfacing”, Publisher - Cengage Learning, 2012 Edition 3rd.
3. Andrew Sloss, Dominic Symes, Chris Wright, “ARM System Developers Guide Designing and Optimising System Software”, Elsevier, 2004
4. Frank Vahid, Tony Givargis, “Embedded System Design – A Unified Hardware/Software Introduction”, John Wiley & Sons Inc., 2002.
5. Shibu K V, “Introduction to Embedded Systems”, Tata McGraw Hill Education Private Limited, New Delhi, 2009.

Internal Assessment (IA):

Two tests must be conducted which should cover at least 80% of syllabus. The average marks of both the test will be considered as final IA marks

End Semester Examination:

1. Question paper will comprise of 6 questions, each carrying 20 marks.
2. The students need to solve total of 4 questions.
3. Question No.1 will be compulsory and based on the entire syllabus.
4. Remaining question (Q.2 to Q.6) will be set from all the modules.
5. Weightage of marks, commensurate with the time allocated to the respective module.

Program Structure B.E. Computer Engineering, (Rev. 2016) w.e.f. AY 2018-19

T. E. Computer Engineering (Semester-VI)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/Pract	Tut	Total
CSC601	Software Engineering	4	-	-	4	-	-	4
CSC602	System Programming & Compiler Construction	4	-	-	4	-	-	4
CSC603	Data Warehousing & Mining	4	-	-	4	-	-	4
CSC604	Cryptography & System Security	4	-	-	4	-	-	4
CSDLO 601X	Department Level Optional Course -II	4	-	-	4	-	-	4
CSL601	Software Engineering Lab	-	2	-	-	1	-	1
CSL602	System software Lab	-	2	-	-	1	-	1
CSL603	Data Warehousing & Mining Lab	-	2	-	-	1	-	1
CSL604	System Security Lab	-	2	-	-	1	-	1
CSP605	Mini-Project	-	4	-	-	2	-	2
	Total	20	12	-	20	6	-	26

Course Code	Course Name	Examination Scheme								
		Theory					TW	Oral	Oral & Pract	Total
		Internal Assessment			End Sem. Exam	Exam Duration (in Hrs)				
		Test 1	Test 2	Avg.						
CSC601	Software Engineering	20	20	20	80	3	-	-	-	100
CSC602	System Programming & Compiler Construction	20	20	20	80	3	-	-	-	100
CSC603	Data Warehousing & Mining	20	20	20	80	3	-	-	-	100
CSC604	Cryptography & System Security	20	20	20	80	3	-	-	-	100
CSDLO 601X	Department Level Optional Course -II	20	20	20	80	3	-	-	-	100
CSL601	Software Engineering Lab	-	-	-	-	-	25	25	--	50
CSL602	System Software Lab	-	-	-	-	-	25	--	25	50
CSL603	Data Warehousing & Mining Lab	-	-	-	-	-	25	--	25	50
CSL604	System Security Lab	-	-	-	-	-	25	---	25	50
CSP605	Mini-Project	-	-	-	-	-	25	---	25	50
	Total	100	100	100	400	-	125	25	100	750

Course Code	Course Name	Credits
CSC601	Software Engineering	4

Course objectives:

The main objective of the course is to introduce to the students about the product that is to be engineered and the processes that provides a framework for the engineering methodologies and practices.

1. To provide the knowledge of software engineering discipline.
2. To apply analysis, design and testing principles to software project development.
3. To demonstrate and evaluate real time projects with respect to software engineering principles.

Course outcomes:

On successful completion of course, learners will be able to:

1. Understand and demonstrate basic knowledge in software engineering.
2. Identify requirements, analyze and prepare models.
3. Plan, schedule and track the progress of the projects.
4. Design & develop the software projects.
5. Identify risks, manage the change to assure quality in software projects.
6. Apply testing principles on software project and understand the maintenance concepts.

Prerequisite:

1. Concepts of Object Oriented Programming & Methodology
2. Knowledge of developing applications with front end & back end connectivity.

Course syllabus:

Module No.	Unit No.	Topics	Hrs.
1.0		Introduction To Software Engineering and Process Models	08
	1.1	Nature of Software, Software Engineering, Software Process, Capability Maturity Model (CMM)	
	1.2	Generic Process Model, Prescriptive Process Models: The Waterfall Model, V-model, Incremental Process Models, Evolutionary Process Models, Concurrent Models, Agile process, Agility Principles, Extreme Programming (XP), Scrum, Kanban model	
2.0		Requirements Analysis and Modelling	08
	2.1	Requirement Elicitation, Software requirement specification (SRS), Developing Use Cases (UML)	
	2.2	Requirement Model – Scenario-based model, Class-based model, Behavioural model.	
3.0		Project Scheduling and Tracking	08
	3.1	Management Spectrum, 3Ps (people, product and process)	
	3.2	Process and Project metrics	

	3.3	Software Project Estimation: LOC, FP, Empirical Estimation Models - COCOMO II Model, Specialized Estimation Techniques	
	3.4	Project scheduling: Defining a Task Set for the Software Project, Timeline charts, Tracking the Schedule, Earned Value Analysis	
4.0		Software Design	10
	4.1	Design Principles, Design Concepts, Effective Modular Design – Cohesion and Coupling	
	4.2	Architectural Design	
	4.3	Component-level design	
	4.4	User Interface Design	
5.0		Software Risk, Configuration Management & Quality Assurance	08
	5.1	Risk Identification, Risk Assessment, Risk Projection, RMMM	
	5.2	Software Configuration management, SCM repositories, SCM process	
	5.3	Software Quality Assurance Task and Plan, Metrics, Software Reliability, Formal Technical Review (FTR), Walkthrough	
6.0		Software Testing and Maintenance	10
	6.1	Strategic Approach to Software Testing, Unit testing, Integration testing Verification, Validation Testing, System Testing	
	6.2	Software Testing Fundamentals, White-Box Testing , Basis Path Testing, Control Structure Testing, Black-Box Testing,	
	6.3	Software maintenance and its types, Software Re-engineering, Reverse Engineering	
		Total	52

Internal Assessment:

Assessment consists of two class tests of 20 marks each. The first class test is to be conducted when approx. 40% syllabus is completed and second class test when additional 40% syllabus is completed. Duration of each test shall be one hour.

End Semester Theory Examination:

1. Question paper will comprise of 06 questions, each carrying 20 marks.
2. The students need to solve total 04 questions.
3. Question No.1 will be compulsory and based on entire syllabus.
4. Remaining questions (Q.2 to Q.6) will be selected from all the modules.

Text Books:

1. Roger Pressman, "Software Engineering: A Practitioner's Approach", McGraw-Hill Publications
2. Ian Sommerville, "Software Engineering", Pearson Education (9th edition)
3. Ali Behfroz and Fredeick J.Hudson, "Software Engineering Fundamentals", Oxford University Press

Reference Books:

1. Ugrasen Suman, "Software Engineering – Concepts and Practices", Cengage Learning
2. Pankaj Jalote, "An integrated approach to Software Engineering", Springer/Narosa
3. Jibitesh Mishra and Ashok Mohanty, "Software Engineering", Pearson
4. Rajib Mall, "Fundamentals of Software Engineering", Prentice Hall India

Course Code	Course Name	Credits
CSC604	Cryptography and System Security	4

Course Objectives:

1. To introduce classical encryption techniques and concepts of modular arithmetic and number theory.
2. To explore the working principles and utilities of various cryptographic algorithms including secret key cryptography, hashes and message digests, and public key algorithms
3. To explore the design issues and working principles of various authentication protocols, PKI standards and various secure communication standards including Kerberos, IPsec, and SSL/TLS and email.
4. To develop the ability to use existing cryptographic utilities to build programs for secure communication.

Course Outcomes: At the end of the course learner will able to

1. Understand system security goals and concepts, classical encryption techniques and acquire fundamental knowledge on the concepts of modular arithmetic and number theory.
2. Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication
3. Apply the knowledge of cryptographic checksums and evaluate the performance of different message digest algorithms for verifying the integrity of varying message sizes.
4. Apply different digital signature algorithms to achieve authentication and design secure applications
5. Understand network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPsec, and PGP.
6. Analyze and apply system security concept to recognize malicious code.

Detailed Syllabus:

Module No	Unit No	Detailed Content	Hrs
1	Introduction & Number Theory		10
	1.1	Security Goals, Services, Mechanisms and attacks, The OSI security architecture, Network security model, Classical Encryption techniques, Symmetric cipher model, mono-alphabetic and poly-alphabetic substitution techniques: Vigenere cipher, playfair cipher, Hill cipher, transposition techniques: keyed and keyless transposition ciphers, steganography.	
	1.2	Modular Arithmetic and Number Theory:- Euclid's algorithm—Prime numbers-Fermat's and Euler's theorem- Testing for primality -The Chinese remainder theorem, Discrete logarithms.	
2	Symmetric and Asymmetric key Cryptography and key Management		12

	2.1	Block cipher principles, block cipher modes of operation, DES, Double DES, Triple DES, Advanced Encryption Standard (AES), Stream Ciphers: RC5 algorithm.	
	2.2	Public key cryptography: Principles of public key cryptosystems-The RSA algorithm, The knapsack algorithm, ElGamal Algorithm.	
	2.3	Key management techniques: using symmetric and asymmetric algorithms and trusted third party. Diffie Hellman Key exchange algorithm.	
	Hashes, Message Digests and Digital Certificates		06
3	3.1	Cryptographic hash functions, Properties of secure hash function, MD5, SHA-1, MAC, HMAC, CMAC.	
	3.2	Digital Certificate: X.509, PKI	
	Authentication Protocols & Digital signature schemes		08
4	4.1	User Authentication and Entity Authentication, One-way and mutual authentication schemes, Needham Schroeder Authentication protocol, Kerberos Authentication protocol.	
	4.2	Digital Signature Schemes – RSA, ElGamal and Schnorr signature schemes.	
	Network Security and Applications		10
	5.1	Network security basics: TCP/IP vulnerabilities (Layer wise), Packet Sniffing, ARP spoofing, port scanning, IP spoofing, TCP syn flood, DNS Spoofing.	
5	5.2	Denial of Service: Classic DOS attacks, Source Address spoofing, ICMP flood, SYN flood, UDP flood, Distributed Denial of Service, Defenses against Denial of Service Attacks.	
	5.3	Internet Security Protocols: SSL, IPSEC, Secure Email: PGP, Firewalls, IDS and types, Honey pots	
	System Security		06
6	6.1	Software Vulnerabilities: Buffer Overflow, Format string, cross-site scripting, SQL injection, Malware: Viruses, Worms, Trojans, Logic Bomb, Bots, Rootkits.	

Text Books:

1. William Stallings, Cryptography and Network Security, Principles and Practice, 6th Edition, Pearson Education, March 2013
2. Behrouz A. Ferouzan, "Cryptography & Network Security", Tata Mc Graw Hill
3. Bernard Menezes, "Cryptography & Network Security", Cengage Learning.
4. Network Security Bible, Eric Cole, Second Edition, Wiley.

Reference Books:

1. Applied Cryptography, Protocols Algorithms and Source Code in C, Bruce Schneier, Wiley.
2. Cryptography and Network Security, Atul Kahate, Tata Mc Graw Hill.

Assessment:**Internal Assessment:**

Assessment consists of two class tests of 20 marks each. The first class test is to be conducted when approx. 40% syllabus is completed and second class test when additional 40% syllabus is completed. Duration of each test shall be one hour.

Theory Examination:

1. Question paper will comprise of total six questions.
2. All question carry equal marks
3. Questions will be mixed in nature (for example supposed Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4. Only Four question need to be solved.

In question paper weightage of each module will be proportional to number of respective lecture hours as mentioned in the syllabus.

Course Code	Course Name	Credits
CSDLO7031	Advanced System Security and Digital Forensics	4

Course Objectives:

1. To understand cyber attacks and defence strategies.
2. To understand underlying principles of access control mechanisms.
3. To explore software vulnerabilities, attacks and protection mechanisms of wireless networks and protocols, mobile devices and web applications.
4. To develop and mitigate security management and policies.
5. To understand and explore techniques used in digital forensics.

Course Outcomes: At the end of the course learner will able to

1. Understand cyber attacks and apply access control policies and control mechanisms.
2. Identify malicious code and targeted malicious code.
3. Detect and counter threats to web applications.
4. Understand the vulnerabilities of Wi-Fi networks and explore different measures to secure wireless protocols, WLAN and VPN networks.
5. Understand the ethical and legal issues associated with cyber crimes and be able to mitigate impact of crimes with suitable policies.
6. Use different forensic tools to acquire and duplicate data from compromised systems and analyse the same.

Prerequisite: Cryptography and System Security

Module No.	Unit No.	Detailed Content	Hrs
1	Introduction & Access Control		08
	1.1	Cyber-attacks, Vulnerabilities, Defence Strategies and Techniques, Authentication Methods and Protocols, Defence in Depth Strategies.	
	1.2	Access Control Policies: DAC, MAC, Multi-level Security Models: Biba Model, Bell La Padula Model, Single Sign on, Federated Identity Management.	
2	Program & OS Security		08
	2.1	Malicious and Non-Malicious programming errors, Targeted Malicious codes: Salami Attack, Linearization Attack, Covert Channel, Control against Program threats.	
	2.2	Operating System Security: Memory and Address protection, File Protection Mechanism, User Authentication.	
	2.3	Linux and Windows: Vulnerabilities, File System Security.	
3	Web Application Security		12
		OWASP, Web Security Considerations, User Authentication and Session	

		Management, Cookies, SSL, HTTPS, SSH, Privacy on Web, Web Browser Attacks, Account Harvesting, Web Bugs, Clickjacking, Cross-Site Request Forgery, Session Hijacking and Management, Phishing and Pharming Techniques, Web Service Security, OAuth 2.0	
4	Wireless Security		08
		Wi-Fi Security, WEP, WPA, WPA-2, Mobile Device Security- Security Threats, Device Security, GSM and UMTS Security, IEEE 802.11/802.11i Wireless LAN Security, VPN Security.	
5	Legal and Ethical issues		06
	5.1	Cybercrime and its types, Intellectual property, Privacy, Ethical issues.	
	5.2	Protecting Programs and Data, Information and the Law, Rights of Employees and Employers, Redress for Software Failures, Computer Crime, Ethical Issues in Computer Security, case studies of ethics.	
6	Digital Forensics		10
		Introduction to Digital Forensics, Acquiring Volatile Data from Windows and Unix systems, Forensic Duplication Techniques, Analysis of forensic images using open source tools like Autopsy and SIFT, Investigating logs from Unix and windows systems, Investigating Windows Registry.	

Text Books:

1. Computer Security Principles and Practice, William Stallings, Sixth Edition, Pearson Education
2. Security in Computing, Charles P. Pfleeger, Fifth Edition, Pearson Education
3. Network Security and Cryptography, Bernard Menezes, Cengage Learning
4. Network Security Bible, Eric Cole, Second Edition, Wiley

Reference Books:

1. Computer Security, Dieter Gollman, Third Edition, Wiley
2. Digital Forensics by Nilakshi Jain & Kalbande, Wiley.
3. Incident Response & Computer Forensics by Kevin Mandia, Chris Prosis, Wiley.
4. Cyber Security. Nina Godbole, Sunit Belapure, Wiley.

Digital references:

1. https://www.owasp.org/index.php/Category:OWASP_Top_Ten_Project

Assessment:

Internal Assessment:

Assessment consists of two class tests of 20 marks each. The first class test is to be conducted when approx. 40% syllabus is completed and second class test when additional 40% syllabus is completed. Duration of each test shall be one hour.

Theory Examination:

1. Question paper will comprise of total six question.
2. All question carry equal marks
3. Questions will be mixed in nature (for example supposed Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4. Only Four question need to be solved.

Laboratory/ Experimental Work

The Experiments for this course are required to be performed and to be evaluated in CSL704: Computational Lab-1.

Lab Outcome:

Learner will able to

1. Analyze static code and program vulnerabilities using open source tools.
2. Explore and analyze network vulnerabilities using open source tools.
3. Explore and analyze different security tools to detect web application and browser vulnerabilities.
4. Explore and analyze different tools to secure wireless networks and routers, and mobile devices and perform penetration testing, and analyze its impact.
5. Understand and implement AAA using RADIUS and TACACS.
6. Explore various forensics tools in Kali Linux and use them to acquire, duplicate and analyze data and recover deleted data.

Sr. No	Description
1	Static code analysis using open source tools like RATS, Flawfinder etc.
3	Vulnerability scanning using Nessus, Nikto (Kali Linux)
4	Explore web-application vulnerabilities using open source tools like Wapiti, browser exploitation framework (BeEf), etc.
5	Detect SQL injection vulnerabilities in a website database using SQLMap
6	Performing a penetration testing using Metasploit (Kali Linux)
7	Exploring Router and VLAN security, setting up access lists using Cisco Packet tracer(student edition)
8	Exploring VPN security using Cisco Packet tracer(student edition)
9	Exploring Authentication and access control using RADIUS, TACACS and TACACS+
10	Install and use a security app on an Android mobile (e.g. Droidcrypt)
11	Explore forensics tools in Kali Linux for acquiring, analyzing and duplicating data: dd, dcfldd, foremost, scalpel, debugfs, wireshark, tcptrace, tcpflow
12	Analysis of forensic images using open source tools like Autopsy, SIFT, FKT Imager
13	Use of steganographic tools like OpenStego, to detect data hiding or unauthorized file copying

14.	Use Password cracking using tools like John the Ripper/Cain and Abel/ Ophcrack to detect weak passwords.
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Reference Books:

1. Build your own Security Lab, Michael Gregg, Wiley India
2. CCNA Security, Study Guide, Tim Boyles, Sybex.
3. Web Application Hacker's Handbook, Dafydd Stuttard, Marcus Pinto, Wiley India
4. Network Infrastructure Security, Randy Waver, Dawn Weaver, Cengage Learning.
5. Incident Response & Computer Forensics by Kevin Mandia, Chris Prorise, Wiley.

Digital References:

<http://www.opentechinfo.com/learn-use-kali-linux/>

T. E. Information Technology (Semester-VI)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/Pract	Tut	Total
ITC601	Software Engineering with Project Management	4	-	-	4	-	-	4
ITC602	Data Mining and Business Intelligence	4	-	-	4	-	-	4
ITC603	Cloud Computing & Services	4	-	-	4	-	-	4
ITC604	Wireless Networks	4	-	-	4	-	-	4
ITDLO-II	Department Level Optional Course -II	4	-	-	4	-	-	4
ITL601	Software Design Lab	-	2	-	-	1	-	1
ITL602	Business Intelligence Lab	-	2	-	-	1	-	1
ITL603	Cloud Service Design Lab	-	2	-	-	1	-	1
ITL604	Sensor Network Lab	-	2	-	-	1	-	1
ITM605	Mini-project	-	4	-	-	2	-	2
	Total	20	12	-	20	6	-	26

Course Code	Course Name	Examination Scheme								
		Theory					TW	Oral	Oral & Pract	Total
		Internal Assessment			End Sem. Exam	Exam Duration (in Hrs)				
		Test 1	Test 2	Avg.						
ITC601	Software Engineering with Project Management	20	20	20	80	3	-	-	-	100
ITC602	Data Mining and Business Intelligence	20	20	20	80	3	-	-	-	100
ITC603	Cloud Computing & Services	20	20	20	80	3	-	-	-	100
ITC604	Wireless Networks	20	20	20	80	3	-	-	-	100
ITDLO-II	Department Level Optional Course -II	20	20	20	80	3	-	-	-	100
ITL601	Software Design Lab	-	-	-	-	-	25	25	--	50
ITL602	Business Intelligence Lab	-	-	-	-	-	25	25	--	50
ITL603	Cloud Service Design Lab	-	-	-	-	-	25	25	--	50
ITL604	Sensor Network Lab	-	-	-	-	-	25	25	--	50
ITM605	Mini-Project	-	-	-	-	-	25	25	--	50
Total		100	100	100	400	-	125	125	--	750

Department Level Optional Course (DLO)

Every student is required to take one Department Elective Course for Semester VI. Different sets of courses will run in both the semesters. Students can take these courses from the list of department electives, which are closely allied to their disciplines.

(DLO-I subjects will have no Labs only Theory)

Subject Code	Department Level Optional Course (DLO)
Semester VI	
ITDLO6021	Advance Internet Programming
ITDLO6022	Software Architecture
ITDLO6023	Digital Forensics
ITDLO6024	Multimedia Systems
ITDLO6025	Green IT

Course Code	Course Name	Theory	Practical	Tutorial	Theory	Oral & Practical	Tutorial	Total
ITC601	Software Engineering with Project Management	04	--	--	04	--	--	04

Course Code	Course Name	Examination Scheme						
		Theory Marks				Term Work	Oral & Practical	Total
		Internal assessment			End Sem. Exam			
		Test1	Test2	Avg. of two Tests				
ITC601	Software Engineering with Project Management	20	20	20	80	--	--	100

Course Objectives: Students will try:

1. To understand the nature of software development and software life cycle process models, agile software development, SCRUM and other agile practices.
2. To Explain methods of capturing, specifying, visualizing and analyzing software requirements.
3. To understand concepts and principles of software design and user-centric approach and principles of effective user interfaces.
4. To know basics of testing and understanding concept of software quality assurance and software configuration management process.
5. To understand need of project management and project management life cycle.
6. To understand project scheduling concept and risk management associated to various type of projects.

Course Outcomes: Students will be able to:

1. Define various software application domains and remember different process model used in software development.
2. Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques.
3. Convert the requirements model into the design model and demonstrate use of software and user-interface design principles.
4. Distinguish among SCM and SQA and can classify different testing strategies and tactics and compare them.
5. Justify role of SDLC in Software Project Development and they can evaluate importance of Software Engineering in PLC.
6. Generate project schedule and can construct, design and develop network diagram for different type of Projects. They can also organize different activities of project as per Risk impact factor.

Prerequisite: Programming and Networking.

Detailed syllabus:

Sr. No.	Module	Detailed Content	Hours	CO Mapping
0	Prerequisite	Nature of Software, Software Definition, Software Characteristics, Software Application Domains	02	
I	The Software Process	Generic view of Process, Prescriptive Models: Waterfall Model, Incremental-RAD Model, Evolutionary Process Model- Prototyping, Spiral and Concurrent Development Model, Specialized Models: Component based, Aspect Oriented Development, Agile Methodology, Scrum and Extreme Programming	07	CO1
II	Requirements Engineering and Cost Estimation	Requirement, Types of Requirements, Requirement gathering, Requirement Engineering Task, Identifying Stakeholders, Multiple viewpoints, SRS (Software Requirement Specification) Project Estimation, LOC based, FP based and Use case based estimation.	07	CO1 CO2
III	Analysis and Design Engineering	Introduction of Analysis elements, Scenario based, Flow based, behavior and class based Design Concepts and Principles, Architecture Design, Component Level Design, System Level Design, User Interface Design.	09	CO1 CO2 CO3
IV	Quality & Configuration Management	Need for Testing, Testing Tactics, Testing strategies, McCall's Quality Factor, Software Configuration Management, SCM Process	07	CO4
V	IT Project Management	Introduction, 4 P's, W5HH Principle, Need for Project Management, Project Life cycle and ITPM, Project Feasibility, RFP, PMBOK Knowledge areas, Business Case, Project Planning, Project Charter and Project Scope.	10	CO5

VI	Project Scheduling and Risk Management	WBS, Developing the Project Schedule, Network Diagrams (AON, AOA), CPM and PERT, Gantt Chart, Risk Identification, Risk Projection and RMMM	10	CO1 CO2 CO3 CO4 CO6
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Text Books:

1. Roger S Pressman “Software Engineering : A Practitioner’s Approach” 7th Edition Mcgraw-Hill ISBN:0073375977
2. Jack T. Marchewka, “Information Technology Project Management” 4th Edition ,Wiley India

References:

1. “Software Engineering : A Precise Approach” Pankaj Jalote , Wiley India
2. Ian Sommerville “ Software Engineering” 9th edition Pearson Education SBN-13: 978-0- 13-703515-1, ISBN-10: 0-13-703515-2
3. John M. Nicholas, Project Management for Business and Technology, 3rd edition, Pearson Education.
4. Software Project management by Bob Hughes, Mike Cotterell , Rajib Mall

Assessment:

Internal Assessment for 20 marks:

Consisting of **Two Compulsory Class Tests**

Approximately 40% to 50% of syllabus content must be covered in First test and remaining 40% to 50% of syllabus contents must be covered in second test.

End Semester Examination: Some guidelines for setting the question papers are as:

- Weightage of each module in end semester examination is expected to be/will be proportional to number of respective lecture hours mentioned in the syllabus.
- Question paper will comprise of total **six questions, each carrying 20 marks.**
- **Q.1** will be **compulsory** and should **cover maximum contents of the syllabus.**
- **Remaining question will be mixed in nature** (for example if Q.2 has part (a) from module 3 then part (b) will be from any other module. (Randomly selected from all the modules.)
- Total **four questions** need to be solved.

University of Mumbai

Program Structure B.E. Information Technology, (Rev. 2016)

T. E. Information Technology (Semester-V)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/Pract	Tut	Total
ITC501	Microcontroller and Embedded Programming	4	-	-	4	-	-	4
ITC502	Internet Programming	4	-	-	4	-	-	4
ITC503	Advanced Data Management Technology	4	-	-	4	-	-	4
ITC504	Cryptography & Network Security	4	-	-	4	-	-	4
ITDLO-I	Department Level Optional Course-I	4	-	-	4	-	-	4
ITL501	Internet Programming Lab	-	2	-	-	1	-	1
ITL502	Security Lab	-	2	-	-	1	-	1
ITL503	OLAP Lab	-	2	-	-	1	-	1
ITL504	IOT (Mini Project) Lab	-	2	-	-	1	-	1
ITL505	Business Communication and Ethics	-	2+2*	-	-	2	-	2
	Total	20	14	-	20	7	-	26

Course Code	Course Name	Examination Scheme								
		Theory					TW	Oral	Oral & Pract	Total
		Internal Assessment			End Sem. Exam	Exam Duration (in Hrs)				
		Test 1	Test 2	Avg.						
ITC501	Microcontroller and Embedded Programming	20	20	20	80	3	-	-	100	
ITC502	Internet Programming	20	20	20	80	3	-	-	100	
ITC503	Advanced Data Management Technology	20	20	20	80	3	-	-	100	
ITC504	Cryptography & Network Security	20	20	20	80	3	-	-	100	
ITDLO-I	Department Level Optional Course-I	20	20	20	80	3	--	-	100	
ITL501	Internet Programming Lab	-	-	-	-	-	25	--	25	50
ITL502	Security Lab	-	-	-	-	-	25	25	--	50
ITL503	OLAP Lab	-	-	-	-	-	25	25	--	50

Course Code	Course Name	Theory	Practical	Tutorial	Theory	Oral & Practical	Tutorial	Total
ITC504	Cryptography & Network Security	04	--	--	04	--	--	04

Course Code	Course Name	Examination Scheme							
		Theory Marks				Term Work	Oral & Practical	Oral	Total
		Internal assessment			End Sem. Exam				
		Test 1	Test2	Avg. of two Tests					
ITC504	Cryptography & Network Security	20	20	20	80	--	--	--	100

Course Objectives: Students will try to learn:

1. The concepts of classical encryption techniques and concepts of finite fields and number theory.
2. And explore the working principles and utilities of various cryptographic algorithms including secret key cryptography, hashes and message digests, and public key algorithms
3. And explore the design issues and working principles of various authentication protocols, PKI standards.
4. And explore various secure communication standards including Kerberos, IPsec, and SSL/TLS and email.
5. The ability to use existing cryptographic utilities to build programs for secure communication.
6. The concepts of cryptographic utilities and authentication mechanisms to design secure applications

Course Outcomes: Students will be able to:

1. Identify information security goals, classical encryption techniques and acquire fundamental knowledge on the concepts of finite fields and number theory.
2. Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication
3. Apply the knowledge of cryptographic checksums and evaluate the performance of different message digest algorithms for verifying the integrity of varying message sizes
4. Apply different digital signature algorithms to achieve authentication and create secure applications
5. Apply network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPSec, and PGP.
6. Apply the knowledge of cryptographic utilities and authentication mechanisms to design secure applications

Prerequisite: Computer Networks

Detailed syllabus:

Sr No	Module	Detailed Content	Hours	CO Mapping
0	Prerequisites	Basic concepts of OSI Layer	02	--
I	Introduction & Number Theory	Services, Mechanisms and attacks-the OSI security architecture-Network security model-Classical Encryption techniques (Symmetric cipher model, mono-alphabetic and poly-alphabetic substitution techniques: Vignere cipher, playfair cipher, Hill cipher, transposition techniques: keyed and keyless transposition ciphers, steganography).	09	CO1
II	Block Ciphers & Public Key Cryptography	Data Encryption Standard-Block cipher principles-block cipher modes of operation-Advanced Encryption Standard (AES)-Triple DES-Blowfish-RC5 algorithm. Public key cryptography: Principles of public key cryptosystems-The RSA algorithm, The knapsack algorithm, El-Gamal Algorithm. Key management – Diffie Hellman Key exchange	09	CO2 CO6
III	Cryptographic Hashes, Message Digests and Digital Certificates	Authentication requirement – Authentication function , Types of Authentication, MAC – Hash function – Security of hash function and MAC –MD5 – SHA – HMAC – CMAC, Digital Certificate: X.509, PKI	09	CO3
IV	Digital signature schemes and authentication Protocols	Digital signature and authentication protocols : Needham Schroeder Authentication protocol, Digital Signature Schemes – RSA, El Gamal and Schnorr, DSS.	07	CO4
V	Network Security	Network security basics: TCP/IP vulnerabilities (Layer wise), Packet Sniffing, ARP spoofing, port scanning, IP spoofing, TCP syn flood, DNS Spoofing. Denial of Service: Classic DOS attacks, Source Address spoofing, ICMP flood, SYN flood, UDP flood, Distributed Denial of Service, Defenses against Denial of Service Attacks.	10	CO5

		Firewalls, Intrusion Detection Systems: Host Based and Network Based IDS, Honey pots.		
VI	Network Security Applications	Authentication Applications, Kerberos, Internet Security Protocols: SSL, TLS, IPSEC:AH, ESP, Secure Email: PGP and S/MIME, Key Management.	06	CO5 CO6

Text Books:

1. Mark Stamp's Information Security Principles and Practice, Wiley
2. William Stallings, Cryptography and Network Security, Principles and Practice, 6th Edition, Pearson Education, March 2013
3. Behrouz A. Ferouzan, "Cryptography & Network Security", Tata Mc Graw Hill
4. Bernard Menezes, "Cryptography & Network Security", Cengage Learning

Reference Books:

1. Applied Cryptography, Protocols Algorithms and Source Code in C, Bruce Schneier, Wiley.
2. Cryptography and Network Security, Atul Kahate, Tata Mc Graw Hill.

Assessment:

Internal Assessment for 20 marks:

Consisting of **Two Compulsory Class Tests**

Approximately 40% to 50% of syllabus content must be covered in First test and remaining 40% to 50% of syllabus contents must be covered in second test.

End Semester Examination: Some guidelines for setting the question papers are as:

- Weightage of each module in end semester examination is expected to be/will be proportional to number of respective lecture hours mentioned in the syllabus.
- Question paper will comprise of total **six questions, each carrying 20 marks.**
- **Q.1** will be **compulsory** and should **cover maximum contents of the syllabus.**
- **Remaining question will be mixed in nature** (for example if Q.2 has part (a) from module 3 then part (b) will be from any other module. (Randomly selected from all the modules.)
- Total **four questions** need to be solved.

Course Code	Course Name	Examination Scheme								
		Theory					TW	Oral	Oral & Pract	Total
		Internal Assessment			End Sem. Exam	Exam Duration (in Hrs)				
		Test 1	Test 2	Avg.						
ITC701	Enterprise Network Design	20	20	20	80	3	-	-	100	
ITC702	Infrastructure Security	20	20	20	80	3	-	-	100	
ITC703	Artificial Intelligence	20	20	20	80	3	-	-	100	
ITDLO-II	Department Level Optional Course -III	20	20	20	80	3	-	-	100	
ILO-I	Institute Level Optional Course-I	20	20	20	80	3	--	-	100	
ITL701	Network Design Lab	-	-	-	-	-	25	25	--	50
ITL702	Advanced Security Lab	-	-	-	-	-	25	25	--	50
ITL703	Intelligence System Lab	--	-	-	-	--	25	25	--	50
ITL704	Android Apps Development Lab						25	25	--	25
ITM705	Project-I	-	-	-	-	-	50	25	--	75
Total		100	100	100	400		150	125	--	750

Department Level Optional Course (DLO)

Every student is required to take one Department Elective Course for Semester VII. Different sets of courses will run in both the semesters. Students can take these courses from the list of department electives, which are closely allied to their disciplines.

(DLO-I subjects will have no Labs only Theory)

Institute Level Optional Course (ILO)

Every student is required to take one Institute Elective Course for Semester VII, which is not closely allied to their disciplines. Different sets of courses will run in the both the semesters.

Subject Code	Department Level Optional Course (DLO)	Subject Code	Institute Level Optional Course (ILO)
Semester VII			
ITDLO7031	Storage Area Networks	ILO7011	Product Lifecycle Management
ITDLO7032	Mobile Application Development	ILO7012	Reliability Engineering
ITDLO7033	High Performance Computing	ILO7013	Management Information System
ITDLO7034	Software Testing and Quality Assurance	ILO7014	Design of Experiments
ITDLO7035	Soft Computing	ILO7015	Operation Research
		ILO7016	Cyber Security and Laws
		ILO7017	Disaster Management and Mitigation Measures
		ILO7018	Energy Audit and Management
		ILO7019	Development Engineering

Course Code	Course Name	Theory	Practical	Tutorial	Theory	Practical/Oral	Tutorial	Total
ITC702	Infrastructure Security	04	--	-	04	--	-	04

Course Code	Course Name	Examination Scheme							
		Theory Marks				End Sem. Exam	Term Work	Oral & Practical	Total
		Internal assessment			Avg. of two Tests				
		Test1	Test2						
ITC702	Infrastructure Security	20	20	20	80	--	--	100	

Course Objectives: Students will try :

1. To understand underlying principles of infrastructure security
2. To explore software vulnerabilities, attacks and protection mechanisms
To learn security aspects of wireless network infrastructure and protocols
3. To investigate web server vulnerabilities and their countermeasures
4. To develop policies for security management and mitigate security related risks in the organization
5. To Learn the different attacks on Open Web Applications and Web services.
6. To Learn the different security policies.

Course Outcomes: Students will be able to:

1. Understand the concept of vulnerabilities, attacks and protection mechanisms
2. Analyze and evaluate software vulnerabilities and attacks on databases and operating systems
3. Explain the need for security protocols in the context of wireless communication
4. Understand and explain various security solutions for Web and Cloud infrastructure
5. Understand, and evaluate different attacks on Open Web Applications and Web services
6. Design appropriate security policies to protect infrastructure components

Prerequisite: Computer Networks, Cryptography and Network Security

Detail Syllabus:

Sr. No.	Module	Detailed Content	Hours	CO Mapping
I	Introduction	Cyber-attacks, Vulnerabilities, Defense Strategies and Techniques, Authentication Methods- Password, Token and Biometric, Access Control Policies and Models (DAC,MAC, RBAC, ABAC, BIBA, Bell La Padula), Authentication and Access Control Services- RADIUS, TACACS, and TACACS+	6	CO1

II	Software Security	<p>Software Vulnerabilities:</p> <p>Buffer overflow, Format String, Cross-Site Scripting, SQL Injection, Malware: Viruses, Worms, Trojans, Logic Bomb, Bots, Rootkits</p> <p>Operating System Security:</p> <p>Memory and Address Protection, File Protection Mechanism, User Authentication.</p> <p>Linux and Windows: Vulnerabilities, File System Security</p> <p>Database Security:</p> <p>Database Security Requirements, Reliability and Integrity, Sensitive Data, Inference Attacks, Multilevel Database Security</p>	12	CO2
III	Wireless Security	Mobile Device Security- Security Threats, Device Security, GSM, UMTS and 4G Security, IEEE 802.11xWireless LAN Security, VPN Security, Wireless Intrusion Detection System (WIDS)	9	CO3
IV	Cloud Security	Cloud Security Risks and Countermeasures, Data Protection in Cloud, Cloud Application Security, Cloud Identity and Access Management, Cloud Security as a Service, SAML, OAuth	8	CO4
V	Web Security	Web Security Considerations, User Authentication and Session Management, Cookies, SSL, HTTPS, SSH, Privacy on Web, Web Browser Attacks, Account Harvesting, Web Bugs, Clickjacking, Cross-Site Request Forgery, Session Hijacking and Management, Phishing and Pharming Techniques, DNS Attacks, Web Service Security, Secure Electronic Transaction, Email Attacks, Web Server Security as per OWASP, Firewalls, Penetration Testing	12	CO4, CO5
VI	Information Security and Risk Management	Security Policies, Business Continuity Plan, Risk Analysis, Incident Management, Legal System and Cybercrime, Ethical Issues in Security Management.	5	CO6

Text Books:

1. Computer Security Principles and Practice, William Stallings, Sixth Edition, Pearson Education
2. Security in Computing, Charles P. Pfleeger, Fifth Edition, Pearson Education
3. Network Security and Cryptography, Bernard Menezes, Cengage Learning
4. Network Security Bible, Eric Cole, Second Edition, Wiley

Reference Books:

1. Web Application Hackers Handbook by Wiley.
2. Computer Security, Dieter Gollman, Third Edition, Wiley
3. CCNA Security Study Guide, Tim Boyle, Wiley
4. Introduction to Computer Security, Matt Bishop, Pearson.
5. Cloud Security and Privacy, Tim Mather, Subra Kumaraswamy, Shahed Latif, O'Riely

Assessment:**Internal Assessment for 20 marks:**

Consisting of **Two Compulsory Class Tests**

Approximately 40% to 50% of syllabus content must be covered in First test and remaining 40% to 50% of syllabus contents must be covered in second test.

End Semester Examination: Some guidelines for setting the question papers are as:

- Weightage of each module in end semester examination is expected to be/will be proportional to number of respective lecture hours mentioned in the syllabus.
- Question paper will comprise of total **six questions, each carrying 20 marks.**
- **Q.1** will be **compulsory** and should **cover maximum contents of the syllabus.**
- **Remaining question will be mixed in nature** (for example if Q.2 has part (a) from module 3 then part (b) will be from any other module. (Randomly selected from all the modules.)
- Total **four questions** need to be solved.

Course Code	Course Name	Credits
ILO7013	Management Information System	03

Objectives:

1. The course is blend of Management and Technical field.
2. Discuss the roles played by information technology in today's business and define various technology architectures on which information systems are built
3. Define and analyze typical functional information systems and identify how they meet the needs of the firm to deliver efficiency and competitive advantage
4. Identify the basic steps in systems development

Outcomes: Learner will be able to...

1. Explain how information systems Transform Business
2. Identify the impact information systems have on an organization
3. Describe IT infrastructure and its components and its current trends
4. Understand the principal tools and technologies for accessing information from databases to improve business performance and decision making
5. Identify the types of systems used for enterprise-wide knowledge management and how they provide value for businesses

Module	Detailed Contents	Hrs
01	Introduction To Information Systems (IS): Computer Based Information Systems, Impact of IT on organizations, Imporance of IS to Society. Organizational Strategy, Competitive Advantages and IS.	4
02	Data and Knowledge Management: Database Approach, Big Data, Data warehouse and Data Marts, Knowledge Management. Business intelligence (BI): Managers and Decision Making, BI for Data analysis and Presenting Results	7
03	Ethical issues and Privacy: Information Security. Threat to IS, and Security Controls	7
04	Social Computing (SC): Web 2.0 and 3.0, SC in business-shopping, Marketing, Operational and Analytic CRM, E-business and E-commerce – B2B B2C. Mobile commerce.	7
05	Computer Networks Wired and Wireless technology, Pervasive computing, Cloud computing model.	6
06	Information System within Organization: Transaction Processing Systems, Functional Area Information System, ERP and ERP support of Business Process. Acquiring Information Systems and Applications: Various System development life cycle models.	8

Assessment:

Internal:

Assessment consists of two tests out of which; one should be compulsory class test and the other is either a class test or assignment on live problems or course project.

End Semester Theory Examination:

Some guidelines for setting up the question paper. Minimum 80% syllabus should be covered in question papers of end semester examination. **In question paper weightage of each module will be proportional to number of respective lecture hours as mention in the syllabus.**

1. Question paper will comprise of total six question
2. All question carry equal marks
3. Questions will be mixed in nature (for example supposed Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4. Only Four question need to be solved.

REFERENCES:

1. Kelly Rainer, Brad Prince, Management Information Systems, Wiley
2. K.C. Laudon and J.P. Laudon, Management Information Systems: Managing the Digital Firm, 10th Ed., Prentice Hall, 2007.
3. D. Boddy, A. Boonstra, Managing Information Systems: Strategy and Organization, Prentice Hall, 2008

TEDxCRCE INTERNSHIP EXPO 2020

On the 29th of February, 2020 we organized the “Internship & Career Expo” hosting multiple companies at our college campus. The expo was attended by students from all branches of our college. This event further extended to other colleges for participation. The Internship & Career Expo was set to be one of CRCE’s flagship events with 15 companies from technical as well as non technical domains/

The following are the names of the companies and the domains they offered:

1. Frapp :Marketing, Campaign head, App development
2. Revolux: Digital Marketing, Content creation, Graphic designing, E-commerce Photographers, Brand management, Software Development, UI/UX Designers, Customer Marketing, Content Executive
3. JunkMinds : Technical Content Creator
4. CACR: App Development and improved monitoring systems, Website development
5. Bombay Bicycle company: Smart systems, Manufacturing, Designing, Animation, Networking, Web and App development, Project head, Team head
6. Kasa Kai Mumbai: Marketing, Operations, Web and App Development, PHP Backend
7. Cloud Counselage: Business Analyst, Full stack developer, AI, ML, Graphic Design, Blockchain, Data Science, Digital Marketing
8. Dr.Vaidyas: Business development, Digital Marketing
9. RotiBank: Events and Operations
10. The Welfare for Stray Dogs: Social Media, Web Designer, Data compilation and analysis, Photography, Research, Operations, Volunteering
11. CleverSpace: Full Stack Developer, Embedded Systems Developer
12. Jeon Beyond Creativity: Graphic Designers, Video Creators, Human Resources, Business Development, Client Servicing, Digital Marketing.
13. Anat : Program co-ordination, production, social media
14. Aarna Foundation: Social Media marketing, Video editor, Web Development, Teaching Volunteer, Social Work, Fund Raising, Distribution management, Graphic Design, Event Management
15. BlackCab: Graphic Design, Social Media account manager, Client Servicing



There were a total of 600 registrations and 274 people turned up on the day of the event.

Faculty In-charge

Prof. Prachi Patil & Prof. Monali Shetty

Salon Event

TEDxCRCE had organized The Salon Event, their first event, exclusively for their college students on the 7th of October, 2019 at 4:30PM. The Salon Event is a small version of the main event, TED talks.



The audience are all ears!

The council members had put together a well-structured plan to make the event a success. Preparations for the event began weeks before. The planning began with the speakers who were to be invited for the event. Four speakers from the domains of Business, Art and Entertainment were invited to share their life journey and inspire us engineers. From the domain of entertainment, we had the honour of Mrs. Suchitra Pillai, from the domain of art Mr. Vinod More, Mrs. Sujata Deshmukh from the domain of business and Mr. Jigar Rajpopat from the domain of music grace our event with their presence. The event started off on time with the 'Give your own TED talk' segment which was an opportunity for the students of our college to come forward and give a motivational talk on the hardships in their own life and how they overcame it.

'Give Your Own TED talk' started with Mr. Anish Dias from final year of Information Technology. He spoke about the time he almost got a drop (got cleared in re-evaluation) and had to leave his position as the editorial secretary of the Student Council, but

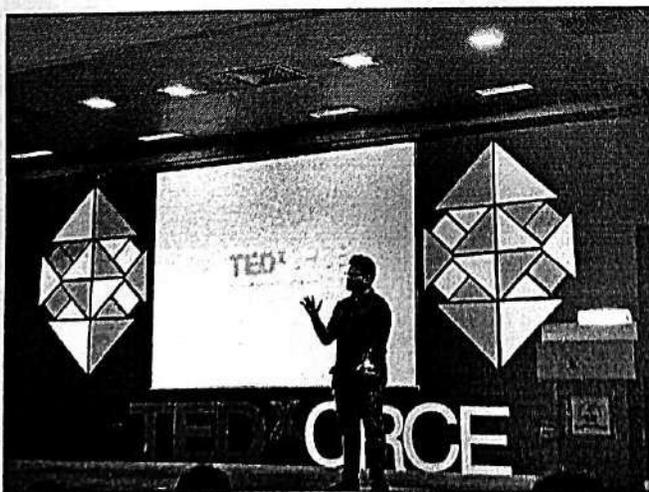
Rachit
Rachit Patel

he did not let his situation or others' thoughts get him down and he worked hard on his grades and today he has the highest paying job among his batch mates in IT.



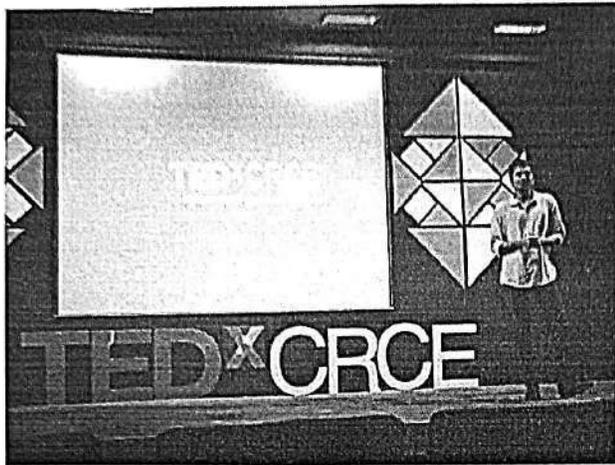
Anish Dias inspiring his juniors.

Chyankk Kumar from third year Electronics, a survivor of a major accident and a medical miracle, spoke about how he overcame FOMO (Fear of Missing Out) because he realised life is precious and nothing else in this world is worth doing that would risk his life.



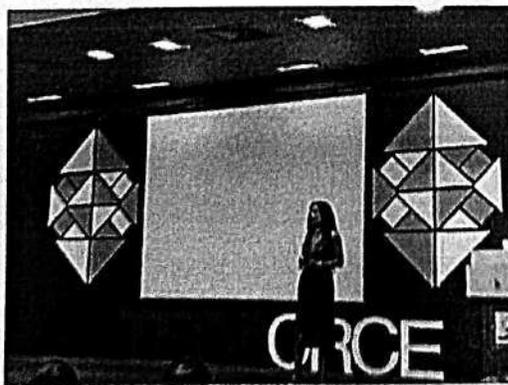
Chyankk Kumar giving his perspective of life.

Pranay Bagrecha from third year Computer Science inspired young minds to be a part of the technological advancements and narrated his journey from preparing for hackathons to acing them.



Pranay Bagrecha in all his confidence

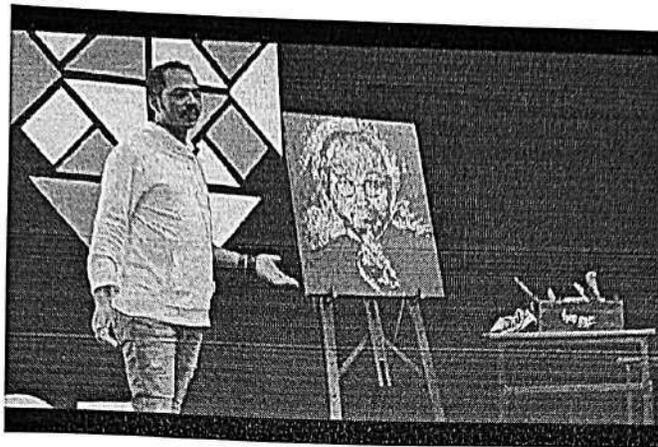
We then moved onto our special guests of the evening. The first guest to give their TED talk was Ms. Suchitra Pillai. She spoke about her life journey which began with her pursuing Engineering in our very own college, Fr. Conceicao Rodrigues College of engineering but she went on to become a renowned actress.



Suchitra Pillai talking about her engineering days.

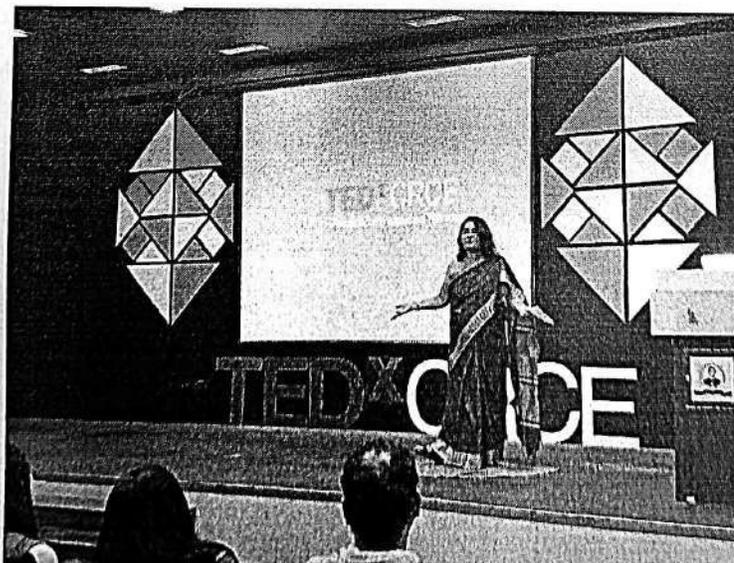
The next TED talk was given by Mr. Vinod More, in which he spoke about the importance of Art in our life, and that we should

perceive it and understand the flow of thoughts that went through the artists' mind while creating their masterpiece.



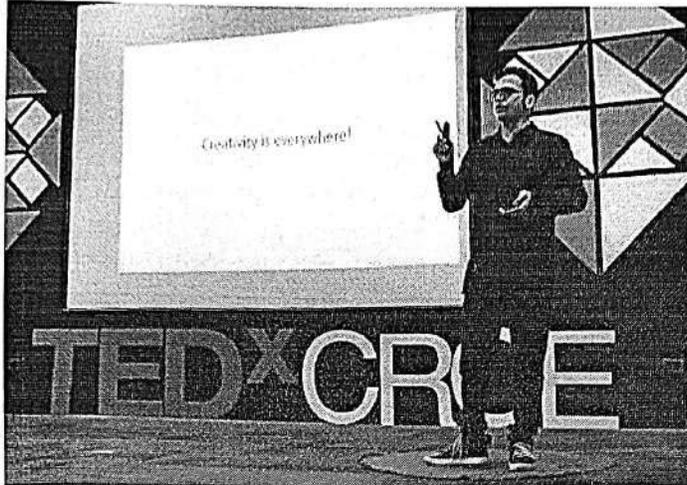
Vinod More's Masterpiece of Steve Jobs

Next we moved on to Ms. Sujata Deshmukh. She gave the students tips and gave them words of encouragement to acing HR rounds, emphasising on what it takes to become an entrepreneur.



Sujata Deshmukh encouraging the students that they can do more!

Our final guest to give the TED talk was Jigar Rajpopat. He narrated his story of how he started as a sound engineering but then he found his passion as a Dhol and Tasha performer, he also spoke about how important music is in one's life.



Jigar Rajpopat talking about his passion.

With that the main part was over, and the mementos were distributed to our dignitaries and our Co-organizer, Meera Ghaskadvi delivered the vote of thanks and ended the event. Refreshments were provided for our special guests as well as our audience.

Raehi
Raehi Patil

MShetty
Monali Shetty



CSI-CRCE organized 'Intellectual Property Rights' (IPR) session in association with IIC-CRCE

Mumbai, 23 January

The Computer Society of India council in association with the Institute Innovation Cell, CRCE had organized an informative session on Intellectual Property Rights (IPR) under the guidance of Ashwini ma'am (Faculty in-charge) on 23rd January, 2020 at Samvaad. A total of 155 students attended the session from SE and TE.



The workshop was conducted by the Professor and Dean (Research and Development) of the Department of Mechanical and Production Engineering of our college, Dr. Bhushan Patil.



Intellectual property rights refers to the general term for the assignment of property rights through patents, copyrights and trademarks. These property rights allow the holder to exercise a monopoly on the use of the item for a specified period. The session began with Dr. Bhushan Patil introducing the basic concept of IPR. He emphasized on the four types of IPR which includes patents, copyrights, trademarks and trade secrets. Students were briefed on its importance and proper management. Its protection is critical to fostering innovation since without protection of ideas, businesses and individuals would not reap full benefits of their inventions. The speaker also shared some real life examples and cases which enhanced the enthusiasm among the students who were getting really valuable and interesting information. The positive feedback from the audience marked the end of this successful session.





FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING
FR. Agnel Ashram, Bandstand, Bandra (W), Mumbai – 400 050





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HIGHER EDUCATION & STUDY ABROAD CAREER COUNSELING FOR STUDENTS OF SECOND YEAR (S.E.) & THIRD YEAR (T.E.) ENGINEERING

ON

WHAT AFTER ENGINEERING ?



Fr. Conceicao Rodrigues
College of Engineering

AGENDA :

- Courses available after Engineering
- Entrance Exam Preparation
- Profile Building (Internships, Technical Papers, Extra Curricular, etc.)
- Overview of the Application Process (SOPs, LORs, Resume, VISA, etc.)
- Scholarship Opportunities

17TH JANUARY | 11 AM - 1 PM



Collegepond

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info@collegepond.com

WHAT AFTER ENGINEERING ?

**JIMEET
SANGHAVI**
(HEAD COUNSELLOR
COLLEGE POND)



FRIDAY, 17TH JANUARY 2020

11:00 AM TO 01:00 PM IST

SAMVAAD – THE AUDITORIUM (9TH FLOOR)



REPORT ON CAREER COUNSELING SESSION

1. Overview & Details

Guest Lecture Title	Career Counseling Session – What After Engineering ?
Venue / Location	Samvaad – The Auditorium (9 th Floor) Fr. Conceicao Rodrigues College of Engineering
Activity Co-ordinator	Jayen Modi, Assistant Professor – Electronics Engineering Department Faculty Coordinator, Training & Placement Office (TPO)
Day, Date & Timings	Friday, 17 th January 2020 from 11:00 am to 01:00 pm
Intended Audience	All students from second year engineering (S.E.) & third year engineering (T.E.) across all streams / disciplines / branches
Resource Person / Guest Lecture & Affiliation	Mr. Jimeet D. Sanghavi, Head Counsellor – Collegepond Collegepond Study Abroad Career Counseling & Consulting Pvt. Ltd.
Objective / Goal of Career Counseling Session	The objective of the guest lecture was to share with students the experience of an engineering graduate who had already traversed their path – first as a student, then as an intern, later on as a fresher & now as an experienced professional. It was planned to inspire & motivate the students by having an informal discussion as to how any typical engineering student needs to be ever-ready to adapt to the changing dynamics of the industry & outside world thereby succeeding in professional life.
Contents of Guest Lecture	<ul style="list-style-type: none"> • Courses available after engineering • Entrance exam preparation • Profile building (internships, technical papers, extra-curricular etc.) • Overview of application process (SOP, LOR, Visa, Resume etc.) • Scholarship opportunities
Relevance to Programme Outcomes (PO)	<ul style="list-style-type: none"> • PO-6 :- Engineer & Society • PO-8 :- Ethics • PO-9 :- Individual & Team Work • PO-10 :- Communication • PO-11 :- Project Management & Finance • PO-12 :- Lifelong Learning

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING
Training & Placement Office (TPO)

2. Activity Pictures of Career Counseling Session – What After Engineering ?



Training & Placement Office:
Fr. CRCE, Bandra (W)



DR. (MRS.) SRIJA UNNIKRISHNAN
PRINCIPAL

Report on Higher Education & Study Abroad Career Counseling Session for Students of Second Year 3
Engineering (S.E.) & Third Year Engineering (T.E.) on Friday, 11th January 2020 by Collegepond

Fr. CRCE
e-mail

Jayen Modi Fr. CRCE <jayen.modi@fragnel.edu.in>

Message for S.E. & T.E. Students

4 messages

Rahul Kadam <rahul.collegepond@gmail.com>

14 January 2020 at 19:53

To: jayen.modi@fragnel.edu.in

Cc: Arjun Golani <arjun@collegepond.com>

Hello Mr. Jayen,

Below is the message to be shared among the SE & TE students for the seminar:

Dear Student,

Collegepond will be conducting a **Test Prep and Profile Building Workshop** for SE & TE students of Fr. Conceicao Rodrigues College of Engineering on **17th January 2020**.

The workshop will be conducted by **Mr. Jimeet Sanghavi**, one of the Head Counselors at Collegepond who has been a part of the Admission committees in U.S. Universities.

The seminar will be on the following topics:

1. Courses available after engineering.
2. Entrance Exam Preparation
3. Profile Building
4. Overview of the Application Process
5. Scholarship Opportunities

Date: 17th January 2020**Timing: 11:00 AM Onwards**Best Regards,
Collegepond

Thanks & Regards!

Rahul Kadam
Marketing Manager

Office No. 204, 2nd Floor, ML Spaces,
D. J. Rd, Opp. Old Jain Mandir, Vile Parle (W)

+91 9424044005

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WHAT AFTER ENGINEERING?

JIMEET SANGHAVI
HEAD COUNSELOR

AGENDA:

- Courses available after Engineering
- Entrance Exam Preparation
- Profile Building Strategies, Testimonial Stories
- Entrance Exams (SAT, ACT)
- Overview of the Application Process (ESOP, SOP, Interview, VISA, etc.)
- Scholarship Opportunities

17th JANUARY | 11 AM - 1 PM

Fr agnel 17 Jan (SE-TE).png
806K**Jayen Modi Fr. CRCE** <jayen.modi@fragnel.edu.in>

8 March 2021 at 12:41

To: sunil_chaudhari <sunil_chaudhari@fragnel.edu.in>, sunil_chaudhari@frcrce.ac.in, Sarika.davare@fragnel.edu.in

[Quoted text hidden]



Collegepond
Your Future, Our Priority



GRE Demo Lecture & Career Counselling Session

Wednesday, 5th February 2020
1:30 pm @ Seminar Hall on 5th Floor

NO PRIOR REGISTRATION REQUIRED



Training & Placement Office
(TPO)



Collegepond
Your Future, Our Priority

Fr. Conceicao Rodrigues College of Engineering (Fr. CRCE) in association with Collegepond Educational Consulting announces GRE / TOEFL / IELTS in-house coaching exclusively for the benefit of our students starting from

Monday, 24th February 2020

Classes to be held on every Mondays, Wednesdays & Fridays from 4:30 pm to 7:00 pm on 3rd Floor Classroom No. 306 (can be adjusted later as per the student availability / exams & preference)

For any enquiries please contact **+91-2226103135 / +91-2226195832** or drop an email to **info@collegepond.com**



REPORT ON GRE & TOEFL DEMO LECTURE SESSION

1. Overview & Details

Guest Lecture Title	GRE & TOEFL Demo Lecture Session
Venue / Location	Samvaad – The Auditorium (9 th Floor) Fr. Conceicao Rodrigues College of Engineering
Activity Co-ordinator	Jayen Modi, Assistant Professor – Electronics Engineering Department Faculty Coordinator, Training & Placement Office (TPO)
Day, Date & Timings	Wednesday, 5 th February 2020 from 01:00 pm to 04:00 pm IST
Intended Audience	All the students from second year engineering (S.E.) & third year engineering (T.E.) across all streams / disciplines / branches interested in coaching
Resource Person / Guest Lecture & Affiliation	Mr. Rahul Kadam – Marketing Manager Mr. Arjun Golani – Head, Business Development & Marketing Collegepond Study Abroad Career Counseling & Consulting Pvt. Ltd.
Objective / Goal of GRE & TOEFL Demo Lecture Session	After an extremely successful & well-appreciated session on career choices after engineering on 17 th January 2020, the training & placement office (TPO) joined hands with Collegepond to offer students on-campus coaching on GRE & TOEFL for those who wished to study abroad. Apart from training for placement, college aims to provide training for higher studies preparation under one roof – thereby assuming role of holistic education providers.
Advantages of on-campus Coaching for GRE & TOEFL	<ul style="list-style-type: none"> • Collegepond – tried & trusted brand name in education consulting • On-campus coaching in college premises itself after hours • Saves commuting & traveling time • Safe, secure & comfortable environment on-campus for all • Qualified, experienced faculty & best course materials • Small batch size for personalized attention to details
GRE & TOEFL On-campus Coaching Programme	Comprehensive 50 hours training programme was proposed by Collegepond to be conducted on college premises. However due to subsequent COVID-19 pandemic & lockdown, Collegepond shifted the coaching online for students from the comfort & safety of their homes. Thereafter all communications & correspondence was solely between Collegepond & students only.

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING
Training & Placement Office (TPO)



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Rahul Kadam
Marketing Manager

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Arjun Golani
Head, Business Development & Marketing

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Training & Placement Office:
Fr. CRCE, Bandra (W).




DR. (MRS.) SRIJA UNNIKISHNAN
PRINCIPAL



Training & Placement Office (TPO)



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For any overview & preliminary enquiry kindly contact Prof. Jayen Modi on jayen.modi@frcrce.ac.in / +91-9930314033 or visit Lab No. 310 on 3rd Floor

For registration & other details, kindly contact Collegepond on:-

Office No. 204, 2nd Floor, ML Spaces, Above Bank of Baroda, Opp. Old Jain Mandir, Dashrathlal Joshi Road, Vile Parle (W), Mumbai – 400056.

022-26103135 / info@collegepond.com



Training & Placement Office (TPO)



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Benefits to students by in-house coaching in GRE / TOEFL / IELTS :-

- ✓ **Collegepond** – Tried & trusted brand name in educational consulting with over **18 years** & **15,000+** students trained & secured admissions abroad
- ✓ Coaching to be held in **college premises itself**, after college hours so as to ensure **no conflict with regular academic schedule**
- ✓ **Saves commuting & traveling time** so all the students can focus more on course preparation & studies; **career counseling & guidance provided too**
- ✓ **In-house** coaching ensures a **safe, secure & comfortable** environment
- ✓ **State-of-the-art** course materials & vastly experienced faculty
- ✓ **Highly personalized attention** to each & every student (**small batch size**)



Jayen Modi Fr. CRCE <jayen.modi@fragnel.edu.in>

GRE Lecture Schedule | Collegepond | Fr. Conceicao Rodrigues College of Engineering

4 messages

Arjun Golani <arjun@collegepond.com>

18 February 2020 at 15:41

To: "TPO - Fr. CRCE, Bandra" <tpo@fragnel.edu.in>

Cc: jorapur CRCE <jorapur@fragnel.edu.in>, "Jayen Modi Fr. CRCE" <jayen.modi@fragnel.edu.in>, jorapur@frcrce.ac.in, srija@fragnel.edu.in, hodprod@fragnel.edu.in, director@fragnel.edu.in, Suraj Bajaj <suraj@collegepond.com>, Jimeet Sanghavi <jimeet@collegepond.com>, Mala Shroff <mala@collegepond.com>

Respected Sir & Ma'am,

As per the discussion on Friday at the college, we would be starting the GRE lectures on campus from 24th February (Monday). The venue for the same will be classroom no 309.

Please find the lecture schedule and tentative timings for your perusal:

Date	Day	Venue	Topics	Lecture	Timings
24th Feb	Mon	Gre - Fr. C	Number System	Maths	4.30 pm to 7.00 pm
26th feb	Wed	Gre - Fr. C	Percentage, P & L, & Interest	Maths	4.30 pm to 7.00 pm
28th Feb	Fri	Gre - Fr. C	Etymology & Vocabulary	Verbal	4.30 pm to 7.00 pm
2nd March	Mon	Gre - Fr. C	Text Completion	Verbal	4.30 pm to 7.00 pm
4th March	Wed	Gre - Fr. C	Average, Ratios & Mixtures	Maths	4.30 pm to 7.00 pm
6th March	Fri	Gre - Fr. C	TSD & Work Problems	Maths	4.30 pm to 7.00 pm
9th March	Mon	Gre - Fr. C	Algebra & Function	Maths	4.30 pm to 7.00 pm
11th March	Wed	Gre - Fr. C	Reading Comprehension - 1	Verbal	4.30 pm to 7.00 pm
13th March	Fri	Gre - Fr. C	Reading Comprehension - 2	Verbal	4.30 pm to 7.00 pm
16th March	Mon	Gre - Fr. C	2D Geometry	Maths	4.30 pm to 7.00 pm
18th March	Wed	Gre - Fr. C	3D & Coordinate Geometry	Maths	4.30 pm to 7.00 pm
20th March	Fri	Gre - Fr. C	Statistics	Maths	4.30 pm to 7.00 pm
23rd March	Mon	Gre - Fr. C	Critical Reasoning	Verbal	4.30 pm to 7.00 pm
25th March	Wed	Gre - Fr. C	Sentence Equivalence	Verbal	4.30 pm to 7.00 pm
27th March	Fri	Gre - Fr. C	Permutation & Combination	Maths	4.30 pm to 7.00 pm
30th March	Mon	Gre - Fr. C	Probability	Maths	4.30 pm to 7.00 pm
1st April	Wed	Gre - Fr. C	Awa - Issue	Verbal	4.30 pm to 7.00 pm
3rd April	Fri	Gre - Fr. C	Awa - Argument	Verbal	4.30 pm to 7.00 pm
6th April	Mon	Gre - Fr. C	Data Interpretation	Maths	4.30 pm to 7.00 pm
				Total No of Hours	19 * 2.5 = 47.5 hours

The lecture schedule and timings can be adjusted later as per the student availability / exams and preference.

The total no. of hours for the coaching will be 47.5. As per our discussion earlier the cost per hour will be INR 400. Would request the accounts department to raise an invoice accordingly for us to make the transfer.

Tentatively we have received a positive response from 12 students to start off with immediately. More are expected to join in the coming week as per their feedback on call.

Please find the below the names of the interested students:

Name	Mobile No
Mayank Tanna	9920556191
Aniruddha Kale	9619483873
Vishwas Lad	9172765668
Kaushil Parekh	7021223916
Felice Samji	9029922119
Heena Shah	9821433299
Harsh Singhanian	9702078888
Jaini Shah	8080296759

Anjana Singh	8692002263
Aaron Domingo	8850465403
Ronak Oza	9702959710
Atharva Haldaukar	9820045135

Please do let us know in case of any other queries.

Good day!



Jayen Modi Fr. CRCE <jayen.modi@fragnel.edu.in> 8 March 2021 at 12:44
 To: sunil chaudhari <sunil_chaudhari@fragnel.edu.in>, sunil_chaudhari@frcrce.ac.in, Sarika.davare@fragnel.edu.in, Sarika.davare@frcrce.ac.in

[Quoted text hidden]

Jayen Modi Fr. CRCE <jayen.modi@fragnel.edu.in> 9 March 2021 at 11:49
 To: ketaki.joshi@frcrce.ac.in, Ketaki Joshi CRCE <ketaki.joshi@fragnel.edu.in>

----- Forwarded message -----

From: **Arjun Golani** <arjun@collegepond.com>
 Date: Tue, 18 Feb 2020 at 15:41
 Subject: GRE Lecture Schedule | Collegepond | Fr. Conceicao Rodrigues College of Engineering
 To: TPO - Fr. CRCE, Bandra <tpo@fragnel.edu.in>
 Cc: jorapur CRCE <jorapur@fragnel.edu.in>, Jayen Modi Fr. CRCE <jayen.modi@fragnel.edu.in>, <jorapur@frcrce.ac.in>, <srija@fragnel.edu.in>, <hodprod@fragnel.edu.in>, <director@fragnel.edu.in>, Suraj Bajaj <suraj@collegepond.com>, Jimeet Sanghavi <jimeet@collegepond.com>, Mala Shroff <mala@collegepond.com>

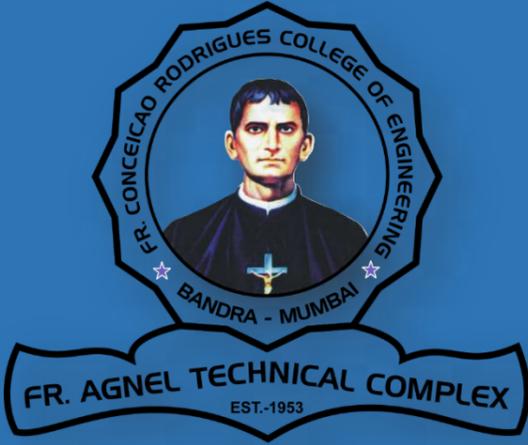
[Quoted text hidden]

Jayen Modi Fr. CRCE <jayen.modi@fragnel.edu.in> 12 March 2021 at 19:17
 To: khanore CRCE <khanore@fragnel.edu.in>, khanore@frcrce.ac.in

----- Forwarded message -----

From: **Arjun Golani** <arjun@collegepond.com>
 Date: Tue, 18 Feb 2020 at 15:41
 Subject: GRE Lecture Schedule | Collegepond | Fr. Conceicao Rodrigues College of Engineering
 To: TPO - Fr. CRCE, Bandra <tpo@fragnel.edu.in>
 Cc: jorapur CRCE <jorapur@fragnel.edu.in>, Jayen Modi Fr. CRCE <jayen.modi@fragnel.edu.in>, <jorapur@frcrce.ac.in>, <srija@fragnel.edu.in>, <hodprod@fragnel.edu.in>, <director@fragnel.edu.in>, Suraj Bajaj <suraj@collegepond.com>, Jimeet Sanghavi <jimeet@collegepond.com>, Mala Shroff <mala@collegepond.com>

[Quoted text hidden]



ONE WEEK
(24th – 28th May 2020)
STUDENT DEVELOPMENT
PROGRAMME ON
GROOMING FOR
PLACEMENTS
BY INDUSTRY
EXPERTS

ORGANIZED BY

DEPARTMENT OF COMPUTER ENGINEERING

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING

BANDSTAND, BANDRA(W)

PATRONS

Rev. Fr. Peter Dsouza, Local Superior

Rev. Fr. Valerian Dsouza, Director

Dr. Srija Unnikrishnan, Principal

PROGRAM COMMITTEE:

Coordinator's:

Mr. Sunil Chaudhari – Contact: 9987112768

Mrs. Ashwini Pansare – Contact: 9821530672

Mrs. Monali Shetty – Contact: 7276745903

CONVENER

Dr. B.S. Daga, HOD (Computers)

Mr. Mahesh Sharma, TPO

Co-Coordinator's

Mr. Mahendra Mehra – Design & Technology

Mrs. Supriya Kamoji – PR and Registration

Mrs. Dipali Koshti – Certificate & Feedback



Scan QR
for Registrations
or Click me

REGISTER HERE



**TECHNOLOGY
PARTNERS**

This Program Is Free Of Cost.

Registration End Date: 22nd May 2020.

Registrations strictly only for CRCE Students.

E-Certificates will be provided at the end of SDP.

Session details and any communication will be mailed on the registered Email-ids after the registration process.



compscrce@gmail.com

About the Student Development Programme

CRCE has been successful in maintaining its high placement statistics over the years and the fact that our students bear the recession blues with record breaking placements itself is a testimony to our quality. Our ingenious alumni have set new standards in the corporate world through their estimable contributions.

With the coronavirus pandemic wreaking havoc on businesses, Engineering students are staring at an uncertain future as companies are showing little interest in college recruitment, while those already hired are either seeing offers rescinded or deferred. With companies putting their recruitment drives on hold, students in India are staring at a tough year ahead.

We at CRCE are committed to providing the best of training to our students and will try to defeat the COVID19 situation and ensure healthy placement drives. We need our students to be part of this proactive step. This SDP aims at grooming our upcoming batch of students to be job ready for placements in IT/Software and other core companies by making their computer science and other core fundamentals strong with emphasis on improving coding & problem-solving skills and enriching their skill set.

We have invited industry players on board for this programme, who are doing well in their respective careers. These speakers will enlighten you about the industry perspective of the placement process and how they assess a potential candidate for the job. Our brilliant alumni's will share their interview experiences and provide tips on do's and don'ts of the interview process. There will be sessions by experts on cutting edge technologies and trending programming languages.

We are sure that after attending this Student Development Programme, students will notice a huge improvement in their confidence and will have a clearer picture of the interview process, and ability to crack the same, making you all ready for the challenges ahead.

Programme Content

1. OOPS concepts for interview preparation.
2. Competitive Coding Interview Questions.
3. Company specific interview tips.
4. Do's and Don'ts of the Interview Process.
5. Story from the other side: How an interviewer assesses a candidate.
6. Group Discussion: Tips and tricks.
7. Cloud Computing services adaption in Projects.
8. Golang For Microservices and its applications.
9. Angular Js and JDBC integration with demo application.
10. Jenkins tool for Continuous code Integration.
11. Web application, Infrastructure deployment using Apache, Tomcat & IIS Web Server.
12. How to prepare for Linux based interview questions.



Gaurav Sen

Software Engineer,
UBER and
YouTuber



Karan Gohil

Cloud Solutions
Engineer at Google



Swapnil Khetan

Manager - Procurement & Supply
Chain Practice at
Michael Page



Jennifer Reuben

DevOps Engineer at
BNP Paribas



Melwyn Saldanha

Software Engineer at
People Interactive



Gaurav Shinde

Software Engineer, JP
Morgan Chase & Co



Edwin Clement

Software Engineer
at BrowserStack

**INVITED
SPEAKERS**



Mahendra Mehra
Assistant Professor
Certified Ethical Hacker
CRCE



Akash Palghadmal
Analytical
Development Analyst
at MSCI Inc.



Ashley Lobo
Programmer
Final Year Student
Winner of SIH 2019

Closing Report of Student Development Program on “Grooming for Placements By Industry Experts”

Date(s) : 24th May 2020 – 28th May 2020

Department : Computer Engineering

Coordinators

Prof. Sunil Chaudhari

Prof. Ashwini Pansare

Prof. Monali Shetty

Co-Coordiators

Prof. Mahendra Mehra

Prof. Supriya Kamoji

Prof. Dipali Koshti

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- 10. Presentations in form of digital content.**

1. Objective of SDP

Computer Engineering department of Fr. Conceicao Rodriguez college of Engineering had organised a first ever online five days Student Development program on "**Grooming for placements by Industry Experts**" from 24th to 28th May, 2020. The objective of the workshop was to groom upcoming batch of students from all branches of our college to be job ready for placements in IT/Software and other core industries by making their computer science and other core fundamentals strong by emphasizing on improving coding ,problem-solving skills and enriching their skill set. The main highlight of the program was our resource persons who were experts from reputed industries excelled in their chosen career. The Experts enlightened students about the industry perspective of selecting potential candidates , guided them about the skills needed and gave them the roadmap by providing resources and motivation to get a better placement opportunity in dream and superdream companies. Our brilliant alumni shared their interview experiences and provided tips on do's and don't of the interview process. Students were made aware of cutting edge technologies and trending programming languages through sessions on Jenkins,golang and angular js.

2. SDP Contents

The following topics were covered in the course

1. Interview Preparation checklist
2. OOPS concepts for interview preparation.
3. How to prepare Database Interview Questions
4. Competitive Coding Interview Questions.
5. Story from the other side: How an interviewer assesses a candidate
6. How to prepare for Linux based interview questions and learning Linux skills from industry perspective
7. Golang For Microservices and its applications
8. Angular Js and JDBC integration with demo application.
9. Jenkins tool for Continuous code Integration
10. preparation for HR interview rounds
11. Importance of System Design Skills

3. Participant's Profile

428 students from all branches of FR. CRCE ranging from first year to fourth year participated and benefited from the program.

4 : Day wise flow of the Program

Welcome Address:

Day 1 began with a welcome address by prof. Mahendra Mehra , assistant professor, computer engineering department. He welcomed all the Student participants and resource person of the first session, Mr. Swapnil Khetan followed by his talk.

Course details:

Day 1 – 24/5/2020

Session 1: How an Interviewer assess a potential candidate

First session conducted on 24/5/2020 by Mr. Swapnil Khetan, Michel Page, Manager – Procurement and Supply Chain. He explained that mindset training is also important along with technical and soft skill training to improve employability. He shared his views on the importance of certification to grow a skill set which will help in securing a job after COVID situation. Students had many queries regarding interviews and technical skills which were well addressed by Mr. Swapnil .

Session 2: Interview Preparation Checklist

Second session of the day was conducted by Mr. Edwin Clement, Software Engineer, BrowserStack. His talk was majorly focused on "what and how ". What students should do in each year of Engineering journey and how they should do it. He elaborated on tips and tricks to prepare for a technical interview. He mentioned how to improve programming skills, knowledge of which programming language is must and the timeline students should follow from First year to Final year. He motivated students to grab more internships and the sources to acquire the same. Further his talk was about how useful alumni guidance is , how valuable Hackathons are, his own Hackathon experience etc. He inspired students to

excel in competitive coding, mentioned the importance of Github profile and suggested students to get freelance jobs online.

Session 3: Coding Skills Enhancement

Third session of the day started at 2.00 pm. It was conducted by Mr. Karan Gohil, Cloud Solutions Engineer, Google. He started his presentation by mentioning what qualities an individual requires to be a good programmer. He covered a few questions which are asked in coding rounds. Keeping in mind the necessity of cloud computing knowledge he briefed students about cloud architect, concepts and terminologies related to this field. He even discussed his experience of progressing from a developer at TCS to cloud solution engineer at Google.

Day 2 – 25/5/2020

Session 1: Linux based Interview Questions

Second day of the program i.e. 25/5/2020, started with a session by Mr. Mahendra Mehara, PhD Scholar, Assistant Professor at Fr. CRCE, on topic Linux based interview questions at 9:30. He highlighted the importance of learning Linux OS, career prospects in Linux administration and how to prepare for Linux based interview questions.

Session 2: DevOps Tools - Jenkins

Second session of the day was conducted by Ms. Jenifer Reuben, DevOps Engineer, BNP Paribas on the topic DevOps tools - Jenkins at 12 pm. She introduced the need of Devops practice in software development and demonstrated a small application using the build pipeline in Jenkins.

Session 3: Database Interview Questions

Third session of the day began at 2.00 pm and was conducted by Mr. Leon D'souza, Software Developer, MSCI Inc. on how to prepare Database interview questions. He discussed interview questions based on SQL, how to approach in solving those questions, and the difference between SQL and NoSQL. The session covered wide questions asked by an interviewer in the DBMS domain.

Day 3 – 26/5/2020

Session 1: Object Oriented Programming Concepts

The third day of the program began at 9:30am with a session by Mr. Aakash Palghadmal, Analytical Development Analyst, MSCI Inc. His talk was a smooth ride for participants to gain insights of object oriented programming language features. He began with a difference between procedure oriented and Object oriented Programming language followed by detailed explanation of each feature of oop language feature. He later demonstrated various interview questions which are asked in technical rounds of companies on these topics along with understanding of questions and answers. participants could clear many of their doubts through the question answer section at the end of his talk.

Session 2: HR Interview Questions

Second session of the day was conducted by Dr. Khushbu Trehan, Professor and Employability Skills Trainer. She started her discussion with commonly asked questions in HR rounds of placements. Around 10-12 questions were discussed along with tips on do's and don't while answering them. She had an impactful session demonstrating equal importance of HR interview along with technical interview. She even groomed students about dress code and soft skills to be used during the process.

Day 4 – 27/5/2020

Session 1: Angular, JDBC Integration

On the fourth day, Mr. Gaurav Shinde, Software Engineer, JPMorgan Chase & Co. delivered session on Angular, JDBC Integration. He covered basic JDBC architecture, angular JS, spring framework, spring JDBC. He guided students about frameworks to be used at beginner level for front end and back end.

Session 2: Golang for Microservices

Second session conducted by Mr. Melwyn Saldanha, Software Engineer, People Interactive. Melwyn gave an overview of the syntax and semantics of Go Language and its comparison with the other high level programming languages like python, java. Finally he emphasized the use of go lang in the world of Microservices and shared some learning material with respect to the same.

Day 5 – 28/5/2020

Session 1: System Design

The final day of the program started with the session by Mr. Gaurav Sen, Software Engineer and Youtuber. His talk was based on system design. He explained to the participants how algorithms and system design can be a powerful combination by taking a case study of online teaching platform " goto meeting". He even motivated students to give emphasis on learning your basics strongly to develop any big problem statement with an ease.

Session 2:Competitive Coding(Hands-On)

Second and last session of the program was conducted by Mr. Ashley Lobo, programmer, Hackathon winner, Final year student of Fr. CRCE. He introduced students about competitive coding platforms which can be used to practice and improve coding skills. He discussed coding problems along with concepts like basics of coding, problem analysis, Ad-Hoc problems and complete search, Greedy and Dynamic programming design strategy. Main focus of his talk was to make students aware so that more and more students use competitive coding platforms to improve their coding ability.

Closing ceremony:

After the five days of technical discussions the program came to an end by vote of thanks by Mrs. Ashwini Pansare. She thanked the college management for their encouragement and support for organizing the SDP program. She also thanked all the resource persons who contributed their time and expertise in making the program successful.

The program received an overwhelming response by 428 participants . All participants were requested to submit their valuable feedback. Quiz was organised for all the participants on the final day of the program . Participants who successfully completed the quiz were awarded with an E-certificate. were distributed to participants based on a quiz. Participants gave positive feedback about the program and showed their willingness to participate again in similar kinds of programs to be conducted in the near future by college.

The program concluded by giving a clear picture of interview processes to all the participants, confidence to face it and ability to crack it and made them ready for the challenges ahead.

Future Perspectives:

The Department of Computer Engineering and Placement Cell is looking forward to organizing future workshops for overall student development on topics such as how to improve communication skills and soft skills, guidance from alumni on the checklist of things needed for higher studies and company specific placement guidance.

5. List of Distinguished Speakers

Mr. Swapnil Khetan Michael Page, Manger – Procurement & Supply Chain	Mr. Edwin Clement Software Engineer, BrowserStack
Mr. Karan Gohil Cloud Solutions Engineer, Google	Mr. Mahendra Mehra PhD Scholar, Assistant Professor at Fr. CRCE, Certified Ethical Hacker, EC Council. Oracle Certified Cloud foundation Associate. Star Certified (CLOUD, DevOps, Ethical Hacking) Trainer
Ms. Jenifer Reuben DevOps Engineer, BNP Paribas	Mr. Leon D'souza Software Developer, MSCI Inc.
Mr. Aakash Palghadmal, Analytical Development Analyst, MSCI Inc.	Mr. Gaurav Shinde Software Engineer, JPMorgan Chase & Co.
Dr. Khushbu Trehan Professor and Employability Skills Trainer. Dale Carnegie Certified Trainer. British Council Certified IELTS Trainer	Mr. Melwyn Saldanha Software Engineer, People Interactive
Mr. Gaurav Sen Software Engineer and YouTuber	Mr. Ashley Lobo Programmer, Final Year Student, SIH 2019 Winner, ACM ICPC 2019 Regional Finalist

6. List of Participants

Detailed list of participants is attached with the report.

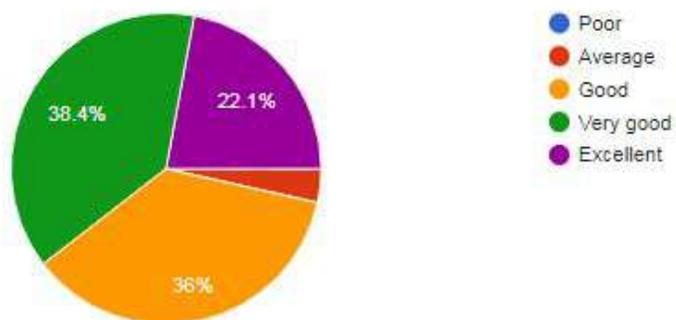
7. Feedback by the Participants

The following feedback was received from the participants:

- 1. 96% of the participants felt that the coverage of the topic was good.**

How will you rate the coverage of topics of 5 days

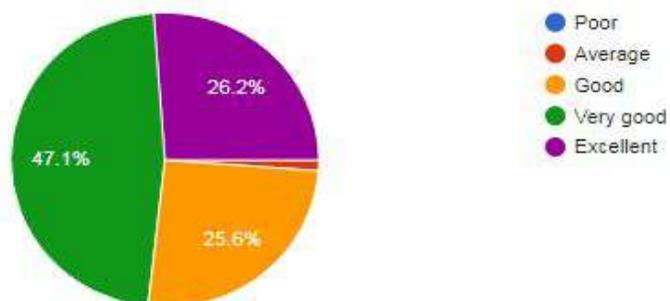
172 responses



- 2. 98% participants were of the opinion that the knowledge and presentation of all the speakers was very good.**

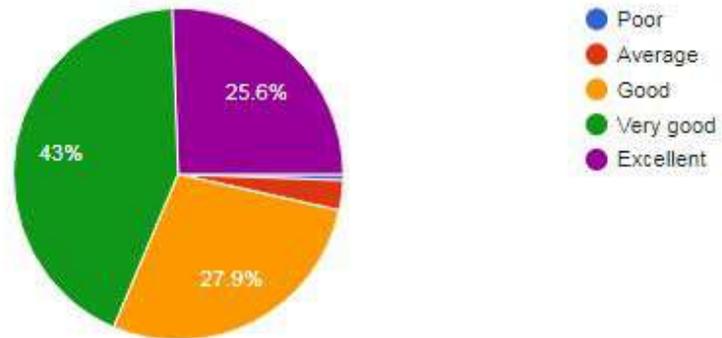
How will you rate the knowledge and presentation skill of all speakers

172 responses



How will u rate the conduct of whole program

172 responses



3. Participants felt that such SDP should be arranged regularly.

Will you be interested in attending any such similar programme in the future?

Anonymous Poll



142 votes

3:15 PM

8. Results of Quiz

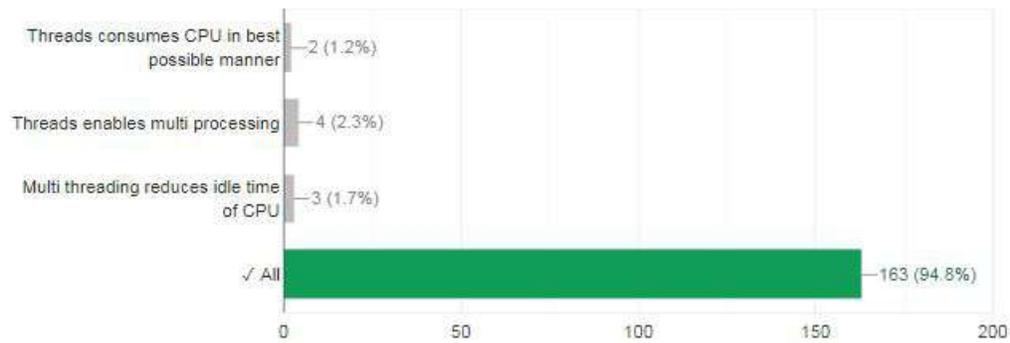


Total points distribution



What is true about threads?

163 / 172 correct responses



9. Photo Gallery

The screenshot displays a GoToWebinar session. At the top, a video feed shows a participant named Swapnil Khelani. Below the video, a 'Questions' window is open, displaying a table of questions and answers. The table includes columns for Question, Asker, Rec'd, Answerer, and Answer. The current question is: 'What advantage can we get in jobs by doing a masters in the technical field only?'. The interface also shows a participant list on the right with 263 attendees and a search bar for 'edwin'. The GoToWebinar logo and session ID are visible at the bottom right.

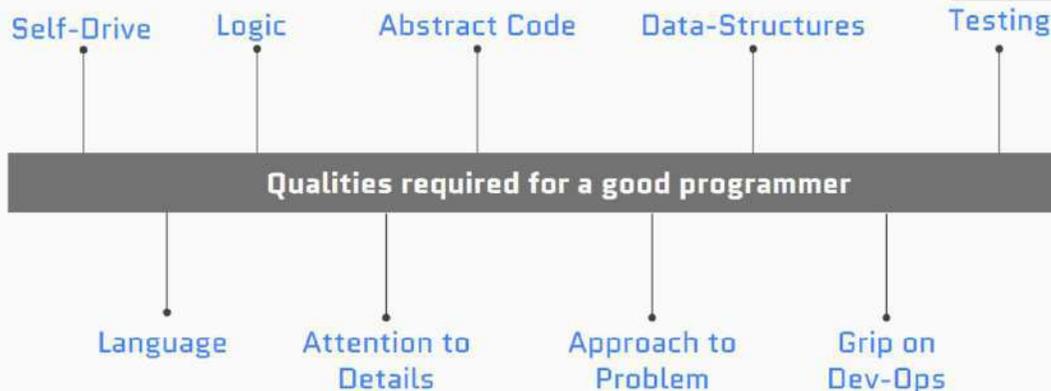
Question	Asker	Rec'd	Answerer	Answer
social media accounts, any of's bad...	Mehant Terme	11:29		
Does being in a technical team have an impact on the interview?	Abhishek Reddy	11:31		
How important is a internship in an interview?	Ravi Prasad Paul	11:32		
What advantage can we get in jobs by doing a masters in the technical...	Sho Agrawal	11:34		
Is MBA a good option to get a better job which is not in the technical field?	Neha	11:35		
Is it necessary to have experience before doing your masters?	Sensartha Manojkumar	11:36		

First Year

- Go back and refresh on C. No need to master it. But understand the basics of coding (Variables, Data types, Arrays, Looping, Conditionals, Functions)
- If you like challenges, go and check out <https://www.hackerrank.com/domains/cpp> for some nice intro to object oriented programming (C++). Java also works.
- Interact with seniors about their projects and extra curricular activities.
- Enjoy College life, best 4 years for a while. (circa. before coronavirus)

The screenshot shows a GoToWebinar control panel. At the top, there are options for 'File', 'Options', 'View', and 'Help'. Below that, there are sections for 'Sharing' (Webcam, Dashboard), 'Attendees' (252 of 1001 max), and 'Staff' (6). A list of staff members is visible, including Edvin Clement (Presenter), Mahendra Mishra (Organizer), SUNIT CHAUDHARI (Organizer, Me), Supriya Kanoj (Presenter), and Shapne Khatkar (Presenter). There is also a 'Polls' section (0/0) and a 'Questions' section. A question is displayed: 'What would be of more weightage, Internship or good projects ?? I haven't...'. The interface includes buttons for 'Send Privately', 'Send to All', 'Chat', and 'Audio'. At the bottom, it identifies the webinar as 'Fr.C.R.C.E. Computer Engineering Departmen...' with Webinar ID 610-644-367 and a recording status indicator.

What does it take to be good programmer



This screenshot is identical to the one above, showing the GoToWebinar control panel with the same list of attendees, poll status, and question.

Coding Interview Quest

- Function to reverse a linked-list in place
- Program to validate an IP Address
- Program to rotate a square matrix by 90 degrees

What is Cloud Computing ?

The screenshot shows a Zoom meeting interface. On the left, a presentation slide titled "Encapsulation:" is displayed. The slide content includes:

- Encapsulation:**
- This is called **Tight Cohesion**
- Related data and methods that manipulate that data or use that data for computation should be placed together i.e. they should be closely bound.
- Code snippet for a `Student` class:

```
class Student {  
    int id;  
    String name;  
    Double pointer;  
    String year;  
    //whatever methods required  
}
```
- A callout box with the acronym **PEEP** and the phrase **Place for Everything, Everything in its place**.
- Copyright: Akash Palghadmal (Use for education Purpose Only)

On the right, a code editor window shows a constructor example:

```
ed constructor  
-x){  
    print x;  
}  
  
= new A(10);
```

A green callout box points to the constructor code with the text: **No return types for constructor**.

The Zoom interface also shows a participant list on the right with names like Veda Dhatra, Warren Fernandes, and yogendra sathavkar. At the bottom, the Windows taskbar is visible with the search bar and system tray.

The screenshot shows a Zoom meeting window. On the left, a slide titled "OOPS Languages (JAVA, Python, C++, C#)" is displayed. The slide features a diagram with four pillars under a roof-like structure, labeled ENCAPSULATION, INHERITANCE, POLYMORPHISM, and ABSTRACTION. Below the diagram, it says "Copyright: Akash Palghadmal (Use for education Purpose Only)".

On the right, the GoToWebinar interface is visible, showing a list of attendees (181) and a chat window. The chat window contains a welcome message: "Welcome to One week Faculty Development Program (FDP) on 'Current Trends and Future Technologies in Computing'".

The screenshot shows a Zoom meeting window. On the left, a slide titled "Basic Model" is displayed. The slide features a diagram with four pillars under a roof-like structure, labeled User, Angular Web App, Controller, and Task Service. Below the diagram, it says "Copyright: Akash Palghadmal (Use for education Purpose Only)".

On the right, the GoToWebinar interface is visible, showing a list of attendees (149) and a chat window. The chat window contains a message: "Total Experience - 3 years
- Tech Stack
* Backend - Java / Spring Framework
* Frontend - Angular, Typescript, Javascript, HTML, CSS
* Database - Oracle, Mysql
I moonlight as
- Freelancer/ mobile app developer
Developed applications for mobile using
- Android
- Ionic
- Flutter
Also have some experience with Google Firebase
- Part of CSR in JPMC
Developed applications in Laravel PHP for non profit orga as a part of Force for Good (Code for Good)
- Teacher (Teaching primitive languages like C, Java and Javascript) to school students
- Traveller, Foodie and always curious about history/culture

This screenshot shows a Zoom meeting interface. On the left, a code editor displays Java code for a REST API. The code includes annotations like `@RestController`, `@RequestMapping`, and `@GetMapping`. The main part of the screen shows a chat window with the following messages:

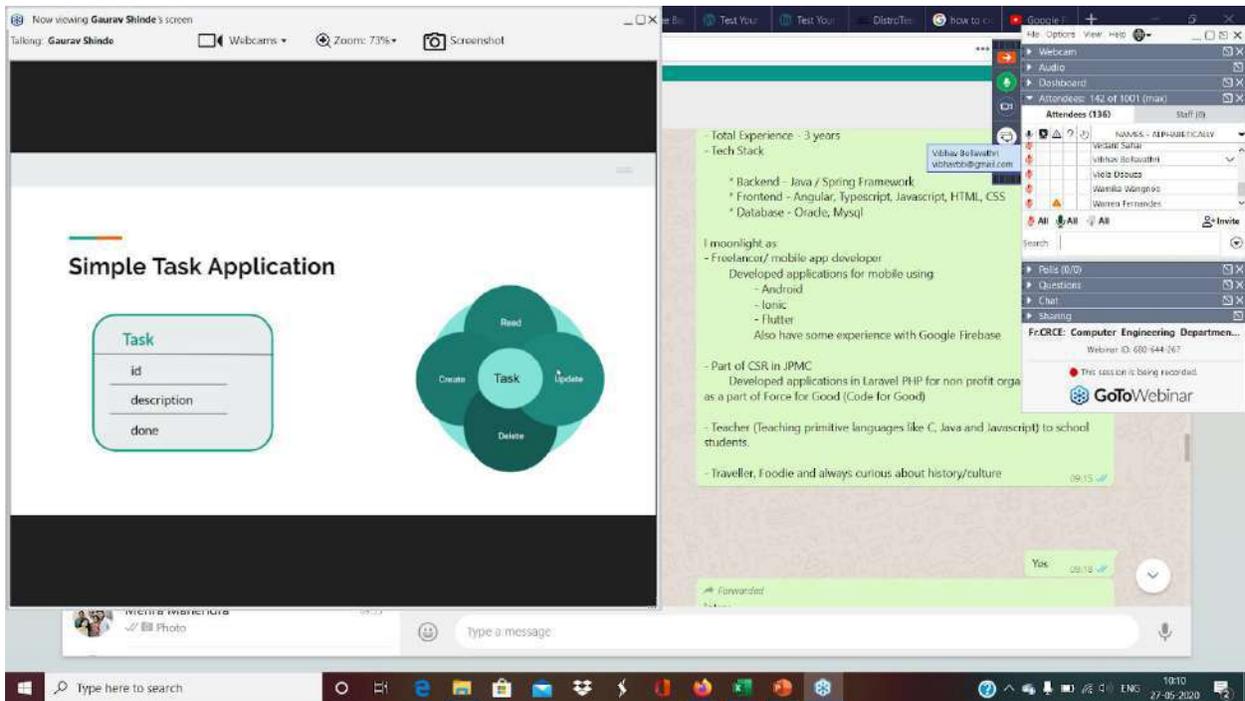
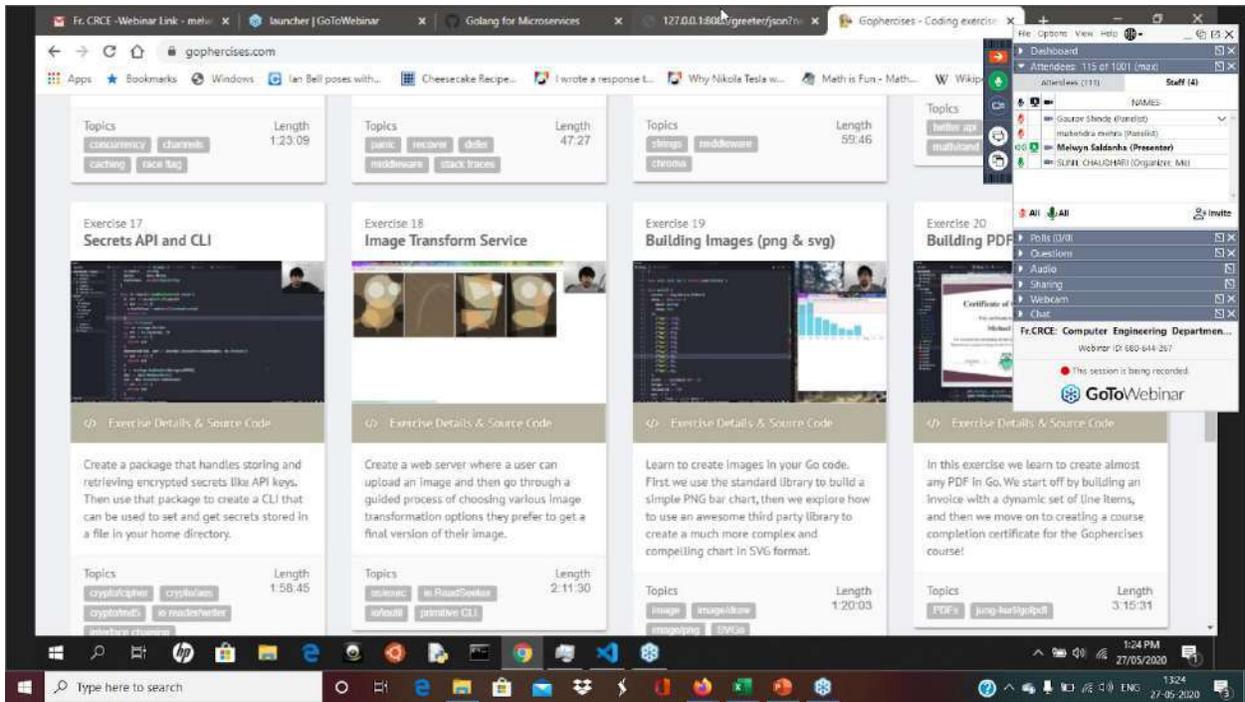
- covered in session
- today
- Should I create a poll asking whether they are understanding
- Okay
- Not required

The Zoom control panel on the right shows 146 attendees and a list of staff members including NAINAKS, WEISS, and others. The meeting title is "Fr.CRC: Computer Engineering Department...".

This screenshot shows a Zoom meeting interface. On the left, a code editor displays Java code for a REST API, similar to the first screenshot. The main part of the screen shows a chat window with the following message:

- begin automatically in listen-only mode. Get expert answers. download content.

The Zoom control panel on the right shows 136 attendees and a list of staff members including Gaurav Shinde (Presenter), Mohyn Sadarkia (Panelist), and others. The meeting title is "Fr.CRC: Computer Engineering Department...".



The screenshot shows a Zoom meeting with a whiteboard titled "System Design". The diagram includes the following elements:

- System Design**: A central box with arrows pointing to various components.
- PWS**: A box with a plus sign and a circle.
- Tinder**: A box representing a service.
- Lock**: A box representing a service.
- AWS**: A box representing a cloud provider.
- 32 GB** and **54 GB**: Memory specifications.
- Horizontal Scaling**: A box with a plus sign and a circle.
- Blob**: A box representing a storage service.

The Zoom sidebar on the right shows a list of attendees: Gaurav Sen (Organizer, Present) and VINI CHAUDHARI (Organizer, Mute). A question is visible: "While designing the solution in interview what all things should we mention in...".

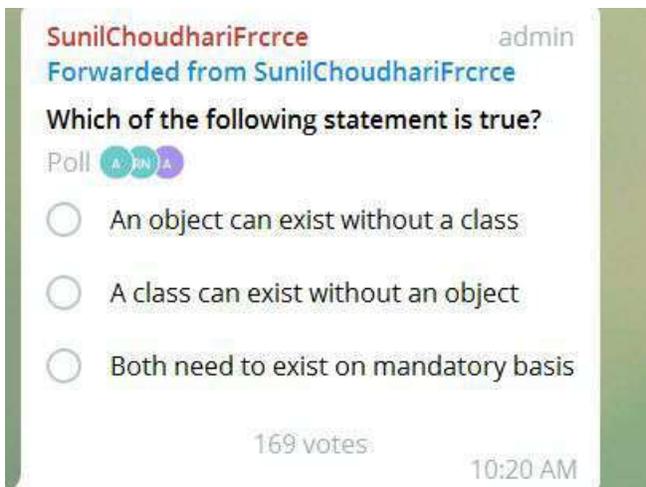
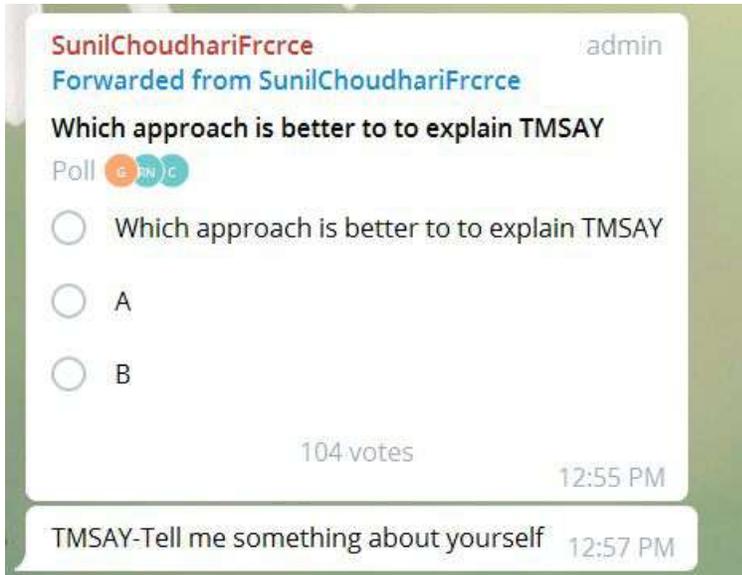
The screenshot shows a Zoom meeting with a whiteboard titled "Response Times" and "Performance Testing". The diagram includes the following elements:

- Response Times**: A box with a plus sign and a circle.
- Performance Testing**: A box with a plus sign and a circle.
- Unit Testing**: A box with a checkmark and a circle.
- Load Testing**: A box with a plus sign and a circle.
- SLA**: A box with "99.99%" and "1000".
- 99.99%**: A percentage value.
- 100%**: A percentage value.
- 0.01%**: A percentage value.

The Zoom sidebar on the right shows a list of attendees: Gaurav Sen (Organizer, Present) and VINI CHAUDHARI (Organizer, Mute). A question is visible: "While designing the solution in interview what all things should we mention in...".

Polls Taken on Telegram Group:

Telegram was used as a medium to interact with the students for polling. screenshots of few sample polls are included below for reference.



10.Presentations of all sessions are available in form of video links of all sessions as given below:

SDP Grooming for placements By Industry Experts Computer Engineering Department and Training & Placement Cell Fr.C.R.C.E.

**FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING,
BANDRA(W) DEPARTMENT OF COMPUTER ENGINEERING
STUDENT DEVELOPMENT
PROGRAMME 2020 DAY WISE
SCHEDULE**

(Click on the link in last column to watch video)

Day	Time (IST)	Speaker	Topics
Day 1 (24/5/2020) Sunday	11:00 am - 12:00pm	Mr. Swapnil Khetan Michael Page, Manger – Procurement & Supply Chain	How an interviewer assess a potential candidate
	12:00 pm - 1:00 pm	Mr. Edwin Clement Software Engineer, BrowserStack	Interview Preparation Checklist
	2:00 pm - 3:00 pm	Mr. Karan Gohil Cloud Solutions Engineer, Google	Coding Skills Enhancement
Day 2 (25/5/2020) Monday	10:00 am - 11:00am	Mr. Mahendra Mehra PhD Scholar, Assistant Professor at Fr. CRCE, Certified Ethical Hacker, EC Council. Oracle Certified Cloud foundation Associate. Star Certified (CLOUD, DevOps, Ethical Hacking) Trainer	Linux based Interview Questions
	12:00 pm - 1:00 pm	Ms. Jenifer Reuben DevOps Engineer, BNP Paribas	DevOps Tools -Jenkins
	2:00 pm-3:00 pm	Mr. Leon D'souza Software Developer, MSCI Inc.	Database Interview Questions
Day 3 (26/5/2020) Tuesday	9:30 am -11:00 am	Mr. Aakash Palghadmal, Analytical Development Analyst, MSCI Inc.	OOPS Concept Part 1 OOPS Concepts part 2
	12:00 pm – 1:00pm	Dr. Khushbu Trehan Professor and Employability Skills Trainer. Dale Carnegie Certified Trainer. British Council Certified IELTS Trainer	HR Interview Questions

Day 4 (27/5/2020) Wednesday	10:00 am -11:00am	Mr. Gaurav Shinde Software Engineer, JPMorgan Chase & Co.	Angular , JDBC Integration
	12:00 am – 1:00pm	Mr. Melwyn Saldanha Software Engineer, People Interactive	Golang for Microservices
Day 5 (28/5/2020) Thursday	10:00 am - 11:00pm	Mr. Gaurav Sen Software Engineer and YouTuber	System Design-Case Study GoToWebinar
	12:00 am – 1.00pm	Mr. Ashley Lobo Programmer, Final Year Student, SIH 2019 Winner, ACM ICPC 2019 Regional Finalist	Competitive Coding (Hands-on)
			Click here to download All PPT/PDF/reference material

Contact for Further Information:

Prof. Sunil Chaudhari | Mob: 9987112768 | Email: sunil_chaudhari@fragnel.edu.in

Prof. Ashwini Pansare | Mob: 9821530672 | Email: ashwinip@fragnel.edu.in

Prof. Monali Shetty | Mob: 7276745903 | Email: monali_shetty@fragnel.edu.in

We Conclude with beautiful Amrut-Tushar (Priceless Thought),
To do constructive work with sincerity, skill & love is the true
worship of God, and this attitude alone has the power to make
the Nation surpass all other Nations in the world.

Gender Equity

- International Women's day celebration by WIE
- Best Allrounder Award for Male and Female Students
- Women Development Cell
- Gender equality session arranged by Akshara Rao NGO and NSS
- Dr. SSS Award for Excellence in Mathematics
- Girl Students in various Student Chapters – Sample List of Members

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING
Fr. Agnel Ashram, Bandstand, Bandra (West), Mumbai – 400 050.

Ref. : CRCE / 2020 / 084

Date : March 11, 2020.

C I R C U L A R

Dear Teaching & Non-Teaching Staff

Greetings from the IEEE-WIE CRCE Students Chapter.

IEEE-WIE CRCE on behalf of IEEE Bombay Section is organizing Women's Day Celebration on 12th March 2020 in our college from 1:30 to 3:30 pm in *Seminars hall.*

Women's Day is being celebrated to enhance and encourage women to participate in every field and felicitate them for their contribution towards the society.

Following are the speakers invited for the programme:

- 1) Dr. Sonia Golani, EC Member FICCI, FLO Mumbai (Joint Secretary)
- 2) Ms. Prema Mishra, Founder, Catapult

We request all the teaching and non-teaching staff members to be a part of Women's Day Celebration.


(PROF. SUSHMA NAGDEOTE)
WIE-CRCE BRANCH COUNSELLOR


(DR. SRIJA UNNIKRISHNAN)
PRINCIPAL



Fr. Conceicao Rodrigues College of Engineering

(Affiliated to University of Mumbai, Approved by AICTE, New Delhi)

Fr. Agnel Ashram, Bandstand, Bandra (West), Mumbai – 400050.

Phone: 022-26423841/42, Fax: 022-26516831

Website: sites.ieee.org/sb-crce, Email: ieee.crce@gmail.com



Annual Report WIE-CRCE

Date: 18th March,
2020

The Women in Engineering (WIE) is a global network of IEEE members and volunteers dedicated to promoting women engineers and scientists, and inspiring girls around the world to follow their academic interests in a career in engineering and science. The mission of WIE is to inspire, engage, encourage, and empower women worldwide. WIE-CRCE aims to inculcate the importance and advancements related to technology and social issues to women to make them whole as an individual with a firm technical background for the benefit of humanity. Helping students adapt to technological aspects of modern world and being in power with any other professional is our objective.

The WIE council was formed with IEEE council of Fr.CRCE, The branch counsellor of the council is Prof. Sushma Nagdeote , who has been leading and assisting for WIE council. The council organized various successful events which were of paramount importance.

One of the events which were organized by WIE was Papparazzi during the TechFest of our college 'SYNERGY'. Many students from the college participated for the event and showed their enthusiasm. Another event of WIE was the Field Visit to MICA Labs was organized in association with IIC-Fr.CRCE. This field visit was attended by the faculty members of our college and many students from other departments. This visit was for the students who wanted to get knowledge of various Automation and Control Systems associated with the Marine Industrial Sector. The Industrial Visit 2019-20 was one of the great events which was conducted from 27th of December to 4th of January, where the students of all department of 2nd, 3rd and 4th Year had visited to Shimla-Manali, where many industries had been visited.

The most successful event was SPARKC event which was for orphanage children of 12 to 18 age range from Fr Agnel Ashram were explained the concepts of General Science like Electromagnetism and Reflection of light in water with practical demonstration. After the session the students was enlighten. Another event, Code Breakers was conducted by WIE in co-ordination with IIC- Fr.CRCE.

The last and most important event for the academic year 2019-20 was International Women's Day Celebration which was celebrated on 13th March. The theme for International Women's Day this year was, "Women in Entrepreneurship", which emphasizes innovation by women and girls, for women and girls, at the heart of efforts to ignite the passion of Entrepreneurship. The council hope to empower and promote women worldwide in technical field by inspiring and conducting many more activities in future.

Report by

Prof Sushma Nagdeote
(Branch Counsellor - WIE)

Ms. Jagruti Bhanushali
(Vice-Chairperson-WIE)

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING
Fr. Agnel Ashram, Bandstand, Bandra (W), Mumbai – 400 050.

Ref.: CRCE / 2020 / 045

Date : February 3, 2020.

NOTICE

BEST ALL ROUNDER

Academic Year 2019-2020

We are pleased to announce the names of the winners of the Best All Rounder Award 2019-2020.

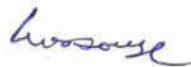
Best All Rounder (Female Category) - Ms. Shreya Raut
B.E. Computer Engineering

Best All Rounder (Male Category) - Mr. Ryan Dsilva
B.E. Information Technology

Congratulations to the winners and to all the participants.


(DR. SRIJA UNNIKRIISHNAN)
PRINCIPAL

CC : Fr. Peter D'Souza
Fr. Valerian D'Souza
Dr. D.V. Bhoir





SOCIETY OF ST. FRANCIS XAVIER, PILAR'S

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING

(Approved by AICTE & Affiliated to University of Mumbai)

Fr. Agnel Ashram, Bandstand, Bandra (W), Mumbai - 400 050.

Phone : (022) 6711 4000, 67114101, 6711 4104 • Fax : 6711 4100

Website : www.frcce.ac.in • Email : crce@fragnel.edu.in

Ref.: CRCE / 2019 / 315A

Date : August 1, 2019.

NOTICE

" WOMEN'S DEVELOPMENT CELL "

In an effort to promote the well being of the girl students, Teaching and Non-Teaching Women Staff of the Institute, to deal with the cases / complaints of sexual harassment and to implement the women's policies in general, a **Women's Development Cell** has been re-constituted in the College. This is in compliance with the decision of the Supreme Court of India. The College Women's Development Cell shall consist of the following members :-

S.No.	Name of the Member		Contact Nos.
1	Dr. Srija Unnikrishnan	President	9869005457
2	Dr. Sapna Prabhu	Co-ordinator	9833545743
3	Dr. Jagruti Save	Member	9869621900
4	Dr. Hemant Khanolkar	Member	9969154398
5	Mrs. Sushma Nagdeote	Member	8879626260
6	Mrs. Neelam D'Silva	Member	9823449254
7	Ms. Neha Prakash	NGO Representative	8419996979
8	Ms. Riya Gupta	Students Representative	8369097017

All the concerned are requested to note the contact details of the above members and represent their grievance to any of the member, if any for their consideration and suitable action.

(DR. SRIJA UNNIKRISHNAN)
PRINCIPAL

Copy to : - Fr. Peter D'Souza, Fr. Valerian D'Souza

- HODs – Production Engg, Electronics Engg, Computer, I.T., H&S
- Members of Women's Development Cell – for information and necessary action
- Staff / Student's Notice Board



NSS REPORT 2019 - 2020.

“The happiest people I know, are those who lose themselves in the service of others”

– Anne Frank.

NSS has always stood up to its strong spirit of serving the society, keeping in mind the motto ‘**Not me but you**’. Thus, the belief that we must strive for others is being realized through the selfless services of our unit who get into timely action, be it lending a helping hand to the needy or protecting and conserving the environment. We extend our gratitude to our Director **Fr. Valerian Dsouza** our principal **Dr. SrijaUnnikrishnan** our Program Officers **Prof. SaurabhKorgaonkar, Prof. DipaliBhise,** and **Prof. Pradeep Singh** for their encouraging bits of advice which proved beneficial to our volunteers through thick and thin of each event.

The year commenced with the registration of 100 active volunteers across SE, TE and BE. And kick-starting our array of activities, We began with a Tree Plantation Drive followed by an awareness program conducted by the Bisleri Association to put bottles into good use. Next were the Beach Cleanup programs at Chimbai in association with the NGO ‘United Way’. In 2019 floods hit many parts of Maharashtra and one of the most affected was Kolhapur. We organized a Donation Drive for flood relief where in we got excellent response from the Staff and Students. We conducted multiple surveys across Jogger’s Park in Bandra where we interviewed the residents and regular visitors about their experience there, major changes the park went through and the problems faced by them there. It was followed by a Blood Donation drive where we witnessed active participation of our fellow Students and Staff members as well.

As the month of festivities commenced, Post Ganpati Visarjan beach cleanups were organized at Juhu and various other Beaches from 4th to the 13th of September which was a total success again. That was followed by a week long Bandra fair volunteering cum crowd management where our members assisted the Mumbai Police. Next was the Plastic Ban Rally where we began from Bandra Station and walked all the way to the College shouting out slogans against plastic use. An awareness seminar to throw light on child abuse was organized which witnessed a big audience too. Our volunteers were also a part of the Read Carnival by United Way where the marginalized children were given an opportunity of reading to their heart’s content. We had walk for freedom rally to stand against inhuman practice of human trafficking. We put up posters of save water on all drinking tanks in college premises. Beach cleanup was organized in collaboration with coco-cola .our students attended disaster management workshop organized by mumbaiuniversity .also a gender equality session arranged by akshararaongo.

This year NSS took a great initiative by planting fruit bearing trees around the College Campus whose entire produce would go to the organization. The most exciting part was an 8-day camp to the Tandulwadi area of Palghar District. The main aim there was to educate the kids about various technologies and aids for studying available to them. The members engrossed themselves in painting the school walls bright, exploring the rural life there, trekking up a hill and interacting with the villagers there. Our Program Officer Prof. Saurabh and Prof. Dipali accompanied our members to the site.

On commencement of the Even Sem, A Nature Trail to Sanjay Gandhi National Park was organized which gave a fresh start to the Year. Next, a round-2 of Blood Donation Drive was organized which received a massive response again.

Currently we have a number of events and programs lined up for the coming days. As a team we always prioritize 'You' before 'Me' spreading cheer and smiles around. We sincerely thank our Principal, our Director and 'YOU' for appreciating the work we do.

Happy Serving!



Alden D'souza
(President Nss-Crce)

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING
Fr. Agnel Ashram, Bandstand, Bandra (W), Mumbai – 400 050.

Ref.: CRCE / 2020 / 053

Date : February 11, 2020.

NOTICE

Dr.SSS Award for Excellence in Mathematics – 2019-20

- Mathematics is an indispensable subject for any field of study.
- It is the science of space, time & numbers & hence the Queen of Sciences.
- It is a constant guide.
- It helps in sharpening the reasoning power & mental alertness of all human beings.
- It is essential for men on the street as well as scientists, engineers & philosophers.
- To promote the interest in Mathematics, Mrs. Sundry S. Prabavathy, Head, Dep't of Humanities & Science has started the Dr. SSS Award for Excellence in Mathematics from the year 2012.

The Winners of this award for this year are:

1. Rank I	:	Brinel D'Souza	BE – Computer	88.22%
2. Rank II	:	Akanksha Patro	BE – Info. Tech.	88.00%
3. Rank III	:	Vedant Sakhardande	BE – Computer	87.33%
4. Rank IV	:	Juhi Checker	BE – Computer	87.11%
5. Rank V	:	Yogendra Yatnalkar	BE – Info. Tech.	86.44%

Congratulations to all the above winners !

Sundry S. Prabavathy
11/02/2020

Sponsored by : PROF. S. PRABAVATHY
ASSOCIATE PROFESSOR
DEPT. OF MATHEMATICS

S. J.
(DR. SRIJA UNNIKRIISHNAN)
PRINCIPAL

C.C.: Students Council (Cultural Secretary)
Prof. S.S. Prabavathy, Hum. & Sci. Dept.
- To do the needful
Notice Boards – 1st & 5th Floor
H.O.D – Production, Electronics, Computer, Info. Tech.,
Class Teachers –B.E. Computer – Ms. Swati Ringe
B.E. Info. Tech. – Ms. Garima Tripathi

Senior Council				
Name	Post	Mobile Number	Email Id	
Aradhya Deolekar	President	9820783448	aradhya.1998@gmail.com	
Kevin Ruffin	General Secretary	9604003680	kevinruffin1505@gmail.com	
Riya Gupta	Cultural Secretary	8369097017	riya1999gupta@gmail.com	
Pranay Bagrecha	Technical Secretary	9082515479	pbpranaybagrecha@gmail.com	
Surya Pratap Shahi	Boys sports secretary	8840540054/9146675169	surya8barca@gmail.com	
Simran Dsouza	Girls Sports Secretary	9167251215	simdsouza99@gmail.com	
Rozebud Gonzalves	Public Relations head	9422668786	rozebud.gonsalves@gmail.com	
Swarup T Saju	Marketing Head	8879851205	swaruptsaju@gmail.com	
Ridhika Agarwal	Alumni Head	8879767222	ridhika045@gmail.com	
Jeswin Thomas	Design Head	7045486037	ptjeswin99@gmail.com	
Junior Council				
Joshua G	SE Representative	9769496112	joshuagodinho2010@gmail.com	
Clafacio L	SE Representative	9309816876	clafacio1212@gmail.com	
Antinni Joseph	SE Representative	9757214466	antinnijoseph@gmail.com	
Ninad Shetty	SE Representative	8451941231	ninadshetty71@gmail.com	
Anu Thomas	Ladies Representative	7738456280	anu@tmail.in	
Prisha Sharma	Ladies Representative	8291001034	sharmaprisha922@gmail.com	
Sakshi Ghadigaonkar	webmaster	9637762627	sakshig2507@gmail.com	
Felin Patel	Documentation Incharge	7045465080	felinpatel7@gmail.com	
Ridhi Bauskar	Assistant Design Head	7303147742	ridhi01bauskar@gmail.com	

IEEE: Institute of Electrical and Electronics Engineering

The FRCRCE Student Branch of IEEE was established in 1995. The main idea behind establishing a Student Branch was to involve students in the activities of the IEEE-Bombay Chapter. The students are constantly encouraged to arrange their own activities like quiz contests, debates and workshops. Students are motivated to use the journals, magazines provided by IEEE to become acquainted with the industry, which is not provided by the University syllabus. This greatly helps students when they enter the industry as professionals and they can adjust to their new environment very easily.

List of IEEE council members -2019-20

Sr.no	Name of student	Post	Class
1	Ricky Stanley	Chairperson	B.E (Electronics)
2	Prashant singh Rawat	Vice Chair Person	T.E (Electronics)
3	Ms. Jagruti Bhanushali	Vice Chair Person(WIE)	T.E (Electronics)
4	Urvashi Dhingra	Web Master	T.E (Electronics)
5	Sheryl Serrao	Technical Head	T.E (Electronics)
6	Mamta Saini	Sponsorship Head	T.E (Electronics)
7	Joel Paul	Documentation Head	T.E (Electronics)
8	Sneha Samuel	Membership Development Officer	T.E (Electronics)
9	Ambika Shinde	Account in-Charge	T.E (Electronics)
10	Alden Noronha	Event Co-ordinator	T.E (Electronics)
11	Shreya Bilonikar	S.E Represntative	S.E (Electronics)
12	Ronak Oza	S.E Represntative	S.E (Electronics)

WIE: Women in Engineering

WIE-CRCE is an affinity group of IEEE which is the world's leading professional association for the advancement of technology. WIE membership is available free of cost for IEEE members, especially women student. The mission of IEEE WIE is to inspire, engage, encourage, and empower IEEE women worldwide. WIE-CRCE aims to inculcate the importance and advancements related to technology and social issues to women to make them whole as an individual with a firm technical background. Helping students adapt to technological aspects of modern world and being in power with any other professional is our objective. This chapter organizes the talk of eminent personalities from various fields to celebrate Women's day. WIE envisions a vibrant community of IEEE women and men collectively using their diverse talents to innovate for the benefit of humanity.

List of WIE council members 2019-20

Sr. No.	Name of student	Post	Class
1	Swaroop Raste	WIE Chairperson	BE Electronics
2.	Ms. Jagruti Bhanushali	WIE VCP	TE Electronics

3.	Yash Kumar	Technical Head	T.E (Electronics)
4.	Komal Ram Shinde	Marketing Head	T.E (Electronics)
5.	Aarti Vishwas Temulkar	Event Co-ordinator	T.E (Electronics)
6.	Sheetal Sharma	S.E Representative	S.E (Computers)

CSI: Computer Society of India

The purpose of CSI is to promote scientific and educational development of the masses. The promotion of information technology as a profession is the top priority of CSI today. To fulfil this objective, CSI student chapter regularly organize seminars, workshops, lectures and projects. This chapter organizes the events like Code Swap, Counter Strike LAN Gaming, and Industrial visit.

List of CSI council members 2019-20

Sr. No	Name of student	Post	Class
1)	Amandeep Singh Saini	Chairperson	BE IT
2)	Sahil Gupta	Vice-chairperson	TE COMPS
3)	Emmima Gnanaraj	Event head	TE COMPS
4)	Mario D'sa	Marketing head	TE COMPS
5)	Khalid Sheikh	Technical head	TE COMPS
6)	Ariane Corria	Public Relations head	TE COMPS
7)	Shubham Bhate	Design head	TE COMPS
8)	Praditi Rede	Jr. Event head	SE COMPS
9)	Rahul Shinde	Jr. Marketing head	SE COMPS
10)	Nisha Mascarenhas	Jr. Technical head	SE COMPS
11)	Sahaana Iyer	Documentation Incharge	SE COMPS
12)	Clint Ferreira	Jr. Public Relations head	SE IT

TEDxCRCE

TEDxCRCE allows our stage to host personalities who have sheer passion to have an impact on our society be it political, social, technological or cultural. The speakers share their belief in their ideas which allow them to move the masses, the extent of their success and the evolution / termination of their ideas in due course due to the constant changes taking place worldwide. In addition to this, this chapter organizes technical activities like Internship expo and resume building session. Further the council is also involved in various events related to social work through Community Services like Volunteering drive, Food Rescue Operation.

List of TEDxCRCE council members 2019-20

Name of student	Post	Class
Renjit Koshy	Organizer	BE ELECTRONICS
Aman Sheikh	Curator	BE ELECTRONICS
Jaison Dsouza	Director	BE ELECTRONICS
Meera Ghaskadvi	Coordinator organizer	TE IT
Sakshi Kochare	General Administration Head	TE IT
Harkirat Dassan	Marketing and Sponsorship Head	TE IT
Pragati Rao	Internship Expo Head	TE ELECTRONICS
Nolita Rego	PR and Media Head	TE COMPUTERS
Maria Anthony	Documentation and Finance Head	TE ELECTRONICS
Gladden Rumao	Jr. Technical	SE COMPUTERS
Samantha Mascarenhas	Jr. PR Head	SE COMPUTERS
Lancylord Dmonte	Jr. Design Head	SE IT
Cyril Varghese	Jr. PR Head	SE PRODUCTION
Nikhil Sharma	Jr. Marketing Head	SE ELECTRONICS
Ayaan Shaikh	Jr. Documentation and Finance	SEIT

Project Cell

Project cell was established in the year 2015. The team of 10 – 12 students, from different branches, works for this cell. The cell provides support for mini-project as well as B.E projects. This cell also arranges workshops on latest technologies for the students. The cell is also mentored by our Ex-students from industry, with whom regular meetings have been arranged, in order to keep the cell members updated on latest trends of technologies in industry. The cell members provide training to their junior students different technologies such as Embedded System, Robotics etc.

List of Student Council Members 2019-20

Sr.	Name of Council Member	Post	Class
1.	Mohammad Ahmed	Head	B.E.Electronics
2.	Shree Lole	Member	T.E.Electronics
3.	Affan Khan	Member	T.E.Electronics
4.	Ganesh Kini	Member	S.E. IT
5.	Melita Japhet	Member	S.E. IT
6.	Simran Biswas	Member	S.E.Computers

7.	Heron Vas	Member	S.E. IT
8.	Ronak Upasham	Member	S.E.Electronics

ECellCRCE: Entrepreneurship Development cell

The mission of eCellCRCE is to germinate the idea of entrepreneurship and develop the students to face the entrepreneurial challenges of tomorrow. The vision is to develop a strong relation between our students with our experienced alumni and experienced members of the business fields, allowing our students to have a dynamic mindset before starting their entrepreneurial voyage. With this Mission, Vision, and Values, this council plans to follow as a group and as individuals for the betterment of the entrepreneurial ecology of our prestigious institution and thus helping the students of Fr. Conceicao Rodrigues College of Engineering.

List of E-Cell council members 2019-20

Sr.No	Name of Student	Post	Class
1.	Mahavir Chavda	General Secretary	TE Elex
2.	Sigmond Cardoza	Event Head	TE Elex
3.	Smith D'Souza	PR Head	TE Elex
4.	Sameeksha Rane	General Affairs	SE IT
5.	Tanisha Braganza	Marketing Head	SE IT
6.	Parth Nirmal	PR Coordinator	SE Elex
7.	Meet Bhalgamiya	Web Master	SE IT
8.	Pierre Colaco	Design Head	SE IT
9.	Manuel Fernandes	Assistant Design Head	SE IT
10.	Umayr Farooqui	Editor	SE IT
11.	Kiran Rathod	Documentation Incharge	SE Elex

ACM- Association for Computing Machinery

The aim of this chapter is to group of like-minded students, with a common goal of creating an environment that is conducive to technological know-how while promoting creative and leadership skills. This is a group of like-minded students, with a common goal of creating an environment that is conducive to technological know-how while promoting creative and leadership skills. This chapter organizes different events like Bootstrap Workshop, Blur Gaming, and Industrial Visit.

List of ACM council members 2019-20

Name	Class	Designation
Sojan Chandy	BE IT	Chairperson
Rebecca Dsouza	TE IT	Vice-chairperson
Chinmay Gawde	TE IT	Treasurer
Feaba Johnson	TE IT	Membership Chair
Pushpak Aakesh Chhaged	TE IT	Webmaster
Swini Rodrigues	SE COMPS	Event Head
Sahil Jain	SE COMPS	Asst. Technical Head
Ganeshprasad Keni	SE IT	SE Representative
Simran Biswas	SE COMPS	SE Representative

CodeLabs CRCE

CodeLabsCRCE is one of the technical councils of Fr. Conceicao Rodrigues College of Engineering that has worked immensely towards the improvement of logical skills and programming abilities of young students and helping them to excel in their career. Various activities conducted year are Alcoholic, Code Combat, Tech Hackathon, Coding Contest.

List of CodeLabs council members 2019-20

Name	Class	Post
Sumit Gupta	BE IT	Chair-person
Princeton Baretto	TE COMPS	Vice Chairperson
Albin Tharayil	TE COMPS	Vice Chairperson
Sanfer Noronha	TE COMPS	Event-Head
Benita Rego	TE COMPS	PR-Head
Leon Castellino	TE ELEX	Marketing-Head
Tijo Thomas	SE COMPS	Documentation-Head
Ayush Tomar	SE COMPS	Problem-Setter
Sudheer Tripathi	SE COMPS	Problem-Setter
Ron George	SE COMPS	Design-Head
Dion Trevor Castellino	SE COMPS	SE-Representative
Chelsea Dabre	SE COMPS	SE-Representative

MOZILLA Campus Club CRCE

Mozilla campus club CRCE aims to ensure the Internet is a global public resource, open and accessible to all. Its motive is to keep you updated with the latest technologies, help you learn new things and to keep the web free and open to all. The Mozilla campus club CRCE regularly organises seminars, workshops, lectures and projects. The flagship event of Mozilla campus Club CRCE is the 'Mozitalk' event where the prominent speakers from industry deliver workshops on latest technologies in the industry. Various other events are conducted which cover topics like HTML/CSS, Ethical Hacking, MoziTechTalk, Cloud Computing ,Capture the flag ,along with all the technical events, Fun Events like Classroom Cricket and image capture are held.

List of Student Coordinators

Sr no.	Position	Name	Class
1	Captain	Rajesh Manjrekar	BE Comps
2	Vice Captain	Aditya Shrotriya	TE IT
3	Webmaster	Sherwyn D'souza	TE IT
4	Event Head	Dylan Dsouza	TE IT
5	Treasurer	Shreya Bilonikar	SE Comps
6	PR Head	Samruddhi Shrawne	SE Elex
7	Logistics Incharge	Carol Mendonca	SE Comps
8	Marketing Head	Tresa Pothan	SE Comps
9	Documentation Head	Sahaana Iyer	SE Comps

Student Project Teams

Team Robocon

Team Robocon CRCE is a robotics team from Fr. Conceicao Rodrigues College of Engineering. It is a group of engineers who make robots to participate in Robocon India. Further it aims to encourage students, to innovate and to think exceptionally different from regular routine. Students from all branches come together to achieve highest rank in the competition. This chapter organizes workshops on latest technology like 3D printing.

List of council members 2019-20

Sr.no	Name	Post	Class
1	Richa Tripathi	Captain	TE ELEX
2	Nitin Chaube	Electronics Head	TE ELEX
3	Aditya Pandey	Production Head	TE PROD
4	Dhiraj Nair	Computer Head	TE ELEX
5	Aayushi Thakur	Member	SE ELEX
6	Adroit D'Souza	Member	SE ELEX
7	Anna George	Member	SE ELEX
8	Charles Gershon	Member	SE COMP
9	Godwin Vaz	Member	SE COMP
10	Joel Ayappa	Member	SE COMP
11	Manobala Subramanian	Member	SE ELEX
12	Rachel Sequeira	Member	TE ELEX
13	Rissa Chettiar	Member	SE COMP
14	Sharon Shajan	Member	TE ELEX
15	Sharvin Sunny	Member	TE PROD
16	Sparsh Bindroo	Member	TE PROD
17	Sreenivasan Murugan		
18	Zeeshan Khan		

Team Vaayushastra

Team Vaayushastra was formed in 2012 to represent Fr. Conceicao Rodrigues College of Engineering in SAE Aero Design Competitions. Since its inception, it has participated in the advanced class of the competition 4 times, constantly improving on its results. The team is formed entirely of undergraduate students from the college with an aptitude and interests conducive to the competition. Currently the team has 12 members coming from all 4 departments of the college. For efficiency, the team is further divided into 5 departments that work in tandem towards the common goal. These are Design and Modelling team, DAS (Data Acquisition System) team, GUI (Graphical User Interface) team, Materials and Inventory Management Team, Sponsorship and Documentation team.

Team Vaayushastra (2019-20)

Sr.no	Name	Post	Class
1	Soumil Mahajan	Captain	B.E PRODUCTION
2	Saumeel Gabhare	Vice Captain	T.E ELECTRONICS
3	Elita Menezes	Member	T.E COMPUTERS
4	Dishank Oza	Member	T.E COMPUTERS
5	Sachin Kasbekar	Member	S.E PRODUCTION
6	Yashovardhan Kheman	Member	S.E PRODUCTION
7	Amit Dubey	Member	S.E PRODUCTION
8	Blessy Benny	Member	S.E PRODUCTION
9	Niraj Jain	Member	S.E PRODUCTION
10	Mareena Fernandes	Member	S.E IT
11	Gaurav Shetty	Member	S.E IT
12	Yash Khasgiwala	Member	S.E COMPUTERS
13	Trisha Singh	Member	S.E ELECTRONICS

Team CRCE Formula Racing

Team CRCE Formula racing, established in the year 2016, involves aspiring and promising engineering students of various branches and encourages them to come together with an idea of building their own “Formula Student’s Race Car” and compete with various other teams nationally and internationally in competitions like Formula SAE (*established in 1980, Texas*). The team involves the collaboration of Production, Electronics, Computers and IT to build a race car which performs to its best in various dynamic events such as Technical Inspection, involving mechanical Inspection, Tilt test, Noise test , Brake test, Skid pad, Acceleration, Autocross, Endurance and Efficiency. Static events such as Cost and manufacturing analysis, Design report, Business Plan Presentation are also conducted. The team members Design, analyze, manufacture and test their car in the given deadlines based on their own criteria.

Team Member Information			
Sr. No.	Name	Post	Branch
Seniors			

1	Divyesh Kanchan	Team Captain	Production Engineering
2	Harsh Kareliya	Team Manager/ Engine and Powertrain Head	Production Engineering
3	Preet Mehta	Chief Financial Officer/ Vehicle Dynamics Head	Production Engineering
4	Mihir Rayganga	Marketing Head	Production Engineering
5	Tanmay Ghadi	Creatives Head	Electronics Engineering
6	Ronak Mistry	Inventory Head	Production Engineering
7	Akash Jadhav	Chassis and Composites Head	Production Engineering
8	Nathan Lobo	Cost and Documentation Head	Production Engineering
9	Shubh Karani	Brakes Head	Production Engineering
10	Shrishgovind Revankar	Electronics Head	Electronics Engineering
Juniors			
11	Aditya Raj	Chassis and Composites	Mechanical Engineering
12	Swarangi Kale	Chassis and Composites	Mechanical Engineering
13	Harsh Remje	Chassis and Composites	Mechanical Engineering
14	Durvankur Naik	Chassis and Composites	Mechanical Engineering
15	Mayuresh Vadke	Engine and Powertrain	Mechanical Engineering
16	Brendan Frenandes	Engine and Powertrain	Mechanical Engineering
17	Shanon Calderia	Engine and Powertrain	Mechanical Engineering
18	Nealon D'cruz	Engine and Powertrain	Mechanical Engineering
19	Raul Gonsalves	Brakes Department	Mechanical Engineering
20	Rhutika Mahadik	Brakes Department	Production Engineering
21	Vailanka Louis	Brakes Department	Production Engineering
22	Bhushan Salunke	Vehicle Dynamics	Mechanical Engineering
23	Dimple Solanki	Vehicle Dynamics	Production Engineering

24	Varun Sebastian	Vehicle Dynamics	Mechanical Engineering
25	Yashas Joglekar	Vehicle Dynamics	Mechanical Engineering
26	Shubham Jadhav	Vehicle Dynamics	Production Engineering
27	Brycen Fernandes	Electronics Department	Electronics and Computer Science
28	Shibu Mathew	Electronics Department	Electronics and Computer Science

Student Social Clubs

Rotaract Club

The Rotaract Club of CRCE has been affiliated with the Rotary Club of Bombay Bandra, which has recognized for the efforts that the Rotaract Club of Fr. CRCE has put in order to make a difference to society. This year Rotaract Club of Fr. Agnel College (Bandra West) is affiliated to Father Agnel Ashram and NGO called Bigger Than Life. Bigger than Life (BTL) is an NGO who reaches out to the underprivileged children and their families who stay in the slums of Bandstand. This club organizes many events in odd and even semester like donation drive, Cleanliness Drive, Marathon, trek, and many more to help and to raise the fund for charity. It also creates awareness of education for underprivileged women and children through Marathon and other events. This club has donated Rs. 15k to Father Agnel Ashram and 15 K to BTL NGO.

List of council members 2019-20

Name	Post	Class
CORE TEAM (SC)		
Rtr. Nachiket Nisal	President	TE IT
Rtr. Aishwarya Parulekar	Vice President	TE ELEX
Rtr. Cassia Vaz	Secretary	TE COMPS
Rtr. Mohit Kunder	Joint Secretary & Technical Head	TE COMPS
Rtr. Pranavnath Tiwari	Sergeant at arms officer & Marketing Head	TE PROD
Rtr. Simren Batra	Public Relations Head	TE IT
Rtr. Dhvani Rajgaur	Treasurer	TE PROD

BOARD OF DIRECTORS (JC)

Rtr. Mukesh Purohit	Club Service Director	SE PROD
Rtr. Hanita Rego	Community service director	SE IT
Rtr. Ashish Bandarkar	Marketing Directors	SE IT
Rtr. Saloni Khanna	Marketing Directors	SE IT
Rtr. Hrithik Gupta	Professional Development Director	SE Elex
Rtr. Saptarshi Chatterjee	Taskforce Director	SE ELEX
1)Rtr. Leandra Monteiro 2)Rtr. Kraig Fernandes	Public Relations Director	SE IT SE Elex

NSS Council 2019-20

Sr. No.	Name	Post
1	Alden Dsouza	President
2	Gaurav Sable	Vice President
3	Ria Dmello	Event Head
4	Gavin Correia	Event Head
5	Vedanti Karnike	Documentation Head
6	Ashly Fernandez	Documentation Coordinator
7	Ritika Fargose	Media Coordinator
8	Celine Dsilva	Documentation Coordinator
9	Sanmit Dabre	Public Representative

Human Values

- Courses Offered in Curriculum
- Activities by NSS
- Activities by Rotaract Club
- Activities by TEDxCRCE



NSS CRCE

Report on Kolhapur Flood Relief Donation

Place :Fr C.R.C.E

Date: 22 August 2019.

**“You have not lived today until you have done something for someone who can never repay you.”
– John Bunyan**

With the help of NSS unit of Fr.CRCE the students and professors of Fr.CRCE came together to Contribute for flood -affected victims of Kolhapur. Together the college collected and donated essentials like clothes, dal, pulses, rice, sanitary pads, soaps, stationery for students such as books crayons , etc. The donation campaign was conducted for around a week .



Image : essentials packed to deliver

The NSS unit of the college had taken this initiative of collecting these essentials and distributing it to all the flood affected victims. Our aim was to work together and support organizations and efforts towards helping Kolhapur

Our community members, students and Professors were very keen and generous in contributing towards the relief operation. The donation boxes were kept on each floor of college and students and professors were requested to put the essentials in those boxes. The donation campaign was a great success as various students and professors had contributed. On behalf of the NSS unit of Fr. CRCE we are thankful for each one of you for lending your helping hands towards this donation drive.

We hope our small contribution helped all those in need.



NSS CRCE

REPORT ON Blood Donation 1

Date: August 28th 2019.

Place: FR. Conceicao Rodrigues College of Engineering.



Image : Group picture of hospital staff and nss volunteers

As Donating a part of ourselves for the betterment of the society is our motto, NSS CRCE along with the staff of renowned TATA Memorial Hospital were successful in organizing a Blood Donation Campaign on 28th August, 2019. The Drive received an overwhelming response from the students as well as the staff of our college.

Various posters and promotion were done of blood donation, in college premises canteen and in staff room.

The event commenced by 10:am in the morning and went upto 4:00 in the evening. Donors of all blood groups donated their blood. Each donor was given snacks post donation. Certificates were provided to all the donors by the hospital. Donors with rare blood group were given a special gift. Enough amount of blood was collected and the hospital staff as well as the donors went home happy faces!



NSS CRCE

REPORT ON Blood Donation 2

Date: January 28th 2020.
Engineering.

Place: FR. Conceicao Rodrigues College of

“Never feel yourself weak, you have the ability to save a life. Just donate blood.”

As Donating a part of ourselves for the betterment of the society is our motto, NSS CRCE along with the staff of renowned Holy Family Hospital (Bandra West) were successful in organizing a Blood Donation Campaigning on 28th January, 2020. The Drive received an overwhelming response from the students as well as the staff of our college.

Various posters and advertisement were done of blood donation, in college premises canteen and in staff room.



Image : our volunteers helping donors.

The event commenced by 10:am in the morning and went upto 4:00 in the evening. Donors of all blood groups donated their blood. Each donor was given snacks post donation. Certificates were provided to all the donors by the hospital. Donors with rare blood group were given a special gift. Enough amount of blood was collected and the hospital staff as well as the donors went home happy faces!



NSS CRCE

REPORT ON BANDRA FAIR VOLUNTEERING

Date: 08 To 15 September 2019.

Place: Mumbai.

The Mount Mary Church, located in the heart of Bandra is known to have infinite number of visitors each year. The peak number of devotees are expected when the Church organizes a week long Novena to celebrate the birth of Mother Mary in the month of September every year. It generally begins on the second Sunday of the month and goes upto the next Sunday.



Image : Mary of Mount.

As People from all faiths and across India visit the place during this season, there are chances of commotion and other chaotic situations. So to handle the matters smoothly, the Mumbai Police took it to their hands, the responsibility of managing the crowd and traffic.

So, this year along with the Mumbai Police, 45 of our volunteers tirelessly participated in the Bandra fair volunteering cum crowd management for the entire week.



Image : Our volunteers managing crowd.and helping aged

The volunteers were divided into 2 time slots, 8:00am-2:00pm and 2:00pm- 8:00pm based on their respective duties where they performed their assigned tasks effortlessly. Further, they were segregated into assisting the Police into various tasks like managing the crowd, helping them form queues, traffic control management, security checks, guiding pilgrims to exits, fair, restrooms etc. They also guided the senior citizens off their buses to the seats in the church and back. Extra help was given if it was needed (providing them with wheelchairs, canes and other support).

There was a special mass offered for the senior citizens where food packets were to be distributed among the pilgrims. Our volunteers carried out the task smoothly as their unity showed. The volunteers were given daily meals and other refreshments by the Mumbai police throughout the week. Each of the volunteer with 0% Absentee record was allotted with 45 hours of NSS service. All the volunteers were awarded with a certificate with Mumbai Police stamping.

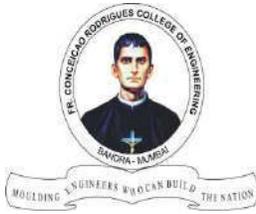


Image : Devotes worshipping Mother of Mount

NSS CRCE is grateful of the Mumbai Police for giving our members an opportunity to work and experience various crowd and traffic control management methods and assisting them throughout this week long journey. Here I had to take permission from police our college and registering names of those who are interested collaborating with mumbai police.



Image : Group picture of volunteers with Volunteers from Andrews College



NSS CRCE

Walk For Freedom

Date: 2nd November 2019.

Place: St. Stanislaus High School, Bandra(W)

The Walk for Freedom is a silent walk where participants pledge to help end human trafficking in their lifetimes, and walk single file in a public place holding placards about the reality of human trafficking that raises awareness among the watching public. Globally, the Walk is organised by A21, an international NGO which is engaged in the fight against modern-day slavery. Here in India, a volunteer mobilisation platform based in Mumbai called The Movement India has collaborated with A21, who have together partnered with 47 colleges, corporates and NGOs across the country to organise the silent Walk at public spaces in Chennai and nine other cities.



WALK ■■■
FOR ■■■
FREEDOM

Image: A21 logo

"Each of us have the choice to step up "Each of us have the choice to step up and be the solution to the problems that surround us. Slavery should not exist in our world when we are alive to help put an end to it. We are walking in 10 cities across India on October 19. This event is taking place third time in a row in Chennai. It aims to create awareness that slavery still exists. We have a three-fold objective — one is to create awareness, second is to help people understand what are the indicators and lastly, if they see something or identify it then what they should do," says BijuThampy, The Movement India's founder.

The event is being held in India for the past two years and it has been taking place across the world for the last five years. In 2017, The Movement India partnered with A21 and launched the Walk in Mumbai where almost 350 people turned up in support of the cause. In 2018, it happened across four locations in Mumbai and one location in Chennai where over 1450 came for the Walk. In Chennai alone last year more than 580 people joined and this year the organisers say that they already have over thousand registrations. "This event is being conducted with the aim of providing proper advocacy to the cause where government officials like child rights commission officers, child welfare officials, police officers, anti-trafficking NGOs, corporate, media, colleges all come together to take a pledge against human trafficking for their respective cities," explains Preejo TJ, who is heading the Chennai Walk.



Image: Students gathered for the walk

The Walk for Freedom was held on 2nd of November. The venue was St.Stanislaus High School located in Bandra West. The starting time was 7.00 am and the event took place for nearly 2 hours upto 9.00 am. We were instructed to wear black attire and report.

Thus to show our part and protest against the ongoing human trafficking and slavery around the world and according to the instructions given, the NSS unit of our college actively participated in this event. The walk was carried on from the given location upto Bandstand. All were wearing black clothes and holding placards the walk was carried out as a peaceful protest by many students of several colleges including our NSS team. After the event a motivational speech was given by chief guest-Shri.Urmila Matondkar. Also certificates were provided to all by 'The Movement India'.

It felt good seeing that how many active students showed interest in this event and we hope that it gives some fruitful impact towards the human trafficking scenario overall.



Image: NSS CRCE students that participated in the event.



NSS CRCE

REPORT ON HAPPY HOURS STALL

“We only have what we give.”

— Isabel Allende

Date: November 28th,2019 to November 30th,2019

Place: Fr. Conceicao Rodrigues College Of Engineering

NSS CRCE organized a workshop “HAPPY HOURS” in collaboration with CEREBRAL PALSY ASSOCIATION OF INDIA(CPAI) in the college premises of Fr. Conceicao Rodrigues College of Engineering, Mumbai.

Cerebral Palsy Association of India and it’s unit Happy Hours Workshop for P.D.A’s(People with Different Abilities) was initiated in the Year 1968, by a set of dedicated parents of individuals with special needs. The aim was SERVING COMMUNITY, ENRICHING LIFE. Housed in bright and airy premises with large comfortable classrooms and activity areas, the workshop is student’s delight. At CPAI, they welcome people with P.D.A’s by providing engagement and helping them to be a part of the integrated social framework, thus giving their parents some free time to focus on their own lives.



Image: Various activities for the physically challenged at the CPAI

In the HAPPY HOURS workshop, the NSS members set up a stall in the college premises for 3 days from 11:00am to 3:00pm. This event was organised to encourage the handicapped children by selling the products they made, and the amount collected was given to the CPAI to help this children. The various products they made were rakhis, bracelets, greeting cards, necklaces and paper bags.

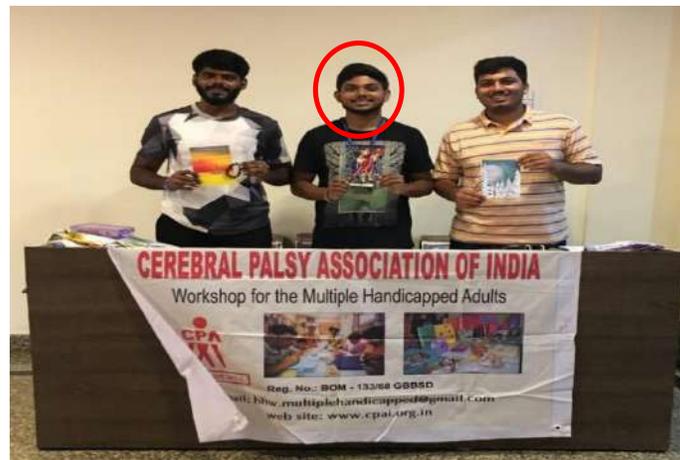


Image : NSS Members at the stall selling the products

NSS CRCE is thankful to the CEREBRAL PALSY ASSOCIATION OF INDIA(CPAI) for giving us the opportunity to conduct this workshop in our college premises and help the physically challenged people by selling their product



Image: College staff and students buying the products at the stall.



NSS CRCE

ASBB FUN RUN (MARATHON) VOLUNTEERING REPORT

DATE: 16th February 2020

ASBB (Association of Social Beyond Boundaries) is a group of enthusiastic, self-driven, change makers who take upon themselves the responsibility of bringing about the change they wish to see. Mr. Sagar Jain founder of Association of Social Beyond Boundaries came up with a vision and mission to form this trust. On the completion of 4 years, ASBB (Association of Social Beyond Boundaries) announced a 4kms Fun Run “RUN BEYOND BOUNDARIES”.

As people of different age groups were participating in this Fun Run Marathon there were high chances of runners getting interrupted or risking their safety on the busy roads of Ville Parle. So to avoid chaotic situations and handle the Marathon peacefully and with ease, Mr. Sagar Jain took an initiative to maintain the chaos along with his team but it was not possible to keep an eye on the entire route for his team.

So this year along with ASBB team, 25 of our volunteers passionately participated in the ASBB FUN RUN Volunteering on 16th Feb 2020 at Swatantrya Veer Savarkar Udyan.

For this marathon we had to plan and promote the marathon in which our volunteers were given tasks. I had to coordinate with the founder and organize this marathon.

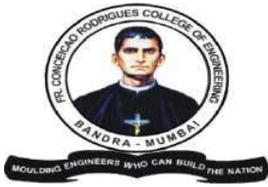
The volunteers reported the site at 5:30am, and were given a briefing about the marathon by Mr. Sagar Jain. The volunteers were divided into groups of 2-3 as per requirement and were assigned respective spots to look upon. All the volunteers were led by an ASBB member to avoid chaotic situations and effective approach. Each and every volunteer had a specific task at a particular period of time. All the volunteers were given their task before the marathon started. The gates and the Registration window were open by 6:30am and the Marathon started around 7:30am. Some of the volunteers were kept at the entrance to acknowledge the participants and to check their chest numbers, while a few were at the water counter.

Zumba activity was carried out at 7:00am before starting the marathon, to ensure that there were no sprains in muscles as enough stretching was done during the Zumba activity by a professional Zumba instructor. The volunteer's jobs included tasks like Traffic management, Ensuring Safety of the Runners, preventing runners from cheating during the marathon by taking a shortcut. After the Marathon was complete runners returned to the Swatanrya Veer Savarkar Udyan while the volunteers followed them by clearing the posters, banners and water desks.



After the Marathon was complete all the runners and the volunteers were re-energized by RED BULL and also some healthy snack which included fresh juices, sandwiches and fruits. Every participant was awarded 3 certificates and a participation medal wherein volunteers were given certificates as well. The marathon ended with a felicitation program and a vote of thanks.

NSS CRCE is grateful of ASBB for giving our members an opportunity to work and experience live traffic management and willingness to bring a change in the society.



NSS CRCE

Report on no smoking pledge.

Place : Fr. C.R.C.E

Date : 25th September 2019.



Image : students taking pledge.

NSS unit of Fr. Conceicao Rodrigues College of Engineering took this initiative to make all students pledge for no smoking and made posters and slogans to be showcased on corridors.

Pledge which is I xyz promise to not smoke or use any tobacco products now and forever. In addition, I will always try to stay away from secondhand smoke, which is a danger to my health. I will do my best to encourage people who do smoke or use tobacco products, and will do my best to support them as they try to quit.

Although nicotine is addictive, most of the severe health effects of tobacco use comes from other chemicals. Tobacco smoking can lead to lung cancer, chronic bronchitis, and emphysema. It increases the risk of heart disease, which can lead to stroke or heart attack. Smoking has also been linked to other cancers, leukemia, cataracts, Type 2 Diabetes, and pneumonia. All of these risks apply to use of any smoked product, including hookah tobacco. Smokeless tobacco increases the risk of cancer, especially mouth cancers.

We would like to thank our students and staff for supporting.

For this pledge we had to take permission from principal mam and each class teacher for conducting pledge in their class.



NSS CRCE

Report on Mission Blue Seminar.

Date : 8th July 2019.

Place :Fr.C.R.C.E



Image : presentation by united way.

United way mumbai is a renowned organization which started mission blue project in which awareness about ocean and marine life was given and how we can contribute for well being. Most life forms evolved initially in marine habitats. By volume, oceans provide about 90 percent of the living space on the planet. The earliest vertebrates appeared in the form of fish, which live exclusively in water. Some of these evolved into amphibians which spend portions of their lives in water and portions on land. Other fish evolved into land

mammals and subsequently returned to the ocean as seals, dolphins or whales. Plant forms such as kelp and algae grow in the water and are the basis for some underwater ecosystems. Plankton forms the general foundation of the ocean food chain, particularly the phytoplankton which are key primary producers.

In this seminar to call and arrange was atask for us where we had to fix a date and proper timing for conducting this seminar We would like to that united way for conducting this seminar and all our nss volunteers.



NSS CRCE

REPORT ON SELF DEFENCE WORKSHOP

Date: 6th March, 2020

Place : Mumbai



Image: Welcome speech by the President.

Fr. Conceicao Rodrigues College of Engineering conducted self defence workshop organized by the NSS council in college. The event took place at the college auditorium, 1:00 pm onwards. The event started with welcoming the guest by the president of NSS council and the workshop started with instructor showing several videos and explaining the importance of self defence.

After watching several videos, the actual workshop started with giving them hand on experience of the defence techniques. The instructor explained about the basics of self defence and when to use them.



Image: Demonstration of the self defence techniques

The event was successful with active participation of students as well as faculty members inclusive of the other staff. This workshop was a 4 hour workshop which included basic self defence techniques. Personal attention was given to all the participants and it was made sure that everyone was well versed in the taught techniques.

All the participants were made to practise the techniques with other participant. After the practical workshop all the participants were asked to give their feedback. The feedback of students was positive and looking for similar workshop in future. The event concluded with felicitation ceremony and followed by thank you speech by the President.



Image: felicitation ceremony

In a society where crime has risen to a shocking extent, the ability to protect ourselves from undesirable situations has become a necessity. Self-defence is of the utmost importance in the kind of the world we live in today. NSS CRCE looks forward to help people get educated with such informative workshops.



NSS CRCE

Report on corona awareness

Date : 28th January 2019

Place: Fr.C.R.C.E

As this novel corona virus was just in news nss unit of Fr. Conceicao Rodrigues College took an initiative of making people aware about it symptoms, how to prevent from it and what is it .

We spread this awareness by making posters creating message and posting on social media platforms.

**WHAT IS
CORONAVIRUS**

- HAS INFECTED MORE THAN 300 PEOPLE SINCE THE OUTBREAK
- CASES HAVE BEEN DETECTED IN THAILAND, JAPAN AND SOUTH KOREA
- VIRUSES ARE TRANSMITTED BETWEEN ANIMALS AND PEOPLE
- COMMON SYMPTOMS INCLUDE FEVER, COUGH, SHORTNESS OF BREATH AND BREATHING DIFFICULTIES
- CAUSES COMMON COLD TO ACUTE RESPIRATORY SYNDROMES
- SEVERE INFECTION CAN CAUSE PNEUMONIA, SEVERE ACUTE RESPIRATORY SYNDROME, KIDNEY FAILURE AND EVEN DEATH
- NO VACCINE TO PROTECT AGAINST THIS FAMILY OF VIRUSES

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING
BANDRA - MUMBAI

Image : poster of corona virus.

NSS SPECIAL CAMP

TANDULWADI

INTRODUCTION

Every year a special NSS camp of 7 days takes place where all the volunteer of NSS CRCE actively take part in understanding the village problems solving them and spreading awareness and educating people. This year the camp took place at beautiful and enchanting village called tandulwadi which is located few kilometre away from saphale city which lies in palghar district, Maharashtra. The village is surrounded by mountains and farms with greenery everywhere being there is like a gift for the eyes. The village is full of friendly and helpful people who helped us through out the camp. There were lot of pre- camp activities to be done for all the activities we were going to do at the camp and our main project which was painting the school walls; hence, all the members were divided into groups and given tasks accordingly.



Image: Tandulwadi village, Saphale

Day 1: Sarpanch visit

15th December 2019

The first day of NSS special camp started on 15th December 2019 where everyone was told to report at saphale station by 9.00 A.M and then further we started our journey to tandulwadi village and reached there by 10.30 A.M . The sarpanch of the village welcomed us, after everyone settled we interacted with sarpanch and he told us about various problem faced by the village. Then at the end everyone gathered and discussed for a solution for the problems faced by villagers, we also discussed and planned for the next day activity which was sports day and made groups of people and divided all the responsibilities for the sports day activity among the groups.



Image: Volunteers interacting with sarpanch of the village **Day 2: Sports Day**

16th December 2019

On the second day all the volunteers headed towards the school with enthusiasm and excitement for the sports day activity. We first met the principle of the school and discussed how we were going to conduct the activities. Then everyone interacted with the children of the school and they were full of energy and were eagerly waiting for us to start the activity. There were various activities conducted simultaneously and we saw to it that everyone would get a chance to participate in all activities. We conducted activities such as hopping, running, sakli, football,ect. For the nursery kids we kept a drawing competition in which all the material was provided by us. Then at the end we distributed prizes to all the winners. At the end of the day all volunteers gathered and discussed about school wall painting which is our main project starting tomorrow.



Image: Prize distribution to all the winners

Day 3: School Wall Painting

17th December 2019

The third day was an important day as we were starting our main project which is the school wall painting. First sanding of the walls was done where all the volunteers were given sand papers and sanding of the walls to be painted was done. Then after sanding we had to apply base paint on the walls and fill holes on the walls with cement; hence, all the walls to be painted and the holes to be cemented were divided among all the volunteers and everyone showed a great team spirit leading to completion of the painting and cementing. Now we had to wait for the next day for the paint to dry so that we could draw cartoons and paint them making the walls fun and something the children would love.

Image: Volunteer painting the school wall



Day 4:
School

Mentoring and Wall Painting

18th December 2019

On the fourth day we donated two computers to the school and also had to complete the remaining drawings on the wall. Some volunteers helped the children set up the computer and taught them all the basics of operating the computer, they also taught them paint and all the parts of the computer, while the other volunteers were drawing cartoons on the wall and painting them. Our project of school wall painting was completed by the end of the day.



Image:School MentoringImage:Volunteers drawing and painting cartoons on wall

Day 5: Survey

19th December 2019

On the fifth day all the volunteers according to their group went to the village and took a survey of the village. We took surveys to know about their work, income, education, living, total family members in the house and what do they do,etc. We also asked them how the government is helping them and what problems they are facing and if they are getting any help with their problems. The motive of the survey was to know and understand their problems so that next year when we go we can do some development and help them with it.



Image: Volunteers taking survey

Day 6: Trekking

20th December 2019

On the sixth day of NSS Camp we were all set to go for trekking to explore the nature. We went for trekking on Tandulwadi fort which is a famous trekking spot, where many people come from different places to explore the beauty that lies in Tandulwadi. We started our trekking in the morning by 6:00 A.M and came back in the afternoon by 3:00 P.M. Everyone was super excited as trekking was everyone's favourite adventure sport. The fort was build 800 years ago and it was primarily used as a watch tower over surroundings plain. The village Tandulwadi was beautiful but we came to know about its real beauty when we saw it from the fort its was marvellous.



Image: Trekking at Tandulwadi Fort

Day 7: Awareness and Tree Plantation

21st December 2019

On the 7th day the final day of the camp, we called doctors from the Chaitanya foundation who educated young girls about menstrual hygiene and puberty. After the awareness seminar was over with the help of school students we planted some sampling so that they should have value of plants and learn to protect our ecosystem. The students took active part in planting the sampling and promised to take good care of them until they are all well grown.



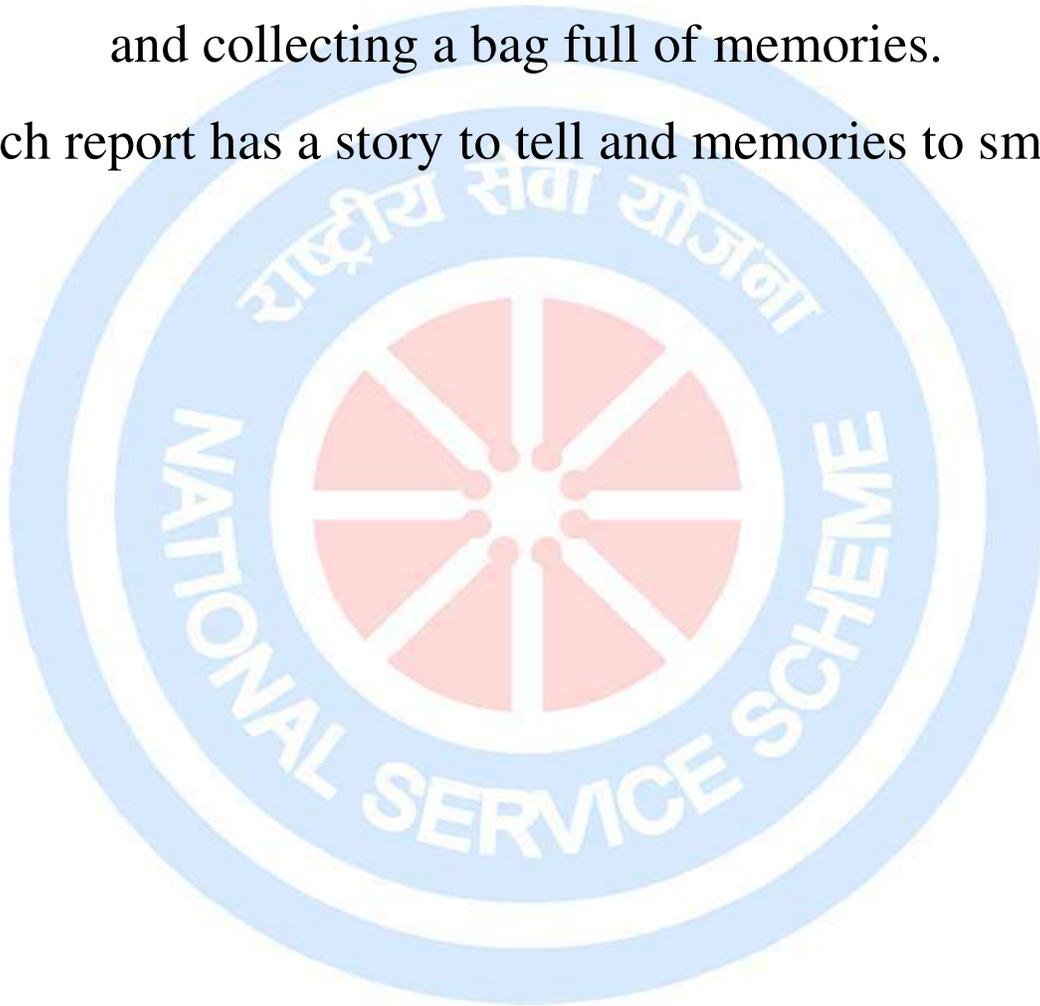
Image: Doctors giving seminar to young girls

Image : Doctors making girl child aware.

Thank you

For giving this opportunity
to have a wonderful journey with NSS
and collecting a bag full of memories.

Each report has a story to tell and memories to smile.



FR.CONCEICAO RODRIGUES COLLEGE OF ENGINEERING

Father Angels Ashram Road, Bandra West, Mumbai, Maharashtra 400050.

REPORT OF ROTARACT CLUB OF FRCRCE

(2019-20)

The Rotaract Club of CRCE has been affiliated with the Rotary Club of Bombay Bandra, which has recognized the efforts that the Rotaract Club of Fr. CRCE has put in order to make a difference to society. This year Rotaract Club of Fr. Agnel College (Bandra West) is affiliated to Father Agnel Ashram and NGO called Bigger Than Life. Bigger than Life (BTL) is an NGO who reaches out to the underprivileged children and their families who stay in the slums of Bandstand. This club organizes many events in odd and even semester like donation drive, Cleanliness Drive, Marathon, trek, and many more to help and to raise the fund for charity. It also creates awareness of education for underprivileged women and children through Marathon and other events. This club has donated Rs. 15k to Father Agnel Ashram and 15 K to BTL NGO.

List of council members 2019-20

Name	Post	Class
CORE TEAM (SC)		
Rtr. Nachiket Nisal	President	TE IT
Rtr. Aishwarya Parulekar	Vice President	TE ELEX
Rtr. Cassia Vaz	Secretary	TE COMPS
Rtr. Mohit Kunder	Joint Secretary & Technical Head	TE COMPS
Rtr. Pranavnath Tiwari	Sergeant at arms officer & Marketing Head	TE PROD
Rtr. Simren Batra	Public Relations Head	TE IT
Rtr. Dhvani Rajgaur	Treasurer	TE PROD
BOARD OF DIRECTORS (JC)		
Rtr. Mukesh Purohit	Club Service Director	SE PROD
Rtr. Hanita Rego	Community service director	SE IT
Rtr. Ashish Bandarkar	Marketing Directors	SE IT
Rtr. Saloni Khanna	Marketing Directors	SE IT
Rtr. Hrithik Gupta	Professional Development Director	SE Elex
Rtr. Saptarshi Chatterjee	Taskforce Director	SE ELEX
1)Rtr. Leandra Monteiro 2)Rtr. Kraig Fernandes	Public Relations Director	SE IT SE Elex

List of activities conducted 2019-20

SR. NO	ACTIVITY	INFORMATION	DATE	PARTICIPATION
1	Amazing Race	A treasure hunt across Bandra west.	30-08-2019	Students- 90
2	Footpool (Synergy)	Combination of Football & Pool.	30-08-2019	Students– 78
3	FootSlog	Annual Trek for the college students.	14-09-2019	Students– 105 Teachers – 02
4	Mic Drop	A multi-genre event celebrating music, comedy, poetry and much more.	09-10-2019	Students– 185 Teacher – 02
6	Heart & Sole Run 3	3 rd edition of the annual Charity Run which is not limited to just college students.	01-03-2020	Students– 700 Teachers – 05
7	Our Only Home	NGO Project with BTL NGO for teaching kids about environmental issues	4 Weekly sessions in the Month of September	Students– 25
8	Building A Rockstar LinkedIn Profile	A seminar for the students of our college to help them understand the importance of LinkedIn, and guide them to build a professional LinkedIn profile. by Dr. Khushbhu Trehan. She is a Professor and Employability Trainer, Dale Carnegie Certified Trainer, and British Council Certified IELTS Trainer.	5th May, 2020 at 4PM- MODE-ONLINE	Students–70

Submitted by



Dr. Sujata Deshmukh

Amazing Race: **Photos:**





District 3000
ROTARACT 1/2

ROTARACT CLUB OF Fr. CRCE
Presents

BUILDING A ROCKSTAR LinkedIn PROFILE

For YoungGen Engineering Graduates



By Dr. Khushbhu Trehan
*Professor and Employability Trainer,
 Dale Carnegie Certified Trainer,
 British Council Certified IELTS Trainer*

MAY 5th, 2020
at 4PM



Donation Drive

TEDxCRCE with **NSS CRCE** and **Rotaract Club of Fr.CRCE** collaborated with **NGO CHAITANYA** to organize a food distribution drive for the people of Maharashtra.

Due to continuous rains for several days, some parts of Maharashtra were heavily flooded. This calamity had caused an immeasurable devastation and a drastic effect on people's lives. We organized a distribution drive in our college and urged the students to donate items like toiletries, clothes, food items and other essentials which help those in need.

Students came forward and willingly donated many items, the list of which has been attached. The items were sent to the Chaitanya foundation by NSS CRCE who then made sure that they reach the affected people.

Duration: 14th August to 23rd August

Place where boxes were kept: 1st, 3rd, 5th and 7th floors of our college.



MShetty
Moral Shetty

Rachhi
Rachhi Patil

Meera Ghaskadri
TEDx CRCE
Moral Shetty

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Pawfect

TEDxCRCE had organized **Pawfect**, an NGO session collaborating with a non-profit trust, The Welfare Of Stray Dogs for our community member.

The Welfare of Stray Dogs (WSD) is a non-profit trust which aims at helping street dogs by reducing street dog population by means of adoption and educating society about rabies prevention and other related street dog issues. WSD has impacted the lives of 1.5L street dogs through CV sterilization, vaccination, healthcare and adoption. All the dogs are vaccinated and safe to be around.

Activities like walking, feeding, bathing the dogs took place under the supervision of the volunteers of the NGO.

- We had a maximum CAP of 36 entries for 3 sessions in total.
- Date : 21st September 2019 (Saturday)
- Time slots : 10am - 11am, 11am - 12pm, 12pm - 1pm
- Location : The Welfare of Stray Dogs, Adarsh Nagar, Lower Parel, Mumbai.

Attendance: 40 people



P. Prachi
Prachi Patel

Meera Ghaskadur
TEDx CRCE
M Ghaskadur

Agnel Ashram

TEDxCRCE had organized a character building session with the children of the Agnel Ashram for our community members.

We conducted a session on Tuesday 24th September, 2019 on 'Gender Equality'. It was a great experience for us to teach the children and see them work so hard inspite of their underprivileged background and unavoidable circumstances. The children of the Ashram learned a lot about gender equality. By teaching them about something different, we raised awareness about Gender Equality among the children of the Agnel Ashram.

The Council Members of TEDxCRCE also had a fun session on 16th September 2019 before the character building session with the kids of the Ashram. They played fun games and did an interactive session to get to know the kids.

The sessions took place in college itself in the Ashram building.

Timing - 4pm.

Day – Tuesday (24/09/19).

Attendance – 21 people



MShetty
Monali Shetty

Prachi
Prachi Patel

Meera Ghaskadri
TEDx CRCE
Mghaskadri

Community
Service
Agnel Ashram

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Agnel Ashram Session

Name	Batch
1) Sherwyn	A
2) Sadiya	
3) Atharva Buit	C
4) Madhvendra	A
5) Sakshi Chavan	C
6) Pearl Bharti	C
7) Sifra Biju	C
8) Amrutha Sureshkumar	D
9) Rachel Sequera	E
10) Insiya	A
11) Kaustubh Mishra	D
12) Travis	D
13) Happy	D
14) Sanskriti	D
15) Ayushi Thakur	D
16) Shruti Shetty	D
17) Anna BG	D
18) Akshata Jadhav	D
19) Meera Ghaskadvi	TE IT
20) Maria Anthony	TE Flex
21) Nolita Rego	TE Coups

Meera Ghaskadvi
TEDx CRCE
Meera Ghaskadvi

Roti Bank

TEDxCRCE had organized A Food Distribution Drive with the help of Roti Bank Association exclusively for our community members on 28th and 29th of September, 2019.

Roti bank was set up in order to solve the problems of food wastage in Mumbai. It's food distribution drive aims at redistributing the surplus amounts of food collected from various hotels, weddings and other events to feed the underprivileged and to those in need.

TEDxCRCE takes immense pride in providing this golden opportunity to our Community Members to fight against hunger together.

Date : 22/09/19 (Sunday), 28/09/19 (Saturday), 29/09/19 (Sunday) & 5/09/19.

Time : 4:30 p.m.

Location : Opposite Haffkinn Institute, Lower Parel (E)

Attendance : 24 people



The drive commenced at 4:30pm and was successfully completed in an hour. The members helped the poor and deprived people with distributing food to each and every person.

Prachi
Prachi Patel

Meera Ghaskadri
TEDx CRCE
M Ghaskadri

ROTI BANK

Sr no	Name	Class	Date
1	Nash Rajesh Vaz	SE	05-10-2019
2	Alrich Kudel	SE	05-10-2019
3	Syed Irfan Amjad Abidi	FE	05-10-2019
4	Manoah Jeyaraj	SE	05-10-2019
5	Cyril Varghese	SE	05-10-2019
6	Rohit Nair	FE	05-10-2019
7	Adnan Zafar Diwan	SE	05-10-2019
9	Gladden Rumao	SE	05-10-2019
10	Rachael Lobo	TE	28-09-2019
11	Benita Rego	TE	28-09-2019
12	Cleona Pereira	FE	28-09-2019
13	Noel James	SE	28-09-2019
14	Reyna Binny	FE	28-09-2019
15	Rebecca D'souza	TE	28-09-2019
16	Sakshi Shetty	FE	29-09-2019
17	Ayush Tomar	SE	29-09-2019
18	Gayatri Varma	SE	29-09-2019
19	Nolita Rego	TE	28-09-2019
20	Nikhil Sharma	SE	28-09-2019
21	Samantha Mascarenhas	SE	22-09-2019
22	Lancylord D'monte	SE	22-09-2019
23	Ayaan Shaikh	SE	22-09-2019
24	Ninad Shetty	SE	22-09-2019
25	Maria Anthony	TE	22-09-2019

Mshetty
Monali Shetty

Prachi
Prachi Patil
Meera Ghaskadwani
TEDxCRCE
Mghaskadwani

Roti Bank Tata Marathon drive

TEDxCRCE had organized A Food Distribution Drive with the help of Roti Bank Association exclusively for our community members.

Date : 19/1/2020 (Sunday)

Time : 1.30p

Location : Azad Maidan, Churchgate.

Attendance : 61

Roti bank collaborated with Tata Mumbai Marathon to distribute the surplus food items from thTata Mumbai Marathon that happened on the same day and distribute it to the ones in needy. The TEDxCRCE council and community members helped Roti Bank in loading and unloading of the items and to provide them to the needy.

Students participated in large numbers and worked very hard for such a noble cause. It started on time and everything wrapped up in two hours.



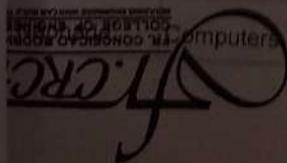
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Semi
(Roti Bank) Marat

Prachi
Prachi Patil

Meera Ghasgadri
TEDxCRCE
Meera Ghasgadri

Age No.:
Date:

	Department	Class	Mobile No.
Rohit Nair	Electronics and Computer Science	FE B	8104365127
Syed Irfan Amjad Abidi	Computers	FE B	9819308655
Rendell Rocky padu	Electronics and Computer Science	FE B	9892800672
Iwan Adnan Zatar	Production	FE B	9004623136
ny Mathew	Computers	FE B	7506220741
isha Fernandes	Computers	FE E	8433757694
asika Ramchandra rkar	Computers	FE E	7385344899
ppy Cherian	Computers	FE D	7057611379
diya Shaikh	Mechanical	FE E	8879340993
GNESH BHOI	Mechanical	FE A	8652178781
atri Varma	Electronics and Computer Science	FE E	8828295153
idan Fernandes	Mechanical	FE B	9920410177
ha Gonsalves	Computers	FE E	7066629342
i D'souza	Electronics and Computer Science	FE B	9967526330
ca D'Souza	Computers	FE B	8379962174
s Rao	Computers	FE E	9892093890
IEL SEQUEIRA	Computers	FE E	9004711362
i Jain	Computers	FE D	9029082001
a buit	Computers	FE D	9619905543
Rajbhar	Electronics and Computer Science	FE D	9757465797
	Computers	SE	7020011979
Almeida	Computers	SE	8007219906
	Computers	SE	9822574435



 FT.CRC

ragati Rao	Electronics	TE	8879904307
arkirat Dassan	IT	TE	9969284018
olita Rego	Computers	TE	7715816259
akshi Khochare	IT	TE	9167374946
yaan Sheikh	Electronics	SE	7506141217
ikhil Sharma	Electronics	SE	877967812
yril Varghese	Production	SE	7264816003
ancylord D'monte	IT	SE	9762776356
ladden Rumao	Computers	SE	7448249452
amantha			
ascarenhas	Computers	SE	9765197281
ustin Issac	Computers	FE	

Meera Ghaskadvi
Co-Organizer
TEDx CRCE

Meera Ghaskadvi

Prachi

Prachi Patil

Mohit

Mohit Shetty

Environment and Sustainability

- Courses offered in Curriculum
- Activities by NSS
- Activities by Rotaract Club

T.E. (Production) Sem.-V

Course Code	Course Name	Teaching Scheme (Contact Hours)		Credits Assigned					
		Theory	Pract	Theory	Pract	Total			
PEC501	Design of Mold & Metal Forming Tools	04	--	04	--	04			
PEC502	Operations Research	03	--	03	--	03			
PEC503	Machine Design-I	04	--	04	--	04			
PEC504	CAD/CAM/CIM	04	--	04	--	04			
PEC505	Metrology & Quality Engineering	04	--	04	--	04			
PEDLO 501X	Department Level Optional Course I	03	--	03	--	03			
PEL501	Design of Mold & Metal Forming Tools Laboratory	--	02	--	01	01			
PEL502	Machine Design-I Laboratory	--	02	--	01	01			
PEL503	CAD/CAM/CIM Laboratory	--	02	--	01	01			
PEL504	Metrology & Quality Engg Laboratory	--	02	--	01	01			
PEL505	Business Communication & Ethics	--	02 ⁺ +02	--	02	02			
	Total	22	12	22	06	28			
Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract. /Oral	Total
		Internal Assessment			End Sem Exam	Exam. Duration (in Hrs)			
		Test1	Test 2	Avg.					
PEC501	Design of Molds & Metal Forming Tools	20	20	20	80	03	--	--	100
PEC502	Operations Research	20	20	20	80	03	--	--	100
PEC503	Machine Design-I	20	20	20	80	03	--	--	100
PEC504	CAD/CAM/CIM	20	20	20	80	03	--	--	100
PEC505	Metrology & Quality Engg.	20	20	20	80	03	--	--	100
PEDLO 501X	Department Level Optional Course I	20	20	20	80	03	--	--	100
PEL501	Design of Mold & Metal Forming Tools Laboratory	--	--	--	--	--	25	25	50
PEL502	Machine Design-I Laboratory	--	--	--	--	--	25	25	50
PEL503	CAD/CAM/CIM Laboratory	--	--	--	--	--	25	25	50
PEL504	Metrology & Quality Engg Laboratory.	--	--	--	--	--	25	25	50
PEL505	Business Communication & Ethics Laboratory						50	--	50
	Total			120	480		150	100	850

* **Theory for entire class to be conducted.**

Course Code	Department Level Optional Course I
PEDLO5011	Internal Combustion Engines
PEDLO5012	Finite Element Analysis
PEDLO5013	Plastic Engineering
PEDLO5014	Micro and Nano Manufacturing
PEDLO5015	Sustainable Manufacturing

Course Code	Course Name	Credits
PEDLO5015	Sustainable Manufacturing	03

Objectives

1. To introduce basic concepts related to sustainability and sustainable development.
2. To get conversant with indigenous and global concerns about sustainability and its implications in manufacturing.
3. To familiarize with various technological innovations, approaches & environmental standards /legislations to promote sustainable development.

Outcomes: Learner will be able to...

1. Illustrate the agenda of indigenous and global sustainability to fulfil green expectations.
2. Demonstrate the knowledge about management of waste, pollution & energy conservation.
3. Demonstrate the knowledge of sustainability issues with its implementation in manufacturing.
4. Illustrate the relevance and implications of environment friendly materials.
5. Illustrate the implications of environment management in the context of modern industrial practices.
6. Develop the sustainability approach in environmental strategy and manufacturing.

Module	Contents	Hrs.
01	Sustainability: Basic concepts related to sustainability and sustainable development. Issues and challenges facing sustainable development. Global & indigenous sustainability agenda, green expectations & green movement.	04
02	Management of waste & pollution: Types, sources and nature of wastes, waste processing, green processing & engineering operations, Energy recovery, and 3 R principle. Types of pollution and management:-Anti pollution approaches & guide lines.	08
03	Management of Energy: Sources of energy, renewable energy, Innovations in generation, conservation, recycling and usage of energy. Energy audit and implications.	07
04	Environment friendly materials : Materials for sustainability , eco-friendly and new age energy efficient and smart materials , alternative manufacturing practices , materials and selection of manufacturing processes , control on use of renewable materials , Bio-degradable materials recycling of materials.	07
05	Environment Management : Innovations for reuse , bio-processing technology , sustainable loading on ecosystems , concept of eco-efficiency and its implementation , Environment analysis from raw materials to disposal (cradle to grave concept) sustainable design and materials for sustainable design , Environmental standards and legislations. ISO 14000, carbon foot print, anti-pollution boards, Environment management in business world, changing scenario in global perspective.	08

06	Integrating sustainability approach: Environmental issues in operating strategy, creating sustainable manufacturing, promoting sustainability awareness, sustainability rating schemes, eco-labelling programmes, human values and professional ethics in sustainable manufacturing. Encouraging innovations in sustainable manufacturing.	06
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Assessment:

Internal Assessment for 20 marks:

Consisting Two Compulsory Class Tests

First test based on approximately 40% of contents and second test based on remaining contents (approximately 40% but excluding contents covered in Test I)

End Semester Examination:

Weightage of each module in end semester examination will be proportional to number of respective lecture hours mentioned in the curriculum.

1. Question paper will comprise of total **six questions, each carrying 20 marks**
2. **Question 1** will be **compulsory** and should **cover maximum contents of the curriculum**
3. **Remaining questions will be mixed in nature** (for example if Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4. Only **Four questions need to be solved**

Reference Books:

1. *Strategic Management of Sustainable manufacturing operations* (Advances in logistics operations & Management) By. Rameshwar Dubey & Angappa Gunabekaran by Imuste Productivity press.
2. *Analysis for Smart energy management: Tools and applications for sustainable manufacturing.* By Seog-chanoh and Alfred .J.Hildreth , Springer Series.
3. *Advances in sustainable Manufacturing* By Gunther Seliger and Marwan M.K. khraishah, Springer Series
4. *Green Management* by M.Karpagam, Geetha Jaikumar, Ane Books Pvt.Ltd.
5. *Design for Environment: A guide to sustainable Product Development.*
6. *Sustainable Development* By M.K. Ghosh Roy Ane Books Pvt.Ltd,

B.E. (Production) Sem.-VIII

Course Code	Course Name	Teaching Scheme (Contact Hours)		Credits Assigned		Total			
		Theory	Pract	Theory	Pract				
PEC801	Fluid Power & Automation	04	--	04	--	04			
PEC802	Industrial Engineering and Human Resource Management	04	--	04	--	04			
PEC803	Economics, Finance, Accounting & Costing	04	--	04	--	04			
PEDLO 803X	Department Level Optional Course III	04	--	04	--	04			
ILO802X	Institute Level Optional courses	03	--	03	--	03			
PEL801	Fluid Power & Automation Laboratory	--	02	--	01	01			
PEL802	Industrial Engineering and Human Resource Management Laboratory	--	02	--	01	01			
PEL803	Economics, Finance, Accounting & Costing Tutorial	--	02	--	01	01			
	Total	19	06	19	03	22			
Examination Scheme									
Course Code	Course Name	Theory					Term Work	Pract. /Oral	Total
		Internal Assessment			End Sem. Exam.	Exam. Duration (in Hrs)			
		Test1	Test 2	Avg.					
PEC801	Fluid Power & Automation	20	20	20	80	03	--	--	100
PEC802	Industrial Engineering and Human Resource Management	20	20	20	80	03	--	--	100
PEC803	Economics, Finance, Accounting & Costing	20	20	20	80	03	--	--	100
PEDLO 803X	Department Level Optional Course III	20	20	20	80	03	--	--	100
ILO802X	Institute Level Optional courses	20	20	20	80	03	--	--	100
PEL801	Fluid Power & Automation Laboratory	--	--	--	--	--	25	25	50
PEL802	Industrial Engineering and Human Resource Management Laboratory	--	--	--	--	--	25	25	50
PEL803	Economics, Finance, Accounting & Costing Tutorial	--	--	--	--	--	25	--	25
	Total			100	400		75	50	625

Course Code	Department Level Optional Course III	Course Code	Institute Level Elective Course II[#]
PEDLO8011	Product Design and Industrial Marketing	ILO8021	Project Management
PEDLO8012	World Class Manufacturing	ILO8022	Finance Management
PEDLO8013	Logistics and Supply Chain Management	ILO8023	Entrepreneurship Development and Management
PEDLO8014	Plant Engineering	ILO8024	Human Resource Management
PEDLO8015	Process Control and Instrumentation	ILO8025	Professional Ethics and CSR
		ILO8026	Research Methodology
		ILO8027	IPR and Patenting
		ILO8028	Digital Business Management
		ILO8029	Environmental Management

Course Code	Course Name	Credits
PEDLO8011	Product Design and Industrial Marketing	04

Objectives

1. To acquaint with various approaches in designing and developing new products.
2. To familiarize with various software solutions for designing and developing products.
3. To familiarize with modern approaches like concurrent engineering, product life cycle management, robust design, rapid prototyping / rapid tooling, etc.
4. To familiarize with characteristics of business markets, buying situations, trends in industrial marketing and relevant industrial strategies.

Outcomes: Learner will be able to...

1. Design and develop products right from the conceptual level.
2. Demonstrate concept of computer aided product design approach.
3. Illustrate various modern approaches like concurrent engineering, product life cycle management, robust design, rapid prototyping / rapid tooling.
4. Analyze products based on ergonomics and aesthetic aspects.
5. Apply appropriate strategies in industrial marketing.
6. Demonstrate various aspects related to Industrial Marketing Communication, Advertising, Sales promotion, Publicity Media Plan.

Module	Contents	Hrs.
01	<p>1.1. Introduction: Definition of product design, Classification of products, Design by evolution, Design by innovation, Product Mix, Various phases in product development and Design, Morphology of Design, Considerations in product design, Product specifications.</p> <p>1.2. Conceptual Design: Market research, Generation, Selection and Embodiment of concept, Product Architecture, Customer centric product designing</p> <p>1.3. Creativity: Role of creativity in problem solving, Vertical and lateral thinking, Brain storming, Synectics, Group working dynamics, Adaptation to changing scenarios in economics, social, cultural and technological fronts, Anticipation of new needs and aspirations.</p> <p>1.4. Materials: Overview of materials including new generation materials, Tailor made material concepts, Material selection process.</p>	06
02	<p>2.1. Design for manufacturing (DFM): Guidelines and Methodology, Producibility requirements, Accuracy and Precision requirements, Strength considerations in Design: Criteria and objectives, Designing for uniform strength, Designing for stiffness and rigidity, Practical ideas for material saving in design - ribs, corrugations, rim shapes, bosses, laminates, etc.</p> <p>2.2. Design for forged and Cast components, Design for Sheet Metal processed components, powder metallurgical components, Expanded metals and wire forms</p>	12

	<p>2.3. Designing with plastics: Mechanical behavior, special characteristics and considerations, Design concepts for product features to be manufactured by various production process technologies, Special considerations for designing of components for load bearing applications,</p> <p>2.4. Other DFX Principles : Designs for Maintainability, Safety, Reliability, Sustainable Design</p> <p>2.5. Design for Assembly (DFA): DFA Index, Analysis of assembly requirements, Standardization, Ease of Assembly and disassembly, Design for bolted, welded and riveted components, Design for hinge and snap fit assemblies, maintenance, consideration of handling and safety, Modular concepts.</p>	
03	<p>3.1. Product Ergonomics: Anthropometry, Environmental conditions, thermal, noise, vibration, displays, illusions, Psycho and psychological aspects in design, Man-machine information exchange.</p> <p>3.2. Product Aesthetics: Visual awareness, Form elements in context of product design, Concepts of size, shape and texture, Introduction to colour and colour as an element in design, Colour classifications and dimensions of colour, Colour combinations and colour dynamics, Interaction / communication of colours, Psychological aspects of colours, generation of products forms with analogies from nature.</p> <p>3.3. Product Graphics: Graphics composition and layout, Use of grids in graphics composition, Study of product graphics and textures.</p>	06
04	<p>4.1. Value Engineering: Product value and its importance, Value analysis job plan, Steps to problem solving and value analysis, Value analysis tests, Value Engineering idea generation check list, Material and process selection in value engineering, Cost reduction, case studies and exercises.</p> <p>4.2. Software solutions: Software for drafting, modeling, assembly, detailing, CAM interfacing, Rapid tooling/rapid prototyping, etc.</p> <p>4.3. Modern Applications: Concurrent Engineering, Robust Design, Additive Manufacturing/Rapid Prototyping, Product Life Cycle Management techniques and application areas.</p>	08
05	<p>Introduction to Industrial Marketing, Understanding Industrial Markets, Nature of Industrial Buying, Industrial Market Segmentation, New Products and Established product strategies, Resource based and Value based strategy, Industrial Pricing: Price Determinants, Pricing Policies, Pricing Decisions, Pricing - Value based and Competition based.</p>	08
06	<p>6.1. Industrial Marketing Channels: Channel participants, Channel effectiveness, Marketing logistics, Physical Distribution and Marketing Strategy, Value added market channels</p> <p>6.2. Industrial Marketing Communication, Advertising, Sales promotion, Publicity Media Plan, Integrated Promotion Plan, Industrial Sales force Management, Technical Support for Marketing – customer technical services and feedback.</p>	08

Assessment:

Internal Assessment for 20 marks:

Consisting **Two Compulsory Class Tests**

First test based on approximately 40% of contents and second test based on remaining contents (approximately 40% but excluding contents covered in Test I)

End Semester Examination:

Weightage of each module in end semester examination will be proportional to number of respective lecture hours mentioned in the curriculum.

1. Question paper will comprise of total **six questions, each carrying 20 marks**
2. **Question 1** will be **compulsory** and should **cover maximum contents of the curriculum**
3. **Remaining questions will be mixed in nature** (for example if Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4. Only **Four questions need to be solved**

References Books:

1. *Product Design & Development*, Karl Ulrich, Steven Eppinger,
2. *Design Fundamentals*, R. G. Scott.
3. *Design methods inter science*, Jomes.
4. *Creative Engineering Design*, Buhl H. R.
5. *The Science of Engineering Design*, Holt, Hill Percy H.
6. *Ergonomics*, Marilyn Joyce, Ulrika Waller Steiner.
7. *Human Factors in Engineering & Design*, 4th edition
8. *Human Engineering Guide & Equipment Design*, Morgon C. T. & Others
9. *Barron D.ed, Creativity*, New York, Art Directors
10. *Design for Production*, Baldwin E. W. & Niebel B. W. Edwin, Homewood Illinois.
11. *Industrial design of plastic products*, Gordon, 2003
12. *Plastics Engineered Product Design*, Rosato, 2001
13. *Industrial Marketing Analysis, Planning and control* , Robert R Reeder, Edward G Brierty, Betty H Reeder, Prentice Hall India
14. *Industrial Marketing*, Havalder, Krishna K, Tata McGraw Hill, New Delhi.
15. *Industrial Marketing*, P.K.Ghosh, Oxford University Press, New Delhi.

T.E. (Electronics Engineering) – Semester VI

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical	Tutorial	Total
ELX601	Embedded System and RTOS	04	--	---	04	---	---	04
ELX 602	Computer Communication Network	04	--	---	04	---	---	04
ELX 603	VLSI Design	04	--	---	04	---	---	04
ELX 604	Signals and systems	04	--	@01	04	---	01	05
ELXDLO502X	Department Level Optional courses II	04	--	---	04	---	---	04
ELXL601	Embedded System and RTOS Lab.	--	02	--	--	01	---	01
ELXL 602	Computer Communication Network Lab.	--	02	--	--	01	--	01
ELXL 603	VLSI Design Lab.	--	02	--	--	01	---	01
ELXLDLO601 X	Department Level Optional courses III Lab.	--	02	--	--	01	---	01
TOTAL		20	08	01	20	04	01	25

Course Code	Course Name	Examination Scheme – Semester VI							
		Theory					Term Work	Oral /Prac	Total
		Internal Assessment (IA)			End Sem Exam Marks	Exam Duration (Hours)			
Test I	Test II	AVG.							
ELX601	Embedded System and RTOS	20	20	20	80	03	---	---	100
ELX 602	Computer Communication Network	20	20	20	80	03	---	---	100
ELX 603	VLSI Design	20	20	20	80	03	---	---	100
ELX 604	Signals and systems	20	20	20	80	03	25	---	125
ELXDLO602X	Department Level Optional courses II*	20	20	20	80	03	---	---	100
ELXL601	Embedded System and RTOS Lab.						25	25	50
ELXL 602	Computer Communication Network Lab.						25	25	50
ELXL 603	VLSI Design Lab.						25	25	50
ELXLDLO602 X	Department Level Optional Courses II*Lab.						25	25	50
Total		100	100	100	400	15	125	100	725

Course Code	Department Level Optional Course II
ELXDLO6021	Microwave Engineering
ELXDLO6022	Electronics Product Design
ELXDLO6023	Wireless Communication
ELXDLO6024	Computer Organization and Architecture

Course Code	Course Name	Teaching Scheme			Credits Assigned			
		Theory	Practical	Tutorial	Theory	TW/Practical	Tutorial	Total
ELX DLO6022	Electronic Product Design	04	---	---	04	---	---	04

Course Code	Course Name	Examination Scheme						
		Theory Marks				Term Work	Oral & Practical	Total
		Internal Assessment (IA)			End Semester Examination			
		Test I	Test II	Average				
ELX DLO6022	Electronic Product Design (EPD)	20	20	20	80	---	---	100

Rationale :- The aim of this course is to enable students to gain practical experience & nurture their creativity in electronic product design & the objective is to provide students with a clear understanding of the practical design problems of the electronic products at an introductory level. With this course, students are expected to become familiar with the concept of designing a product as per the requirements (non-technical) & given specifications (technical), component tolerances, production constraints, safety requirements & EMC standards.

Course Objectives:-

1. To understand the stages of product (hardware / software) design & development
2. To learn different considerations of analog, digital & mixed circuit design
3. To be acquainted with methods of PCB design & different tools used for the same
4. To be aware of the importance of testing in product design cycle
5. To gain knowledge about various processes & importance of documentation

Course Outcomes :-

At the end of the course, students should gain the ability to :-

- CO-1 :- Design electronic products using user-centered designing processes
- CO-2 :- Identify & recognize essential design & production procedures of electronic products
- CO-3 :- Implement a prototype for meeting a particular requirement / specification
- CO-4 :- Demonstrate problem solving & troubleshooting skills in electronic product design
- CO-5 :- Prepare the relevant set of design documentation & present it as a case study

Module No.	Topics	Hours
	INTRODUCTION TO ELECTRONIC PRODUCT DESIGN	
1	Man-machine dialog & industrial design, user-centered design, elements of successful design, cognition, ergonomics, packaging & factors; design for manufacture, assembly & disassembly wiring, temperature, vibration & shock; safety, noise, energy coupling, grounding, earthing, filtering & shielding	06
	HARDWARE DESIGN & TESTING METHODS	
2	Design process, identifying the requirements, formulating specifications, design specifications, system partitioning, functional design, architectural design, functional model v/s architectural model, prototyping, performance & efficiency measures, formulating a test plan, writing all the specifications, test procedures & test cases, design reviews, module debug & testing – black box testing, white box testing, grey box testing	10
	SOFTWARE DESIGN & TESTING METHODS	
3	Types of software, the waterfall model of software development, models, metrics & software limitations, risk abatement & failure prevention, software bugs & testing, good programming practice, user interface, embedded & real-time software	10
	PRINTED CIRCUIT BOARD (PCB) DESIGNING	
4	Fundamental definitions, standards, routing topology configuration, layer stack up assignment, grounding methodologies, aspect ratio, image planes, functional partitioning, critical frequency & bypassing, decoupling; design techniques for ESD protection, guard-band & guard-rings	08
	PRODUCT DEBUGGING & TESTING	
5	Steps of debugging, the techniques for troubleshooting, characterization, electromechanical components, passive components, active components, active devices, operational amplifier, analog-to-digital conversion, digital components, inspection & testing of components, process of simulation, prototyping & testing, integration, validation & verification, EMI & EMC issues	08
	THE DOCUMENTATION PROCESS	
6	Definition, needs & types of documentation, records, accountability & liability, audience, steps in preparation, presentation & preservation of documents, methods of documentation, visual techniques, layout of documentation, bills of materials, manuals – instructional or operating manual, service and maintenance manual, fault finding tree, software documentation practices	06
1 – 6	TOTAL	48

Recommended Books :-

1. R. G. Kaduskar & V. B. Baru, Electronic Product Design, 3rd edition, Wiley India
2. Kim Fowler, Electronic Instrument Design, 2nd edition, Oxford University Press
3. Robert J. Herrick, PCB Design Techniques for EMC Compliance, 2nd edition, IEEE Press
4. G. C. Loveday, Electronic Testing & Fault Diagnosis, 4th edition, A. H. Wheeler Publishing
5. James K. Peckol, Embedded Systems – A Contemporary Design Tool, 1st edition, Wiley Publication
6. J. C. Whitaker, The Electronics Handbook, CRC Press

Internal Assessment (IA) :-

Two tests must be conducted which should cover at least 80% of syllabus. The average marks of both the tests will be considered as final IA marks.

End Semester Examination :-

1. Question paper will comprise of 6 questions, each carrying 20 marks.
2. The students need to solve total 4 questions.
3. Q.1 will be compulsory and based on entire syllabus.
4. Remaining questions (Q.2 to Q.6) will be set from all modules.
5. Weightage of each module in question paper will be proportional to the number of respective lecture hours mentioned in the syllabus



NSS CRCE

Report on climate change seminar.

Place : Fr. C.R.C.E

Date : 22nd June 2019.

Climate change is having serious impacts on the world's water systems through more flooding and droughts. Warmer air can hold a higher water content, which makes rainfall patterns more extreme.

Rivers and lakes supply drinking water for people and animals and are a vital resource for farming and industry. Freshwater environments around the world are already under excessive pressure from drainage, dredging, damming, pollution, extraction, silting and invasive species. Climate change only exacerbates the problem and makes this worse. Extremes of drought and flooding will become more common, causing displacement and conflict.

NSS unit of Fr. Conceicao Rodrigues College of Engineering took this step to make everyone aware about the changes and that they should take certain action or measures for better world. We conducted seminars by showcasing presentation and showing video clips of what is happening in their surrounding. This carried on for a month where each day at least two seminars were covered according to time table.

My role as a leader was to organize seminars, take permission and conduct it. I would like to thank our dean Dr. V. B. Bhoir who helped in arranging class and organizing seminar smoothly.

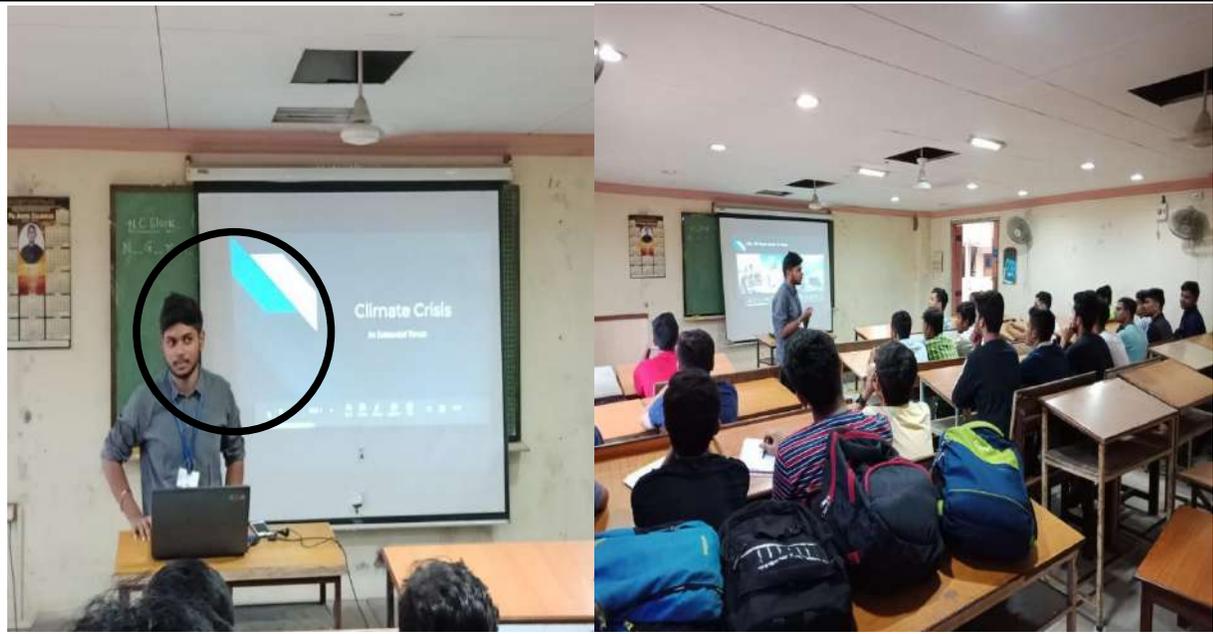


Image : our member taking presentation.



NSS CRCE

REPORT ON TREE PLANTATION WITH SOCIETY PEOPLE

Place: Emerald Court Garden Mumbai (Andheri w)

Date: 5th JULY 2019.

Every man need the oxygen for their life and Trees are the foremost source of oxygen as well trees helps to reduce the level of co2. As we all know that the whole world is facing the problem of global warming and to recover from such problem planting the trees has become one of the most important today's aspects.

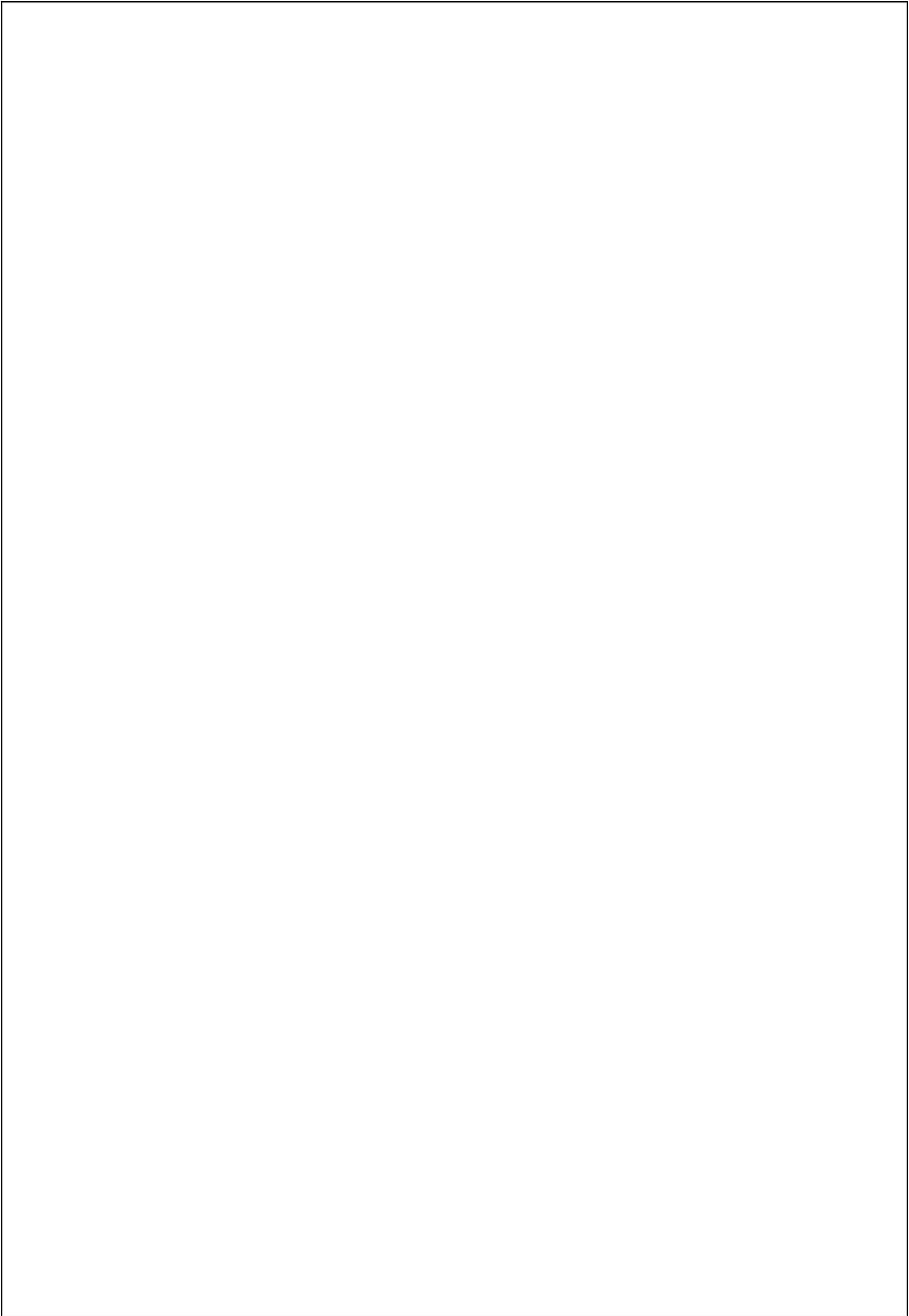
NSS Unit of **FRCRCE** organized "**Tree Plantation**" programme "**MY EARTH – MY DUTY**" under the National Service Scheme (NSS) on Friday, 5th July, 2019 in the Emerald Court Garden premises. It was attended by NSS Programme Coordinator, Society People and more than 10 student volunteers.

The event was begun with the welcome speech by the NSS event coordinator. At that time coordinator advised the volunteers to think differently for the society, to make positive changes and to make improvement. My role here was to arrange saplings and collected society people and arrange for this programme.



Image : Society ladies helping in plantation.

After the inspirational words of NSS coordinator, we all move towards the place where tree plantation took place. Total tree planted by all others including Society, volunteers and other students was more than 30 on the day. Under the Guidance of NSS Program Coordinator, NSS volunteers and Society people of their area planted more than 20 trees. The students also placed bricks as barricades and each student took the responsibility to nourish and maintain the allocated plant. Eventually, the ground attained a glorious look. The committee decided to proceed with the same inspiration, enthusiasm and zeal to enhance the beauty of the campus.





NSS CRCE

REPORT ON TREE PLANTATION

Date: 8th August 2019

Place: Mumbai.

“Reversing deforestation is complicated; planting trees is simple”



Image : one of our nss member planting.

Fr. CRCE launched an extensive plantation programme in St. Peter's high school on August 8. As a part of national service scheme our institute binds to contribute to the activities which are beneficial to the improvement of the society. The students and teachers from our college planted saplings in empty places in well organized manner. The tree plantation programme started at 10am. In order to restore the eco-balance of the afforestation this drive was taken with all seriousness. Trees play an important role in reducing the air pollution and to maintain the good quality air level in environment. So every individual should plant as many trees as possible . Because day by day pollution level in environment is getting worse. Hence, plantation is the only solution. As the surrounding of St . Peter's high school is crowded by vehicles so it may lead to increase the pollution level in that area. As it is also surrounding by educational institute ,tree plantation will help to maintain the good air quality.



Image : turning tide founder Mr. George giving instruction to our Nss members.

This tree plantation programme was done in collaboration with turning tide George Sir who helped us a lot. All necessary support was provided to students and thus the programme was successfully completed.

Participants were highly excited and enthusiastic to make it a big success. Many trees were planted like neem, Ashoka, Queen's flower, tulip tree, fountain tree. Fruits like guava, mango, etc. were planted. Participants planted, fenced and watered the plants. Students understood the importance of plantation and types of trees beneficial for environment.



Image : group pic of plantation drive.



NSS CRCE

Report on Bottles for change.

Place :Bisleri,Andheri [east]

Date : 21st august 2019.

Bisleri a leading no one company in beverages and distilled drinking water which was founded in 1965, with the increasing amount of plastic spread which is harming our environment,Bisleri has taken this initiative by showcasing that plastic is not the problem, but plastic waste created by irresponsible human behaviour is the problem this can be only be fixed, by changing our habits.

This initiative taken by bisleri Bottles for Change aims to create awareness among the citizens,about the importance of recycling plastic, and create an effective channel through which the various kinds of used plastic can be sent directly for recycling.

This bisleriinitiative bottles for change in collaboration with NSS to make schools colleges and society aware about the condition and recycling of plastic played a important role, we could collect 1 ton of plastic in our college and made all our students and staff aware about this initiative.

NSS unit of Fr. Conceicao Rodrigues College of Engineering is very thankful to bisleri and NSS to take this initiative for betterment of society and world.

Process in brief :

1. Introduction about bottles for change followed by awareness.
2. Segregation of clean plastic at user end.
3. Collection of plastic by plastic agents.
4. Sending collected clean plastic directly for recycling.



Image : group picture of NSS volunteer in bottles for change awareness session



NSS CRCE

REPORT ON GANPATIVISARJAN CLEANUP - 1

Place :juhu beach, Mumbai.

Date : 19th September 2019.



Image : condition of Juhu beach before the cleanup

GanpatiVisarjan is an auspicious ritual and a festival that brings people together. But with those festivities enjoyed by a large crowd , The beaches used for visarjan end up with a lot of litter and waste. This litter is very degrading for the environment and the marine life. The beaches also are a huge tourist attractions and provide income to many people . Fr. Conceicao Rodrigues College of Engineering NSS unit took an initiative in collaboration with Asociation of Social Beyond Boundaries foundation to clean up juhu beach located in mumbai suburban, as GanpatiVisarjan beach cleanup . Our enthusiastic volunteers reported at the rendezvous point at the Juhu beach, Mumbai in the morning and started cleaning the beach. The volunteers gave their best for about 5 hours and the results show their hard work. This event made the volunteers realize the impotance of cleanliness and preserving the environment. And how to come up with an better alternative to celebrate ganeshutsav, By using clay idols , paper idols and doing visarjan in artifical ponds or coming up with a metal ganesh idol and reusing it every year.



Image: group picture of volunteers at Juhu beach after the cleanup.



NSS CRCE

Chinbai Beach

Date: 21st September 2019

Place: Chinbai village, Bandra.

On 21st September 2019 which is also international peace day and world coastal cleanup day, To celebrate this day FR. Conceicao Rodrigues College Of Engineering NSS unit in collaboration with united way mumbai had conducted a cleanliness campaign. This beach cleanup campaign was conducted to gain awareness among people to keeping the environment clean and neat as said by anonymous that when you come to sea shore only leave your foot prints and carry your memories.



Image : our volunteers cleaning.

Arriving at the Chinbai Beach in month of September we were unpleasantly surprised. The amount of trash observed while we walking towards our designated spot for cleanup was simply too astonishing.

The objective for our cleanup was to beautify the beach. For this beach cleanup event 30 students for fr. conceicao Rodrigues college NSS unit along with 25 from United way foundation volunteers for this event. A lot of people had gathered for this cleanup with various organizations background and individuals, With this same motto and initiative. we had to do publicity about this cleanup by social media and messages and coordinate united way for collaboration.



Image : Volunteers working for cleanup.

After the briefing all the participants were eager to clean the beach .The cleanup started at 8 am and ended till 11am.The garbage was collect in huge bags and kept at one place .That collect garbage was later taken by the municipality .

I believe this project of NSS has been the most valuable project and priceless experience to all participants.we have been through many challenging experience along this beach clean up for instance the quick stand at some parts of the beach .

Besides, one the biggest challenge was we had to collect all the state rubbish which sometimes emitted a foul smell and we even found some nappies that were thrown inside the rocks. It was aawful yet gave us a challenging experience.

NSS CRCE is grateful to all the praticipants and the United way foundation to give a our members an opportunity to work .



Image : group picture of NSS members



NSS CRCE

REPORT ON WASTE MANAGEMENT SEMINAR

Date : November 15th, 2019.

Place : Mumbai

NSS CRCE conducted a seminar on waste management in collaboration with **RUR foundation** in a society in Andheri East, Mumbai.

RUR GreenLife is a socio-environmental organization, founded in 2009, passionately working for the planet by employing an end-to-end, cradle-to-cradle approach towards urban solid waste management. At RUR, people ideate, design, build and implement customized turnkey 'waste-to-resource' solutions which are sustainable and decentralized for homes, schools organizations and corporate offices. They optimize waste recycling(>90%) and thus minimize the impact on landfills and environment.



Image : RUR Greenlife foundation logo

Vision of the foundation :

- To spread eco-consciousness amongst citizens and help them contribute to our planet by adoption good green practices.

Mission of the foundation:

- Sensitize and educate citizens towards sustainable living
- Develop eco-friendly products as green alternative
- Innovate and design solutions to maximize recycling at source and reduce loads to the landfills.

All the members of the society assembled at the society ground. The seminar began at 10:00 am.



Image: Society members at the seminar

In this seminar, the society members were made aware of the importance of waste management and how to go about accumulating and reducing the waste which is beneficiary for the ecological system. They were instructed about segregation techniques for 3 types of wastes namely WET waste which is BIODEGRADABLE, DRY waste which is RECYCLABLE and TRASH which is NON-RECYCLABLE.

Then they were instructed about the significance of 3R's- REDUCE, REUSE AND RECYCLE – how to reduce the amount of waste, how to recycle the waste and use it again. It was a very informative session.



Image: Society member giving a plant sapling as a token of thanksgiving to the foundation

NSS CRCE and the society members are thankful to the RUR foundation for this session and make us aware about the importance of waste management which is essential for ecological survival and protecting the human and animal special from the harmful side-effects of this waste in our environment.



NSS CRCE

REPORT ON MAKING OF COMPOSE PIT

Date: August 17th 2019.

Place: Mumbai



Image : composed pit.

One of the first steps in changing food culture is to develop a food growing area . A key part of this is having an effective composting system in place. This is a cornerstone of organic gardening and has many benefits to the community and environment. Making compost is not only about providing soil and plants with a source of food, it is an integral part of working organically and reducing waste. Composting provides a useful way for teachers, pupils and catering staff to explore educational opportunities together. Producing compost reduces waste to landfill, greenhouse gases and dependency upon peat based growing media and chemical fertilisers, saving money and the environment.

The NSS Unit of **FRCRCE** organized “**Making Of COMPOSE PIT**” programme under Guidance of Sir George (founder) and the National Service Scheme (NSS) on Saturday, 17th August, 2019 in the Emerald Court Garden premises. It was attended by NSS Programme Coordinator and more than 50 student volunteers.

The event was begun with the welcome speech by the Sir George and NSS event coordinator. At that time Sir George advised the volunteers to think differently for the society, to make positive changes and to make improvement.

Improving soil by using compost is a keystone of organic gardening. Well-made compost is an incredibly useful material. It is a wonderful soil improver, aiding water retention in light sandy soils and breaking up heavy clay soil. As a growing medium it provides nutrients to plants, allowing for vigorous growth and higher yields. When used as mulch it feeds the plant and improves soil. The composting process has many learning opportunities that are accessible to pupils of all ages. Keeping that thought in mind all nss member started building up the compose pit.



Image : volunteers digging for pit.

After all hardwork and determination by NSS member the compose pit was ready. It was a successful event, everyone enjoyed and being a part of the program.

This project is just an initiative by nss member, hoping that in future there will be many more such kind of activities that will insist on giving , by following the quote**‘We make a life by what we give.’**



Image : group pic of Nss members.



NSS CRCE

REPORT ON 1-Week Terrace Garden Project

Date: 18th-24th August 2019.

Place: Fr. Conceicao Rodrigues College of Engineering.

Plantations of trees is important as they improve the life and fulfil essential needs of mankind. During photosynthesis, the trees breakdown food materials and consume carbon dioxide. Resultantly with the help of sunlight, the trees produce carbohydrates. Moreover, trees support life by providing habitat to different species such as squirrels, bees and birds. Trees cleanse the climate by absorbing carbon dioxide from the environment and releasing oxygen. The trees cool the environment through their leaves by absorbing the sun heat. Thus, there occurs cooling in the atmosphere. The trees provide shades to houses and streets.



Image : fund raising stall.

Trees clean the air by absorbing harmful chemicals such as nitrogen oxide and removing dust particles from the air by absorbing them in their leaves. Another importance of planting trees is that they save the water from impurity. Trees stop water pollution by breaking the direct fall of rainfall to the ground. Through trees, we make furniture and produce materials like books and papers. Trees help to relax and to reduce blood pressure. Different species of trees also relax the mood of people.

We had kept a proper fund raising program and list of those who have donated and their record we had kept crystal clear with everyone our principal and director supported and helped us a lot for this initiative.

Pre-planning of the project

Our college has had a long standing tradition of preservation of culture, heritage and flora and fauna. In order to sensitize students towards the need to preserve our environment and ecology, tree plantation drives are organised in our college from time to time. One such drive was held during 18th-24th August.

Firstly our college performed a fund raising campaign for the tree plantation project. Many students showed keen interest in donating for the project and most of the fund required were provided by our college. Then the collection of things started accordingly. Firstly to make the pots for planting the plants we collected old drums, cut them to half and recycled them. Then after soil and compost were collected to give nourishment to the plants for further growth.

In this pre-planning I with my fellow mates had to get things delivered drums cut compose mixed and keep ready for planting.



Image: Preparations for the tree plantation

Afterwards we collected plants from local nurseries which included some basic fruit and normal plants which included;

- Guava
- Kaju(Cashew)
- Lemon
- Hibiscus
- chickoo ,etc.
- **Iniation of the tree plantation**

On the first day i.e, on 18th of August our NSS unit members gathered together for the project as per the given schedule. Then the plants were planted accordingly with great interest by our NSS members as instructed by our teachers.Our NSS unit showed keen interest while planting the plants and filling the pots with soil and compost.All the pots were labelled based on the tree planted in them.



Image: Plantation of saplings.

- **Inauguration**

After all the plantation was done,our director,'**Fr.ValerianDsouza**' and principal' **Dr. Srijaunnikrishnan**' inaugurated the terrace garden project and watered the plants with various other faculty members planting samplings.



Image: Inauguration ceremony

The project took place in a good shiny area within the college premises.Its motive was to;

- Provide more greenery to our college premises.
- Keep the surrounding air healthy and clean
- Provide food and fruits
- Add unity to in our NSS team and rise team-spirit

Our NSS members gathered after college and happily contributed towards the initiative.We hope our efforts do not go in vain and give us good outcomes. Various plants are thus set up and we take care of it on regular basis and water idaily.Thus,this was the little we contributed towards our planet,for its better future.



Image:Samplings planted on terrace garden .



NSS CRCE

Report on Plastic Ban Rally

Date: 24th September 2019.

Place: Bandra.

On 24th September 2019, FR. Conceicao Rodrigues College Of Engineering had conducted a Plastic Ban Rally. As 24th September is celebrated as NSS day we students decided to celebrate this day in a unique way by conducting awareness campaign among people.

For this rally I had to take permission from college then police who helped us through the rally, various banners and posters were also made.



Image : our volunteers carrying banner

By taking the permission from Mumbai police we started our rally from Bandra station to our college which is located at Bandstand.

The volunteers were instructed to report at the location at 7.30 am on 24th September .NSS was celebrating their 50th anniversary on that day.To commemorate this Rally was organized .The volunteers were then briefly instructed about the rules and regulations to follow during this rally.



Image : volunteers walking for rally

Holding aloft banners carrying slogans that dissuaded the use of plastic in the city, the volunteers reached the college covering the distance of 3kms .

Many slogans were said like “DON’T BE DRASTIC ,SAY NO TO PLASTIC”, “USE PAPER BAG REDUCE PLASTIC BAG”, “DO SOMETHING DRASTIC,CUT THE PLASTIC”, etc.

We were accompanied by the Mumbai police from start till the end of the ourrally.All thanks to the Mumbai police for this peaceful rally. It was indeed a very good experience.



Image : Fr. Valerian our director giving pledge with our NSS volunteers.

Thanking the Mumbai police we went to our college were the director of our college Fr.ValerianD'souza and along with 50 voluteers took the pledge to refrain from unnecessary usage of plastic and convinced their family and friends against plastic usage to create environmental responsibility.



Image : group pic of NSS members with director and security head.

NSS CRCE is grateful of Mumbai police as well as our director and all the voluteers for their support to organize this peaceful and successful rally to make people aware of their responsibility to use cloth bags and change the use and throw culture.

THE HEART AND SOLE RUN 3

Rotaract Club of Fr. CRCE organised its flagship event, 'The Heart and Sole Run 3' on 1st March 2020. This run was organised in association with the NGOs 'Bigger Than Life' and 'Swapnavana'. Bigger Than Life NGO supports the education of underprivileged children and promotes women empowerment by providing them various employment opportunities. Swapnavana is a NGO supporting the cause, reforestation, by working on a 15 acres land in Karjat. Rotaract Club of Fr. CRCE collaborated with the following NGOs to support their respective cause and contribute towards the society.

The Heart and Sole Run 3 consisted of four different runs- Grit Run(15 Km), Eco Run(10Km), Dream Run(5 Km) and CitizenCredit Run(1.5Km). Grit Run and Eco Run were timed runs, with RFID technology which gave runners accurate timing of their run. The run was hosted on Townscript for online registrations.

Looking at the impact and scale of 'The Heart and Sole Run 3', many brands and companies came forward for being the proud sponsors. Pepe Jeans, CitizenCredit Bank, Mumbai Wellness Centre and MonQo happily associated with the event.

The Heart and Sole Run 3 began with the flag-off by our Chief Guest Ms. Rachita Mistry at 6:15am in the morning. All the runners participated enthusiastically and completed the run successfully to win their finisher medals and certificates. A post-run Zumba session helped the runners to relax their muscles and enjoy their breakfast. Winners of the run were felicitated by Chief Guest- Ms. Rachita Mistry, Guest of Honour-Ms Gloria Moraes, Dean of student affairs- Dr. Deepak Bhoir and Faculty in charge of Rotaract Club of Fr. CRCE- Mrs. Sujata Deshmukh.

A total of 700 participants from all over Mumbai contributed along with Rotaract Club of Fr. CRCE to make a difference in the society.



