School of Engineering and Technology
Department of Electronics and Communication Engineering
## Curriculum Feedback Analysis 2021-22

The Department of Electronics and Communication Engineering revises its curriculum for the programmes offered every year based on the relevant trends in industry and emerging technologies by considering the feedback provided by all its stakeholders on the curriculum. This report is an analysis of the feedback collected from the various stakeholders like students, alumni and faculty members and this report shall be forwarded to the Department Curriculum Design and Development Cell (CDC) for consideration while revising the curriculum.

This academic year feedback was collected from a total of 153 students, 23 faculty members, 47 alumni, 10 employers and 17 parents. This feedback was analyzed and this report contains the analysis and recommendations to CDC based on the analysis carried out.

Student Feedback on Curriculum

A total of 153 students took the curriculum feedback survey. The questionnaire and the number of responses for each year of study was as follows

| All Years of Study				
Total Number of Students Participated in the Survey : 153				
Question	Excellent	Very Good	Good	Average	Needs Improvement
Does the content of the syllabus satisfy the stated objectives and learning outcomes as per the course and program of study in line with the implemented Outcome Based Education?	21	47	74	8	3
Does the syllabus enhance your knowledge and skills in the relevant domain?	20	45	70	14	4
Does the content of the syllabus orient you towards higher education?	19	49	61	21	3
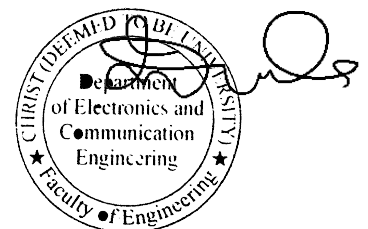
|					
Does the syllabus enable the students to apply their knowledge in real life problem solving?	18	33	63	28	11
Is employability given weightage in the design and development of syllabus?	11	37	65	36	4
Does the syllabus promote self-study and attitude of research?	21	49	57	23	3
Does the syllabus meet your overall expectations?	21	38	79	9	6
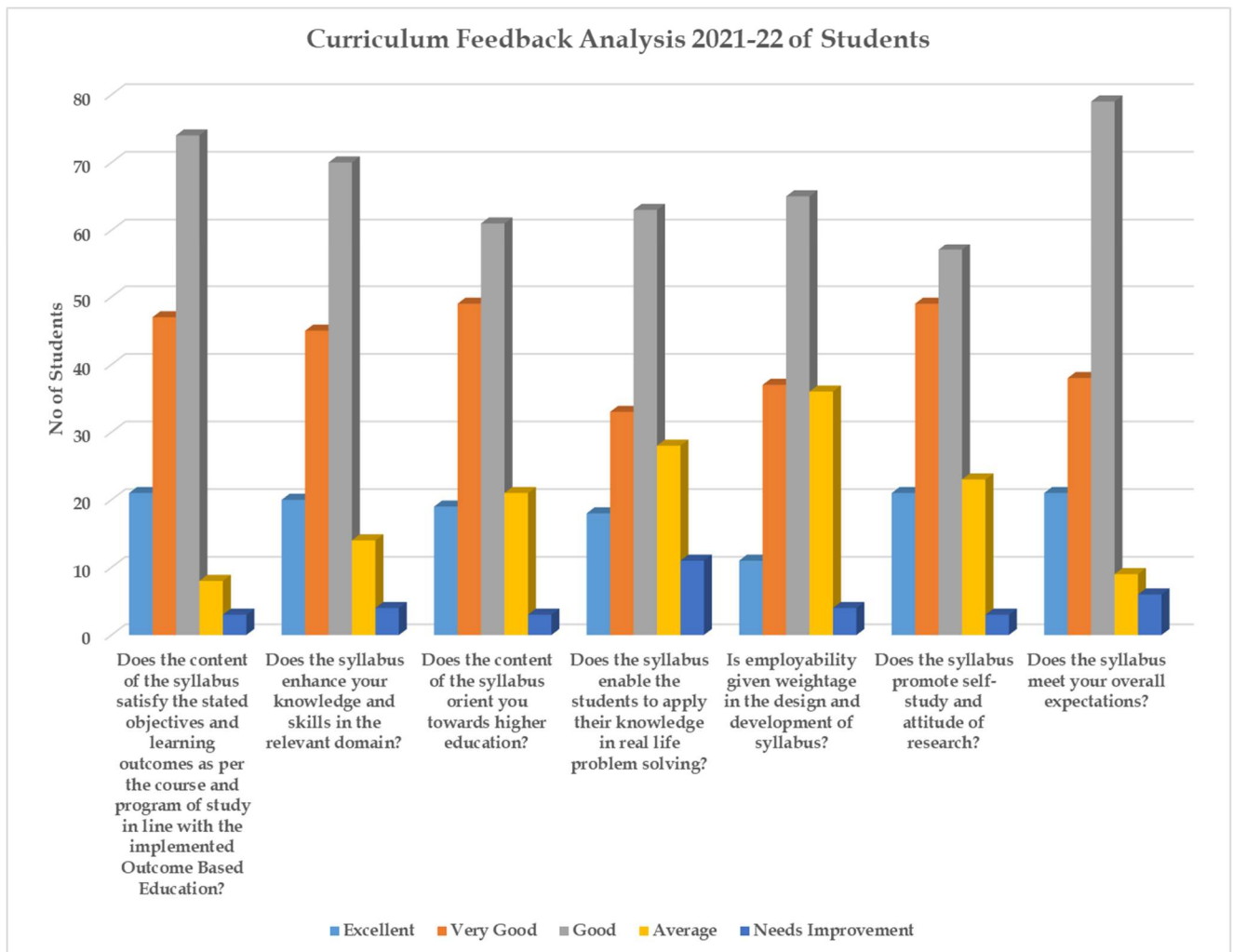
The above graph is a representation of the feedback responses given by the students as per the questionnaire.

The graph given below depicts the overall expectation meeting of the students from all years as far as syllabus is concerned. From the graph it can be seen that the students have given a feedback where 90% of the students are satisfied with the curriculum being offered. However, when the
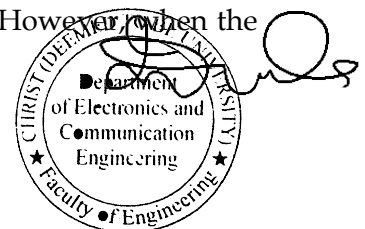
general comments and suggestions were analyzed, the following were the main points given by the students

- In the curriculum of B.Tech in Electronics and Communication Engineering and M.Tech in Communication Systems (IC Design), no major concerns were present based on the feedback.
- Based on the feedback of the faculty members, there was a need for restructuring the course structure for B.Tech in Electronics and Computer Engineering. This was due to courses having certain pre-requisites falling in the same semester of study. This was deliberated by the members of CDC and the course structure was recommended to be changed for B.Tech in Electronics and Computer Engineering

Curriculum Meeting overall expectations of Students
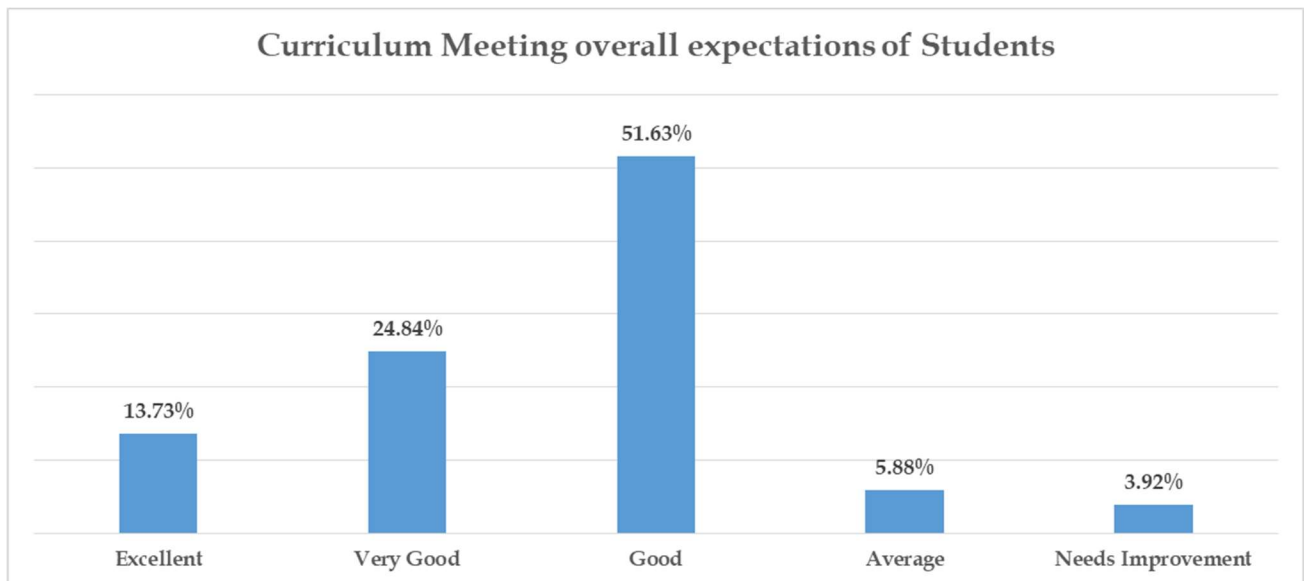
Faculty Feedback on Curriculum

Faculty members are the backbone of any higher education institution and their feedback is very important to analyse the curriculum and to update it as per the necessity. As a practice, the department takes feedback from every course handling faculty member and the below section is an analysis of the same.

The questionnaire floated with 23 faculty members concentrated on the below questions and also on suggestions/ recommendations for the courses handled by them in the even semester of 2020-21 and odd semester of 2021-22. The synopsis of the same is given below

Question
Does the course curriculum fulfills your expectations
Does the curriculum create any interest to pursue Research/Development in the particular topic for the students?
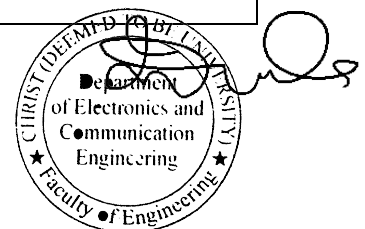
Does the syllabus cater to industry and global needs? If no, then specify the technologies/topics to be added to make it more updated

Few of the suggestions by the course handling faculty members is as given below

| Sl No	UG/PG	Course Name	Course Code	Recommendations	Recommended by
1	UG	Digital Electronics	EC334P	Reordered the existing units into 4 units and added a new unit on Verilog Modeling because Verilog concepts can be covered in lower semesters since it helps the students to carry their projects in that domain	Devices, VLSI and Embedded System Domain
2	UG	Electromagnetic Fields	EC335	Reduction of few topics based on the faculty feedback	RF and Communication domain
3	UG	VLSI Design	EC631P	Added device level concepts in Unit 1 and introduced System Verilog programming language in Unit 5.	Devices, VLSI and Embedded System Domain
4	UG	Computer Networks	EC633	Addition of IP multicasting in Unit-III	Signal Processing and Recent Trends Domain
5	UG	Digital Image Processing	Program Elective	Addition of content related to MATLAB in Unit 2 and other units are reordered	Signal Processing and Recent Trends Domain
6	UG	Statistical Signal Processing	Program Elective	Reordering of contents and addition in Unit 3	Signal Processing and Recent Trends Domain
7	UG	Fundamentals of Image Processing	Open Elective	Addition of content related to MATLAB in Unit 2 and other units are reordered	Signal Processing and Recent Trends Domain
8	PG	Communication Systems Lab	MTEC151	Revamp of the experiments to correlate with the concepts learnt in theory	RF and Communication domain
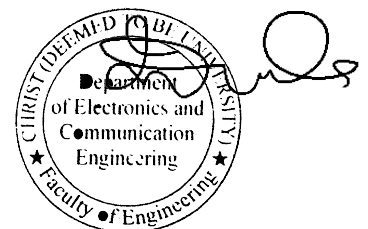
9	PG	IC Process Technology and CMOS VLSI Design	MTEC342E19	Addition of pre-requisite content in Unit 1 and reordering of the remaining units	Devices, VLSI and Embedded System Domain
10	PG	Digital system Design using Verilog	MTEC342E29	Course Outcome modified	Devices, VLSI and Embedded System Domain

Feedback from Alumni, Industry and Parents

In addition to the above feedback collected from faculty members, feedbacks were also collected from alumni, employers and parents. The major suggestions as given by these stakeholders are as follows

1. Inclusion of more hands on training in the trending areas like artificial intelligence and machine learning.
2. More facility setup at the campus related to high end data servers and machines for implementation of data analytics and prediction.

This analysis report on all the feedbacks collected from the students, faculty members, alumni and verticals shall be presented to the Department CDC for discussion and deliberation to be recommended to the Department Board of Studies for the academic year 2022-23 to be held in the month of January/February 2022.
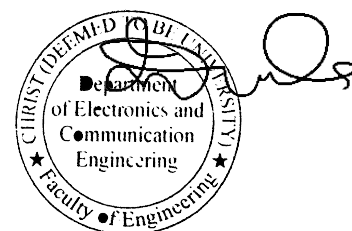
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Action Taken Report on Curriculum Feedback Analysis 2021-22

The Department of Electronics and Communication Engineering collects analyses and takes action based on the feedback received from all the stakeholders as far as curriculum is concerned. The stakeholders from whom the feedback is collected are

1. Students
2. Teachers
3. Alumni
4. Parents
5. Industry Experts

The Curriculum Design and Development Cell (CDC) of the Department initiates this feedback collection, also analyses the same, and prepares a feedback analysis report on the curriculum every academic year. These are then proposed to the Department Board of Studies (BoS) for their approval to be included in the curriculum for the subsequent academic year.

This report highlights the action taken in the below mentioned courses which have been revised as per the feedbacks received from the stakeholders.

Semester: III
Course: Digital Electronics
Course Code: EC334P

Unit	Existing Syllabus	Proposed Syllabus	Reasons for Change	Remarks
Unit 5	Non Existing unit	Verilog HDL : Basic Concepts: VLSI Design flow, identifiers, gate primitives, value set,	Verilog concepts can be covered in lower semesters since it helps the students to carry	2021-25 onwards
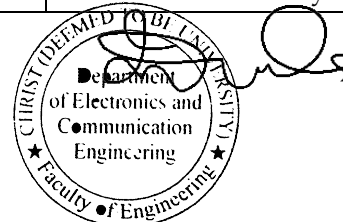
		ports, gate delays, structural gate level modeling, Behavioral modeling, Data flow modeling, Design hierarchies, Structural gate level description of combinational and sequential circuits	their projects in that domain	

Semester: III
Course: Electromagnetic Fields
Course Code: EC335
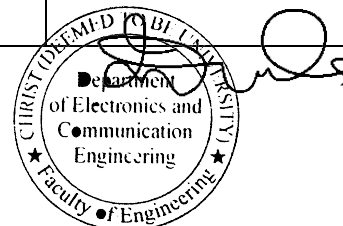
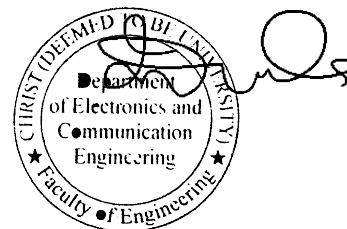| Unit	Existing Syllabus	Proposed Syllabus	Reasons for Change	Remarks
All 5 units	The existing syllabus was a 4 credit and hence 60 hour course	The proposed syllabus is 3 credit 45 hour course and hence few topics have been removed from all units	Reordering and reduction based on Faculty feedback	2021-25 onwards

Semester: VI
Course: VLSI Design
Course Code: EC631P

Unit	Existing Syllabus	Proposed Syllabus	Reasons for Change	Remarks
Unit 1	The existing syllabus were not having device level concepts	Fundamentals of MOSFETs, Long channel MOSFETs, Moore's law,	Device level concepts provide the	2020-24 onwards

		semiconductor industry technology nodes, short channel effects, leakage currents, high-k. Principle of nanotransistor, Electrochemical potential, Poisson Equation, Self-consistent solution of the channel potential, Current calculation for non-equilibrium potential	fundamentals to VLSI design	
Unit 5	The existing syllabus were not having system level programming	Introduction to System Verilog-Verification guidelines - Data types - Procedural Statements & Routines - Test Bench- Basic OOP- System	System Verilog Programming has applications related to industrial needs and hence included.	2020-24 onwards

Semester: VI
**Course: Computer Networks**
Course Code: EC633

Unit	Existing Syllabus	Proposed Syllabus	Reasons for Change	Remarks
Unit 3	The existing syllabus was not having IP multicasting	Internetworks - Packet Switching and Datagram approach – IP addressing methods IP Multicasting and broadcasting– Subnetting – Routing – Distance Vector Routing – Link State Routing – Routers	Applications of IP multicasting has increased in the previous year and hence students should know about the same	2020-24 onwards

Semester: Elective
Course: Digital Image Processing
Course Code: Program Elective

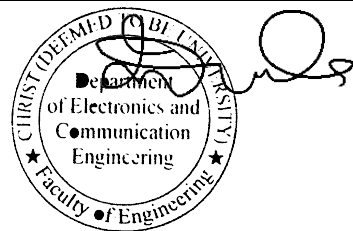| Unit	Existing Syllabus	Proposed Syllabus	Reasons for Change	Remarks
Unit -1	The existing syllabus was not having concepts related to MATLAB and IP toolbox	Digital image fundamentals: representation - - simple image formation model – Image sampling and quantization - imaging geometry, mach band effect, elements of visual perception, Color image	Hands on training based on student feedback	2019-23 onwards
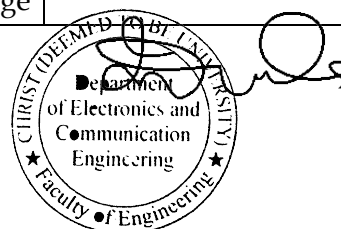
		fundamentals -RGB, HSI models brightness, contrast, hue, saturation, Two-dimensional mathematical preliminaries; Introduction to MATLAB (IP toolbox)		

Semester: Elective
Course: Statistical Signal Processing
Course Code: Program Elective

Unit	Existing Syllabus	Proposed Syllabus	Reasons for Change	Remarks
Unit 3	Existing syllabus was having redundant content in Unit 3	Minimum Mean Square Error, Linear Minimum Mean-Square Error (LMMSE) Filtering: Wiener Hoff Equation, FIR Wiener filter, Causal IIR Wiener filter, Noncausal IIR Wiener filter, Linear Prediction of Signals, Forward and Backward Predictions, Levinson Durbin Algorithm, Lattice filter realization of prediction error filters.	The existing content was redundant and hence modified	2019-23 onwards

Semester: Elective
Course: Fundamentals of Image Processing
Course Code: Open Elective

Unit	Existing Syllabus	Proposed Syllabus	Reasons for Change	Remarks
Unit 2	The existing syllabus was not having concepts related to MATLAB and IP toolbox	Introduction to MATLAB, Introduction to IP Tool box, Exercises on image enhancement, image restoration, and image segmentation, Image Transforms: FT, DFT, DCT	Hands on training based on student feedback	2019-23 onwards