ACADEMIC YEAR 2020 - 21

Analysis on Feedback from Employers: Action Taken Report

A. The various ways in which feedback from Employers were obtained during the Academic Year 2020-21:

1. Participation in Academic and Statutory meetings viz. Board of Studies (BoS) and School Level Advisory Committee (SLAC) during June – July 2020 and December 2020 – January 2021 sessions; and Academic Council meetings held on 25.06.2020 and 23.12.2020.

2. Feedback from Institution Website

The following salient points were considered for further action taken:

❖ A1: Modification / revision in syllabi of courses to suit current knowledge levels

❖ A2: Introduction of courses in emerging technologies

❖ A3: Starting new programmes based on market demand

❖ A4: Emphasize Application oriented curriculum and syllabi

B. Details of Action Taken

○ A1 was considered as agenda items 17.5.2, 17.5.4, 17.5.6, 17.18.1, 17.18.2 in the 17th meeting of Academic Council held on 15.07.21 (Page no. 33, 34, 35, 67, 68, 69, 70 in the minutes of 17th Academic Council meeting)

○ A2 was considered as agenda items 17.6.1, 17.7.1, 17.9.1, 17.10.1, 17.11.1, 17.12.1 in the 17th meeting of Academic Council held on 15.07.21 (Page no. 37, 38, 39, 40, 46, 47, 48, 49, 51, 52, 54, 55 in the minutes of 17th Academic Council meeting)

- A3 was considered as agenda item 17.1.4 in the 17th meeting of Academic Council held on 15.07.21 (Page no. 15 & 16 in the minutes of 17th Academic Council meeting)
- A4 was considered as agenda item 17.16.1, 17.21.1 in the 17th meeting of Academic Council held on 15.07.21 (Page no. 60, 61, 75 in the minutes of 17th Academic Council meeting)

Annexure: Highlighted pages of Minutes of 17th Academic Council meeting.

31/12/2021

Dean, Academic Affairs

DEAN (ACADEMIC AFFAIRS)
B.S. Abdur Rahman Crescent Institute
of Science & Technology
Vandalur, Chennai - 600 048, India

B.S. Abdur Rahman

Crescent

Institute of Science & Technology

Deemed to be University u/s 3 of the UGC Act, 1956
GST Road, Vandalur, Chennai 600 048

Minutes of the

Seventeenth Meeting of the Academic Council

of

B.S. Abdur Rahman Crescent Institute of Science & Technology,

held on

July 15, 2021

Online Meeting

3-5, 2021. Our Institution was accredited with A+ Grade (CGPA: 3.33 out of 4.00) for the period of five years with effect from 08-02-2021.

The detailed report is given <u>Annexure 17.1.3</u>.

The academic council may consider and take note of the same.

Resolution:

The agenda item was noted.

Item 17.1.4

To consider and approve the introduction of new programmes from the academic year 2021-22.

Note on Agenda:

To meet the changing industry demand and societal needs, the following programmes are to be introduced from the academic year 2021-22:

1. MBA Innovation, Entrepreneurship and Venture Development
2. BA Public Policy

The following programmes are also offered from the academic year 2021-22 for which the approval was already obtained in the 16th meeting of Academic Council which was held on 23rd December 2020.

1. M.Tech. Data Science
2. M.Tech. Artificial Intelligence & Data Science
3. M.Tech. Food Biotechnology

Note : The AICTE granted approval for the above M.Tech. programmes and MBA (IEV) vide F.No. Southern/1-9320023375/2021/EOA dated 08.07.2021.

The Academic Council may consider and approve the introduction of new programmes for implementation from the academic year 2021-22.

Discussions:

Prof. Thangamuthu pointed out that Public Policy can also be offered as a Post Graduate programme.

Resolution:

The introduction of the above mentioned new programmes was approved by the Academic Council for implementation from the academic year 2021-22.

Item 17.1.5

To consider and approve the establishment of Department of Public Policy under School of Social Sciences and Humanities

Note on Agenda:

The Institution proposed to offer B.A. Public Policy from the Academic Year 2021-22. This necessitated the creation of "Department of Public Policy" to effectively handle all the academic activities pertaining to this programme. This department will function under the School of Social Sciences and Humanities.

The Academic Council may consider and approve the establishment of Department of Public Policy.

Resolution:

The agenda item was approved.

Item 17.1.6

To consider and approve the establishment of "Centre for Distance and Online Education" for offering Open and Distance Learning (ODL) and Online Mode (OL) programmes

Note on Agenda:

The "Centre for Distance and Online Education" has been established in the Institution to offer programmes under Open and Distance Learning (ODL) and Online (OL) mode from the academic year 2021- 22. Prof. V. Rhymend Uthariaraj was appointed as Director, Centre for Distance and Online Education.

The Academic Council may consider and approve the same.

Resolution:

The agenda item was approved.

Item 17.1.7

To consider and approve the introduction of MCA and MBA programmes under Regulations 2021 in Open and Distance Learning (ODL) and Online Mode (OL)from the academic year 2021-22.

Note on Agenda:

The offering of MCA and MBA Programme under ODL and OL modes was deliberated and approved in the 18th Meeting of BoM which was held on 03.03.2021.Accordingly the Institution has applied for approval in AICTE. The AICTE granted approval for the MCA and MBA programmes in ODL & OL in the Academic Year 2021-21 vide F.No. Southern/1-9320023375/2021/EOA dated 08.07.2021.

The Academic Council may consider and approve the starting of MCA and MBA programmes under ODL and OL mode from the academic year 2021-22.

The revised curriculum and syllabi of courses (I and II semester) of B.Tech. CSE under Regulations 2021 are given in <u>Annexure 17.5.1.</u>

The Academic Council may consider and approve the same with effect from academic year 2021-22.

Discussions:

Dr. B. Suresh suggested to augment the knowledge level of faculty members to handle new courses in emerging areas. He also emphasized to document the measures taken towards faculty knowledge enhancement and its outcome.

Resolution:

After detailed deliberations, the agenda item was approved.

Item 17.5.2

To consider and approve the curriculum and syllabi of B.Tech. (Artificial Intelligence and Data Science), B.Tech. CSE (Internet of Things) and B.Tech. CSE (Cyber Security) under Regulations 2021.

Note on Agenda:

To align with the Regulations of other engineering programmes offered by the Department of CSE, the curriculum and syllabi of B.Tech. (Artificial Intelligence and Data Science), B.Tech. CSE (Internet of Things) and B.Tech. CSE (Cyber Security) were revised. These revisions were discussed in the 18th Meeting of Board of Studies of the Department of Computer Science and Engineering and the board has recommended for approval.

The curriculum and the syllabi of courses (I and II semester) of B.Tech. (Artificial Intelligence and Data Science), B.Tech. CSE (Internet of Things) and B.Tech. CSE (Cyber Security) under Regulations 2021 are given in Annexure <u>17.5.2.a</u>, <u>17.5.2.b</u> and <u>17.5.2.c</u>.

The Academic Council may consider and approve the same with effect from academic year 2021-22.

Resolution:

The agenda item was approved.

Item 17.5.3

To consider and approve the curriculum and syllabi of new programme M.Tech. Artificial Intelligence & Data Science and M.Tech. Data Science under Regulations 2019.

Note on Agenda:

In line with the needs of the industry, M.Tech. Artificial Intelligence and Data Science

and M.Tech. Data Science are to be introduced from the academic year 2021-22. The curricula and syllabi of courses (I semester) of the above programmes were deliberated in the 18th Meeting of Board of Studies of the Department of Computer Science and Engineering and the board has recommended the same for approval.

The curricula and the syllabi of I semester courses of M.Tech. Artificial Intelligence & Data Science and M.Tech. Data Science under Regulations 2019 are given in Annexure 17.5.3.a, and Annexure 17.5.3.b.

The Academic Council may consider and approve the same for implementation from academic year 2021-22.

Resolution:

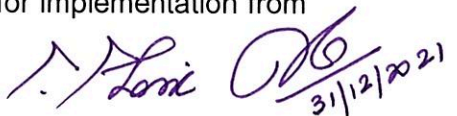The agenda item was approved.

Item 17.5.4

To consider and approve the revised curriculum and syllabi of courses (III to VIII Semesters) of B.Tech. (Artificial Intelligence and Data Science), B.Tech. CSE (Internet of Things) and B.Tech. CSE (Cyber Security) under Regulations 2017.

Note on Agenda:

The B.Tech. (Artificial Intelligence and Data Science), B.Tech. CSE (Internet of Things) and B.Tech. CSE (Cyber Security) were introduced in the academic year 2020 -21. The syllabi of I and II semesters were already approved in the 15th Meeting of Academic Council. The syllabi of III to VIII semesters courses of B.Tech.(Artificial Intelligence and Data Science), B.Tech. CSE (Internet of Things) and B.Tech. CSE (Cyber Security) were framed after discussions in various department level meetings. The syllabi of courses were discussed in the 17th Meeting of Board of Studies of the Department of Computer Science and Engineering and the board has recommended for approval.

The curriculum and the syllabi of III to VIII semester courses of B.Tech. (Artificial Intelligence and Data Science), B.Tech. CSE (Internet of Things) and B.Tech. CSE (Cyber Security) under Regulations 2017 are given in Annexure 17.5.4.a, 17.5.4.b and 17.5.4.c.

The Academic Council may consider and approve the same for implementation from academic year 2021-22.

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Resolution:

The agenda item was approved.

Item 17.5.5

To consider and ratify the revised curriculum and syllabi of B.Tech. (Artificial

Intelligence and Data Science), B.Tech. CSE (Internet of Things) and B.Tech. CSE (Cyber Security) under Regulations 2017.

Note on Agenda:

The new course CHC 1184 Chemistry for Data Storage and Transmission was introduced in the first semester of B.Tech. (Artificial Intelligence and Data Science), B.Tech. CSE (Internet of Things) and B.Tech. CSE (Cyber Security) under Regulations 2017.

The course CSC 1151 Programming in C and C++ was also modified from theory course of 4 credits to a laboratory integrated course of 4 credits (T – 3, P-2, C – 4)

These changes were discussed in the 17th meeting of Board of Studies of Department of Computer Science and the Board recommended the same for ratification.

The syllabus of the new course HC 1184 Chemistry for Data Storage and Transmission and CSC 1151 Programming in C and C++ is given in Annexure 17.5.5 (a)&17.5.5(b).

The Academic Council may consider and ratify the same with effect from Odd semester of Academic year 2020-21.

Resolution:

The agenda item was ratified.

Item 17.5.6

To consider and ratify the revised curriculum of B.Tech. CSE under Regulations 2017.

Note on Agenda:

The syllabi of the following courses were revised to include MySQL as per the suggestions from the industry experts:

      1. CSC2221 - Information Management Basics with DB2.

      2. CSC2222 - Information Management Basics with DB2 Lab

These changes were discussed in the 17th meeting of Board of Studies of Department of Computer Science and the Board recommended the same for ratification.

The revised curriculum and syllabus of B.Tech. CSE under Regulations 2017 is given in Annexure 17.5.6.

The Academic Council may consider and ratify the same with effect from the Academic year 2020-21.

Resolution:

The agenda item was ratified.

Note on Agenda:

Based on the recent trends in the industry, it was suggested by the industry experts to include the new elective courses CSDY 036 - System Simulation and Modeling Techniques (Semester II) and CSDY 037 - Cellular Automata and its Applications (Semester III) in the M.Tech. CSE curriculum under Regulations 2019.

The syllabi of the courses were discussed in the 17th meeting of Board of Studies of the Department of Computer Science and Engineering and the board has recommended for approval.

The syllabi of the above courses are given in <u>Annexure 17.5.9.</u>

The Academic Council may consider and approve the same for implementation from Academic year 2021-22.

<u>Resolution:</u>

The agenda item was approved.

DEPARTMENT OF INFORMATION TECHNOLOGY

Item 17.6

To consider and approve the recommendations of the Board of Studies of the Department of Information Technology.

Item 17.6.1

To consider and approve the curriculum and syllabi of B.Tech. Information Technology under Regulations 2021.

Note on Agenda:

The Institution follows the best practice of effecting major revision in curriculum and syllabi of B.Tech. Programmes once in four years considering the dynamic changes in the industry, introduction of new technology and techniques, emerging trends, and employment opportunities. This is in addition to the revision in curriculum and syllabi of programmes facilitated once in six months.

Based on the feedback obtained from the various stakeholders viz., employers, alumni, faculty & students; and also from the school level advisory committee meetings and department level meetings, curriculum and syllabi (Semester I and II) of B.Tech. IT under Regulations 2021 was framed after deliberations.

The salient features of the B.Tech. IT under regulations 2021 are as follows:

Based on the feedback from faculty the following new courses (Core and elective courses) were introduced in the B.Tech.IT, R 2021:

1. ITDX 04 - Graphics and Multimedia
2. ITDX 05 - Human Computer Interaction

3. ITDX 06 - Swift Programming

4. ITDX 11 - Introduction to DevOps

5. ITDX 17 - Agile Methodologies

6. ITDX 30 - Ad hoc and Sensor Networks

7. ITDX 32 - GPU Architecture and Programming

8. ECDX   - 5G Technology

9. ITDX 48 - Artificial Intelligence for Data Science

10. ITDX 50 - Deep Learning

11. ITDX 52 - Predictive Analytics

12. ITDX 53 - Mathematical Foundation for Data Sciences

13. ITDX 63 - Virtualization Techniques

14. ITDX 73 - Ethical Hacking

Based on the feedback from Industry experts and faculty, the following new courses (Core and elective courses) were introduced:

1. ITD 2201 - Programming in Java

2. ITD 3103 - Mean Stack Web Development

3. ITD 3104 - AI and Machine Learning

4. ITDX 02 - Android Application Development

5. ITDX 07 - Introduction to NoSQL Databases

6. ITDX 12 - E-Commerce and Digital Marketing

7. ITDX 64 - Fog Computing

8. ITDX 65 - Cloud Services and Platform

9. ITDX 72 - Fundamentals of Security Analyst

10. ITDX 76 - Cyber Forensics

11. GED XX - Introduction to Artificial Intelligence

12. GED XX - Fundamentals of Data Science and Machine Learning

Based on the feedback from Industry experts, the following new courses (Core and elective courses) were introduced:

1. ITDX 08 - Computational Intelligence

2. ITDX 33 - Software Defined Networks

Based on the feedback from Students and Faculty, the following new courses (Core and elective courses) were introduced:

1. ITD 1201 - Programming in C++

2. ITDX 31 - Python for IoT

3. ITDX 47 - Analytics of Things

4. ITDX 49 - Scalable Data Science

5. ITDX 54 - Data Science Using Python

6. ITDX 75 - Security in Computing

Based on the feedback from alumni the following new courses (Core and elective courses) were introduced:

1. ITDX 03 - Principles of Programming Languages

2. ITDX 19 - Functional Programming

Based on the feedback from Students, Faculty and Industry experts, the following new courses (Core and elective courses) were introduced:

1. ITDX 51 - Computer Vision and Image Processing

These revisions were discussed in the 14th Meeting of Board of Studies of the Department of Information Technology and the board has recommended the same for approval.

The revised curriculum and the syllabi (I and II Semester) of B.Tech. Information Technology under Regulations 2021 are given in Annexure 17.6.1.

Discussions:

Dr. B. Suresh suggested to offer research oriented core courses in the curriculum of programme to motivate students to pursue Master's degree and research programme, in addition to courses catering industry needs.

Resolution:

After deliberations, the agenda item was approved.

DEPARTMENT OF COMPUTER APPLICATIONS

Item 17.7

To consider and approve the recommendations of the Board of Studies of the Department of Computer Applications.

Item 17.7.1

To consider and approve the curriculum and syllabi of BCA under Regulations 2021 and B.Sc. Computer Science under Regulations 2021.

Note on Agenda:

The Institution follows the best practice of effecting major revision in curriculum and syllabi of BCA and B.Sc. Computer Science programmes once in 4 years considering the dynamic changes in the industry, introduction of new technology and techniques, emerging trends, employment opportunities and feedback from stakeholder's viz., students, parents, faculty, alumni and employers. This is in addition to the revision in curriculum and syllabi of programmes facilitated once in six months.

The salient revisions made in BCA curriculum R 2021 are:

1. Based on the feedback from faculty the following new courses (Core and elective courses) were introduced:

CADX 113	Time Series Analysis
CADX 103	Virtualization and Cloud Security
CADX 102	Computer Forensics and Investigation
CADX 107	Games, Arts and Design
CADX 262	Customer Relationship Management Analytics
CADX 264	Decision Support System

2. Based on the feedback from students and parents, the following new courses (Core and elective courses) were introduced:

CADX 214	Exploratory Data Analytics
CADX 082	Introduction to Health Care Analytics
CADX 088	Introduction to Artificial Intelligence
CADX 085	Web Application Development

3. Based on the feedback from employers and alumni the following new courses (Core and elective courses) were introduced:

CADX 202	Business Intelligence
CADX 114	Specialization in 3D Productions
CAD 3108	Personality Development Skills
CADX 081	Data Analytics & Visualization
CADX 084	Cloud Services and Management

4. The following courses were revised as per the suggestions of faculty and students:

CAD 1101	Computer Fundamentals and Organization
CAD 1102	Programming in C
CAD 1103	Data Structures Using C
CAC1201	OOPS with C++
CAC1202	Operating Systems

The salient revisions made in the curriculum of B.Sc. Computer Science R2021 are:

1. Based on the feedback from faculty the following new courses (Core and elective courses) were introduced:

CAD 3102	Artificial Intelligence
CADX262	Customer Relationship Management Analytics
CADX263	Management Information System
CADX264	Decision Support System
CADX081	Data Analytics and Visualization

2. Based on the feedback from students and parents, the following new courses (Core and elective courses) were introduced:

CAD3104   R Programming

CAD 3101   Reasoning and Thinking

CAD2101   Design and Analysis of Algorithms

CADX085   Web Application Development

CADX 252   Social Media Analysis

3. Based on the feedback from employers and alumni the following new courses (Core and elective courses) were introduced:

CAD 3201   Enterprise Application Development

CAD3108   Personality Development Skills

CADX 150   Healthcare Analytics

CADX 152   Human Resource Analytics

CADX089   Digital Advertisement

4. The following courses were revised as per the suggestions of faculty and students:

CAD 1101   Computer Fundamentals and Organization

CAD 1102   Programming in C

CAD 1103   Data Structures Using C

CAC1201   OOPS with C++

CAC1202   Operating Systems

These revisions were discussed in the 15th Meeting of Board of Studies of the Department of Computer Applications and the board has recommended for approval.

The revised curriculum and the syllabi of courses (I and II Semester) of BCA under Regulations 2021 and B.Sc. Computer Science programme under Regulations 2021 are given in Annexure 17.7.1 (a)&17.7.1(b).

The Academic Council may consider and approve the same for implementation from academic year 2021-22.

Resolution:

The agenda item was approved.

31|12|2021

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Item 17.7.2

To consider and approve the syllabi of courses offered in 3rd and 4th semester of MCA programme under Regulations2019.

Note on Agenda:

By following the guidelines of AICTE, two year MCA programme was offered from the academic year 2020-21. The syllabi of courses of first two semesters were approved in the 15th meeting of Academic Council held on25.06.2020. As a continuation, the syllabi of courses offered in the third and fourth semester were deliberated in detail in the 15th Meeting

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Item 17.9

To consider and approve the recommendations of the Board of Studies of the Department of Electrical and Electronics Engineering.

Item 17.9.1

To consider and approve the curriculum and syllabi of B.Tech. EEE under Regulations 2021.

Note on Agenda:

The Institution follows the best practice of effecting major revision in curriculum and syllabi of B.Tech. Programmes once in four years considering the dynamic changes in the industry, introduction of new technology and techniques, emerging trends, and employment opportunities. This is in addition to the revision in curriculum and syllabi of programmes facilitated once in six months.

The curriculum of B.Tech. EEE under Regulations 2021 was framed after deliberations with the various stakeholders viz., students, parents, Alumni, Experts from Academia and Industry in the School Level Advisory Committee (SLAC) meetings and various department level meetings.

Based on the feedback from faculty, the following new courses (Core and elective courses) were introduced in the B.Tech.EEE R 2021:

EED 3104	VLSI (Lab Integrated)
EED 3205	Comprehension
EEDX 23	Electrical Machine Design
ECDX 083	Micro Electronics
EIDX 93	Biomedical Signal Processing
EEDX 55	Grid Integration of Renewable Energy Systems
EEDX57	Image and Video Processing
ECDX081	Communication Engineering
EIDX93	Biomedical Signal Processing
GEDX---	Optimization Techniques

Based on the feedback from students and parents, the following new courses (Core and elective courses) were introduced

EED 2205	Python for Electrical Engineers
CSDX 84	Fundamentals of Data Structures
EEDX 58	Industrial IoT

Based on the feedback from employers and alumni the following new courses (Core and elective courses) were introduced:

EED3202   Electric Vehicle Technologies

EEDX 05   IEEE and IEC standards

EIDX94   Industrial Instrumentation

EEDX 51   Artificial Intelligence for Electrical Engineers

EEDX 53   DC Micro grid

Based on the feedback from Board of Studies members the following new elective courses were introduced

EIDX 96   Transducers

ECDX 084   Computer Communication Networks

EEDX 63   Machine Learning

The following courses in Semester I and II were **revised** as per the suggestions of faculty and students:

- GED XXXX   Electric and Magnetic Circuits
- EED 1202   Electric Circuits Laboratory
- EED 1201   Signals and Systems

The revised curriculum and the syllabi of courses (I and II semester) were discussed in the 15th Meeting of Board of Studies of the Department of Electrical and Electronics Engineering and the board has recommended the same for approval.

The curriculum and syllabi of B.Tech. EEE under R 2021 are given in Annexure 17.9.1.

The Academic Council may consider and approve the same for implementation from the academic year 2021-22.

Resolution:

After detailed deliberations, the agenda item was approved.

Item 17.9.2

To consider and approve the syllabi of courses Basic Electrical Engineering, Basic Electrical and Instrumentation Engineering & Basic Electrical and Electronics Engineering offered to B.Tech. programmes under Regulations 2021.

Three following courses were framed considering the requirements of different disciplines of study:

(i) Basic Electrical and Electronics Engineering common for all branches except B.Tech ECE, EIE and B.Tech Biotechnology

(ii) Basic Electrical Engineering for B.Tech. Biotechnology and B.Tech. EIE.

(iii) Basic Electrical and Instrumentation Engineering for B. Tech. ECE

The syllabi of the above courses were deliberated in the 15th Meeting of Board of

Studies of the Department of Electrical and Electronics Engineering and the board has recommended the same for approval.

The detailed syllabi of the courses are given in <u>Annexure 17.9.2.</u>

The Academic Council may consider and approve the same for implementation from academic year 2021-22.

Resolution:

After detailed deliberations, the agenda item was approved.

Item 17.9.3

To consider and ratify the inclusion of elective course EEDY 039 Insulation Technology in M.Tech. (Power Systems Engineering) under Regulations 2019.

Note on Agenda:

The course 'Insulation Technology' was included as an elective course in M.Tech. (Power Systems Engineering) under Regulations 2019.

This revisions was deliberated in the 15th Meeting of Board of Studies of the Department of Electrical and Electronics Engineering and the board has recommended the same for ratification.

The syllabus of the course 'Insulation Technology' is given in <u>Annexure 17.9.3.</u>

The Academic Council may consider and ratify the same for implementation from academic year 2020-21.

Resolution:

The agenda item was ratified.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Item 17.10

To consider the recommendations of the Board of Studies of the Department of Electronics and Communication Engineering.

Item 17.10.1

To consider and approve the curriculum and syllabi of B.Tech. ECE under Regulations 2021.

Note on Agenda:

The Institution follows the best practice of effecting major revision in curriculum and syllabi of B.Tech. Programmes once in four years considering the dynamic changes in the industry, introduction of new technology and techniques, emerging trends, and employment opportunities. This is in addition to the revision in curriculum and syllabi of programmes facilitated once in six months.

The new curriculum structure, program objectives and outcomes wereframed based on current industry needs and the stake holder's feedback received through SLAC meetings and department level meetings.

The salient revisions in the curriculum of the B.Tech. ECE under Regulations 2021 are given below:

Based on the feedback from faculty the following new courses (Core and elective courses) were introduced in the B.Tech. ECE R 2021:

1. 5G Communication
2. ML in RF communication
3. Cryptography and Network Security
4. Embedded Machine learning
5. Nanoscale Devices and Circuit Design

Based on the feedback from students and parents, the following new courses (Core and elective courses) were introduced

1. AI for VLSI
2. Computer Vision
3. Essential Mathematics for Machine learning
4. Pattern Recognition

Based on the feedback from employers and alumni the following new courses (Core and elective courses) were introduced

1. AI for IoT
2. AI for Communication Systems
3. Artificial Intelligence on the Cloud
4. Autonomous Vehicle

The following courses were revised:

- ECD1201   Electron Devices
- ECD1202   Circuit and Network Analysis
- ECD1203   Electron Devices Lab

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The syllabi of the II semester courses were framed after discussion in department level meetings for its contents, objective, outcome and references and also considering the feedback from students, alumni and industry persons.

The curriculum and the syllabi of courses (I and II semester) were deliberated in the 21st meeting of Board of Studies of the Department of Electronics and Communication Engineering and the board has recommended the same for approval.

The curriculum and syllabi of courses (I and II semester) of B.Tech. ECE under Regulations 2021 are given in Annexure 17.10.1.

The Academic Council may consider and approve the same for implementation from

The syllabi of the courses ECD6123, ECD6222 and ECDY052 are given in <u>Annexure 17.10.3.</u>

The Academic Council may consider and approve the same for implementation from the academic year 2021-22.

Resolution:

The agenda item was approved.

DEPARTMENT OF ELECTRONICS AND INSTRUMENTATION ENGINEERING

Item 17.11

To consider the recommendations of the Board of Studies of the Department of Electronics and Instrumentation Engineering.

Item 17.11.1

To consider and approve the curriculum and syllabi of B.Tech. EIE under Regulations 2021.

Note on Agenda:

The Institution follows the best practice of effecting major revision in curriculum and syllabi of B.Tech Programmes once in four years considering the dynamic changes in the industry, introduction of new technology and techniques, emerging trends, employment opportunities and feedback from stakeholder's viz., students, parents, faculty, alumni and employers. This is in addition to the revision in curriculum and syllabi of programmes facilitated once in six months.

Based on the feedback from faculty the following new courses (Core and elective courses) were introduced in the B.Tech. EIE R 2021:

1. EID 1201 Network analysis and synthesis
2. EID 1203 Electron Devices and Network synthesis Laboratory
3. EID X06 Advanced Instrumentation Systems
4. EID X33 Instrumentation and control in Pharmaceutical Industries
5. EID X34 Instrumentation and control in Chemical Industries
6. EID X45 Mechatronics
7. EID X46 Design Technology and Innovation
8. EID X48 Advanced Digital Signal Processing
9. EID X49 Electronics equipment integration and Prototype building
10. EID X61 Industrial Data Networks
11. EID X63 3D Animation
12. EID X68 Big data Analytics
13. EID X69 Data science for Engineers

14. EID X70 Practical Machine learning with tensor flow

Based on the feedback from students and parents, the following new courses (Core and elective courses) were introduced:

1. EID 4102 Biomedical Instrumentation
2. EID X41 MEMS and Nanoscience
3. EID X42 Applied Power Electronics
4. EID X62 R-Programming
5. EID X66 Introduction to Industry 4.0 and Industrial Internet of things
6. EID X67 Deep Learning

Based on the feedback from employers and alumni the following new courses (Core and elective courses) were introduced:

1. EID 2204 Python for Instrumentation Engineers
2. EID 3201 Embedded System and RTOS
3. EID X09 Space and Navigational instrumentation
4. EID X10 Safety Instrumentation
5. EID X11 Piping and Instrumentation Diagram
6. EID X23 Industry 4.0

The following course was revised as per the suggestions of faculty and students:

1. EID 1202 Electron Devices

The curriculum and the syllabi (I and II semester) courses were discussed in the 16th meeting of Board of Studies of the Department of Electronics and Instrumentation Engineering and the board has recommended the same for approval.

The curriculum and syllabi of courses (I and II semester) of B.Tech EIE under R2021 are given in Annexure 17.11.1.

The Academic Council may consider and approve the same for implementation from the academic year 2021-22.

Resolution:

The agenda item was approved.

Item 17.11.2

To consider and approve the revised curriculum and syllabi of B.Tech. EIE under Regulations 2017.

Note on Agenda:

- As per the feedback from the students', the course EICX26 AppliedBio-Medical Instrumentation is introduced to improve the placement opportunities in the core biomedical industries and research organizations.

To consider and approve the curriculum and syllabi of B.Tech. Mechanical Engineering under Regulations 2021.

Note on Agenda:

The Institution follows the best practice of effecting major revision in curriculum and syllabi of B.Tech Programmes once in four years considering the dynamic changes in the industry, introduction of new technology and techniques, emerging trends and employment opportunities. This is in addition to the revision in curriculum and syllabi of programmes facilitated once in six months.

The curriculum of B.Tech. Mechanical Engineering under regulations 2021 was framed after deliberations with the various stakeholders viz., students, parents, Alumni, Experts from Academia and Industry in the in the School Level Advisory Committee (SLAC) meetings and various department level meetings

Based on the feedback from faculty the following new courses (Core and elective courses) were introduced in the B.Tech. Mechanical Engineering R 2021:

Core Courses:

MED 1211	Engineering Materials
GED 1214	Basic Civil and Mechanical Engineering

Professional Elective Courses:

MEDX 08	Mechanics of Composite Materials
MEDX 09	Design of Material handling Equipment
MEDX 10	Tribology
MEDX 11	Design of Electric Vehicle Components
MEDX 12	Shipment Packaging Design and Development
MEDX 13	Design of Pressure vessels and Piping Engineering
MEDX 17	Instrumentation and control
MEDX 19	Product Design using Value Engineering
MEDX 39	Design of Heat Transfer Equipments
MEDX 45	Design of Compact and Micro Heat Exchangers
MEDX 55	Advanced Machining Processes
MEDX 86	Characterization of Materials
MEDX 88	Materials for Modern Device Technology
MEDX 89	Materials for Energy Technologies
MEDX 90	Materials for Extreme Environment
MEDX 91	Dynamic behaviour of Materials
MEDX 92	Physical Metallurgy
MEDX 93	Corrosion Engineering

Based on the feedback from students and parents, the following new courses (Core and elective courses) were **introduced** in the B.Tech. Mechanical R 2021:

Core Courses:

MED 2105	Machine Drawing Laboratory
MED 2214	Materials Engineering & Technology
MED 2215	Machine Tools & Metrology

Professional Elective Courses:

MEDX 40	Electric and Hybrid vehicles
MEDX 57	Operation Research Techniques
MEDX 76	Aerospace Materials
MEDX 77	Thin films, Coatings and Applications
MEDX 79	Fracture of Engineering Materials
MEDX 80	Design and Applications of Biomaterials
MEDX 81	Powder Metallurgy

Based on the feedback from employers and alumni the following new courses (Core and elective courses) were introduced in the B.Tech. Mechanical R 2021:

Core Courses:

MED 3103	Automation in Manufacturing
MED 3212	Additive Manufacturing

Professional Elective Courses:

MEDX 56	Surface Mounting Technology
MEDX 58	Total Productive Maintenance
MEDX 59	Agile Manufacturing
MEDX 61	Advanced Welding Processes
MEDX 62	Advanced Casting and Forming Process
MEDX 63	Industrial Engineering
MEDX 64	Green Manufacturing Design and Practices
MEDX 65	Rubber Product Manufacturing Technology
MEDX 66	Tyre Manufacture and Testing
MEDX 82	Friction Materials: Formulation and Characterization
MEDX 83	Rubber Recycling and Waste Management
MEDX 84	Polymer Rheology
MEDX 85	Rubber Technology
	Industry 4.0

The following courses were **revised** as per the suggestions of faculty and students (Semester I and II)

- Advanced Processing Technology
- Additive Manufacturing Technology
- Adhesives and Surface Coating Technology
- Extrusion and Forming Process
- Speciality Elastomers
- Finite Element Analysis
- Computational Analysis of Polymeric Materials
- Automation in Polymer Processing Industries

  The following courses were revised:
    - PED 1211 Basics of Machining
    - PED 1212 Principles of Chemical Engineering

The curriculum and syllabi of courses (I and II semester) were discussed in the 13thmeeting of Board of Studies of the Department of Polymer Engineering and the board has recommended the same for approval.

The curriculum and syllabi of courses (I and II semester) of B.Tech. Polymer Engineering is given in <u>Annexure 17.15.1.</u>

The Academic Council may consider and approve the same for implementation from the academic year 2021-22.

Resolution:

After detailed deliberations, the agenda item was approved.

SCHOOL OF INFRASTRUCTURE
DEPARTMENT OF CIVIL ENGINEERING

Item 17.16

To consider and approve the recommendations of the Board of Studies of the Department of Civil Engineering.

Item 17.16.1

To consider and approve the curriculum and syllabi of B.Tech Civil Engineering under Regulations 2021.

Note on Agenda:

The Institution follows the best practice of effecting major revision in curriculum and syllabi of B.Tech. programmes once in four years considering the dynamic changes in the industry, introduction of new technology and techniques, emerging trends and employment opportunities. This is in addition to the revision in curriculum and syllabi of programmes facilitated once in six months.

The curriculum of B.Tech. Civil Engineering under regulations 2021 was framed after

deliberations with various stakeholders viz., students, parents, Alumni, Experts from Academia and Industry in the School Level Advisory Committee (SLAC) meetings and various department level meetings

The salient revisions in the curriculum of B.Tech. Civil Engineering under R 2021 are as follows:

Based on the feedback from faculty members of the department, the following new courses (Core and elective courses) were introduced in the B.Tech. Civil Engineering R2021:

1. Design of Substructures
2. Repair and Rehabilitation of RC Elements
3. Smart Infrastructure
4. Introduction to Finite Element Analysis of Structures
5. Introduction to Steel-Concrete Composite Structures
6. Water Power Engineering
7. Water Distribution Systems
8. Railway Engineering
9. Airport Planning & Engineering
10. Docks and Harbour Engineering
11. Water Resources Engineering

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Based on the feedback from students and parents, the following new courses (Core and elective courses) were introduced:

1. Non Destructive Techniques
2. Subsurface Investigation and Report Writing

Based on the feedback from employers, industry and alumni, the following new courses (Core and elective courses) were introduced:

1. Applications of software in Geotechnical Engineering
2. Lean Construction
3. Design Principles of Special foundation
4. Sustainable Water and Sanitation for Smart cities
5. GPS & Drone Surveying
6. Spatial Data Modelling & Analysis
7. Intelligent Transportation Systems

The following courses were revised as per the suggestions of faculty and students:

CED 1201   Building Construction and Practices
CED 1202   Surveying
CED 1203   Civil Engineering Drawing

These revisions were discussed in the 15th meeting of Board of Studies of the

DEPARTMENT OF PHYSICS

Item 17.21

To consider and approve the recommendations of the Board of Studies of the Department of Physics.

Item 17.21.1

To consider and approve the Physics courses offered to the B.Tech Programme under Regulations 2021.

Note on Agenda:

Based on the deliberations in the department level meetings, Meeting of HoDs, Dean and Directors held on 26.05.2021 and 03.06.2021, it was proposed to offer unique physics courses considering the requirement of circuit and non circuit branches. The following physics courses were offered to the B.Tech. Programmes under Regulations 2021.

New Courses in I Semester

- PHD 1181 Applied Physics
- PHD 1182 Engineering Physics
- PHD 1183 Mechanics of Solids

New Courses in II Semester

- PHD 1281 Non Destructive Testing of Materials
- PHD 1282 Materials Science for Engineering
- PHD 1283 Biomaterials
- PHD 1284 Optical Fibre Communication
- PHD 1285 Semiconductor Physics for Information Technology
- PHD 1286 Sensors and Actuators*(For CSE-IOT)*
- PHD 1287 Fundamentals of Nanotechnology and Its Applications

The syllabi of the courses were deliberated in the 11th Meeting of Board of Studies of the Department of Physics and the board has recommended the same for approval.

The syllabi of the Physics courses offered to B.Tech. programmes R 2021 are given in Annexure 17.21.1.

The Academic Council may consider and approve the same for implementation from the academic year 2021-22.

Discussions:

Dr. B. Suresh emphasized the need for inclusion of topics related to solar energy in the relevant physics courses.

Resolution:

After detailed deliberations, the agenda item was approved.