Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Department of Civil Engineering

Stakeholder Feedback on Curriculum & Teaching – Learning Analysis

Academic Year 2021-2022

The following points were suggested by the stakeholder in feedback on Curriculum & Teaching – Learning:

1. Elective subjects related to Institute and Industrial Practices may be added.
2. Advanced technologies enhancing student's ability to satisfy recent trends can be included.
3. Skill development courses can be added in the syllabus to enhance practical skills of students.
4. New courses in NPTEL should be included in elective subjects to improve online self study practice of students.
5. Industrial Visit for individual subject must be arranged at frequent intervals to develop the practical exposure of students in particular domain.
6. In-plant trainings and Internship trainings should be arranged in more percentage to increase employability skills.
7. Value added courses may be arranged frequently on recent trends to students.
8. Carrier development courses related to employability skills and communication can be included in curriculum.
9. Mini projects can be included in curriculum to improve the creativity, ethics, team co-ordination and working skills of students.
10. Core and Professional Elective subjects and specific topics that satisfy the needs of Industrial requirements can be added in curriculum.

HoD

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Action Taken Report on Stakeholder Feedback on Curriculum & Teaching – Learning

Stakeholder Suggestions	Action Taken
• Elective subjects related to Institute and Industrial Practices may be added. • Advanced technologies enhancing student's ability to satisfy recent trends can be included. • Skill development courses can be added in the syllabus to enhance practical skills of students. • New courses in NPTEL should be included in elective subjects to improve online self study practice of students. • Industrial Visit for individual subject must be arranged at frequent intervals to develop the practical exposure of students in particular domain. • In-plant trainings and Internship trainings should be arranged in more percentage to increase employability skills. • Value added courses may be arranged frequently on recent trends to students. • Carrier development courses related to employability skills and communication can be included in curriculum. • Mini projects can be included in curriculum to improve the creativity, ethics, team co-ordination and working skills of students. • Core and Professional Elective subjects and specific topics that satisfy the needs of Industrial requirements can be added in curriculum.	The suggestions received from stakeholders on the curriculum and syllabus feedbacks were taken up by the Department of Civil Engineering. All the suggestions were unanimously accepted by the faculty members and it was decided to incorporate them in the KNCET -UGR2020 Regulation. This will be implemented in the academic year 2021-2022 under KNCET -UGR2020 for the students of Civil Engineering after receiving the approval from the Board of Studies and Academic Council.

HoD

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Department of Civil Engineering

NOTE

As per the action taken report dated 03-09-2021, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD
Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Enclosures:

1. Curriculum (Regulation KNCET -UGR2020) of Department of Civil Engineering.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Department of Civil Engineering

NOTE

As per the action taken report dated 22-07-2022, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Enclosures:

1. Curriculum (Regulation KNCET -UGR2020) of Department of Civil Engineering.

B.E. Civil Engineering
Regulations: KNCET-UGR2020
I to VIII Semesters Curriculum

Semester I							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN101	Technical English-I	HSMC	3	0	0	3
2	20MA101	Mathematics-I	BSC	3	1	0	4
3	20PH101	Engineering Physics	BSC	3	0	0	3
4	20CY101	Engineering Chemistry	BSC	3	0	0	3
5	20GE101	Structured Programming Using C	ESC	3	0	0	3
6	20GE102	Engineering Graphics	ESC	2	0	2	3
Practicals							
7	20BS101L	Physics and Chemistry Laboratory	BSC	0	0	2	1
8	20GE103L	Structured Programming Using C Laboratory	ESC	0	0	2	1
9	20EEC101L	English for Effective Communication	EEC	0	0	2	1
			Total	**17**	**1**	**8**	**22**

Semester II							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN201	Technical English-II	HSMC	3	0	0	3
2	20MA201	Mathematics-II	BSC	3	1	0	4
3	20PH202	Material Science	BSC	3	0	0	3
4	20BS201	Environmental Science	HSMC	3	0	0	3
5	20BE201	Engineering Mechanics	PCC	3	1	0	4
6	20BE202	Basic Electrical and Electronics Engineering	ESC	3	0	0	3
Practicals							
7	20GE201L	Engineering Practices Laboratory	ESC	0	0	2	1
8	20CE201L	Building Drafting and Modeling Laboratory	PCC	0	0	2	1
9	20EEC201L	Soft Skills	EEC	0	0	2	1
			Total	**18**	**2**	**6**	**23**

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Semester III							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA302	Transforms and Partial Differential Equations	BSC	3	1	0	4
2	20CE301	Strength of Materials-I	PCC	3	0	0	3
3	20CE302	Mechanics of Fluids	PCC	3	0	0	3
4	20CE303	Surveying	PCC	3	0	0	3
5	20CE304	Construction Materials	PCC	3	0	2	4
6	20CE305	Engineering Geology	ESC	3	0	0	3
7	20MC003	Constitution of India	HSMC	2	0	0	-
Practicals							
8	20CE306L	Surveying Laboratory	PCC	0	0	2	1
9	20EEC301L	Soft Skills Development	EEC	0	0	2	1
			Total	**20**	**1**	**6**	**22**

Semester IV							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA401	Numerical Methods	BSC	4	0	0	4
2	20CE401	Strength of Materials-II	PCC	3	0	0	3
3	20CE402	Applied Hydraulic Engineering	PCC	3	0	0	3
4	20CE403	Construction Techniques, Equipments and Practice	PCC	3	0	0	3
5	20CE404	Soil Mechanics	PCC	3	0	0	3
6	20CE405	Highway Engineering	PCC	3	0	0	3
Practicals							
7	20EEC401L	Life Skills and Personality Development	EEC	0	0	2	1
8	20CE406L	Strength of Materials Laboratory	PCC	0	0	2	1
9	20CE407L	Hydraulic Engineering Laboratory	PCC	0	0	2	1
			Total	**19**	**0**	**6**	**22**

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Semester V							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20CE501	Design of Reinforced Concrete Elements	PCC	3	1	0	4
2	20CE502	Structural Analysis-I	PCC	3	0	0	3
3	20CE503	Railways, Airports and Harbour Engineering	PCC	3	0	0	3
4	20CE504	Foundation Engineering	PCC	3	0	0	3
5	20MC002	Universal Human Values 2: Understanding Harmony	HSMC	2	1	0	3
6		Professional Elective-I	PEC	3	0	0	3
Practicals							
7	20CE505L	Survey Camp (2 weeks - During IV Semester)	PCC	0	0	0	1
8	20CE506L	Geotechnical Engineering Laboratory	PCC	0	0	3	1
9	20CE507L	Highway Engineering Laboratory	PCC	0	0	2	1
10	20EEC501L	Professional Skills Development	EEC	0	0	2	1
			Total	**17**	**2**	**7**	**23**

Semester VI							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20CE601	Design of Steel Structures	PCC	3	0	0	3
2	20CE602	Structural Analysis-II	PCC	3	0	0	3
3	20CE603	Water Supply and Waste Water Engineering	PCC	3	0	0	3
4	20CE604	Estimation Costing and Valuation Engineering	PCC	3	0	0	3
5		Professional Elective-II	PEC	3	0	0	3
6		Open Elective-I	OEC	3	0	0	3
Practicals							
7	20CE605L	Structural Design and Drawing	PCC	0	0	3	1
8	20CE606L	Water Supply and Waste Water Engineering Laboratory	PCC	0	0	3	1
9	20EEC601L	Employability Skills	EEC	0	0	2	1
10	20CE607L	Mini Project-I	EEC	0	0	2	1
			Total	**18**	**0**	**10**	**22**

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Semester VII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20CE701	Concrete Technology	PCC	3	0	0	3
2	20MG501	Principles of Management	HSMC	3	0	0	3
3		Professional Elective-III	PEC	3	0	0	3
4		Professional Elective-IV	PEC	3	0	0	3
5		Open Elective –II	OEC	3	0	0	3
Practicals							
6	20CE702L	Mini Project-II	EEC	0	0	2	1
			Total	**15**	**0**	**2**	**16**

Semester VIII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1		Professional Elective-V	PEC	3	0	0	3
2		Professional Elective-VI	PEC	3	0	0	3
Practicals							
3	20CE801L	Project work	EEC	0	0	20	10
			Total	**6**	**0**	**20**	**16**

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Professional Elective Course (PEC)

Semester- V
Elective I

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20CE501PE	Industrial Waste Management	PEC	3	0	0	3
2	20CE502PE	Air Pollution and Control Engineering	PEC	3	0	0	3
3	20CE503PE	Non Destructive Testing	PEC	3	0	0	3
4	20CE504PE	Irrigation Engineering	PEC	3	0	0	3
5	20CE505PE	Remote Sensing Essentials	PEC	3	0	0	3
6	20CE506PE	Hydrology	PEC	3	0	0	3

Semester- VI
Elective II

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20CE601PE	Ground Improvement Techniques	PEC	3	0	0	3
2	20CE602PE	Rock Engineering	PEC	3	0	0	3
3	20CE603PE	Urban Planning and Development	PEC	3	0	0	3
4	20CE604PE	Advanced RC Design	PEC	3	0	0	3
5	20MG802PE	Engineering Economics	PEC	3	0	0	3
6	20CE605PE	Geo-Environmental Engineering	PEC	3	0	0	3
7	20MA601PE	Quantitative and Reasoning Aptitude	PEC	3	0	0	3

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Semester- VII
Elective III

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20CE701PE	Advanced Steel Design	PEC	3	0	0	3
2	20CE702PE	Prestressed Concrete Structures	PEC	3	0	0	3
3	20CE703PE	Precast Technology in Building	PEC	3	0	0	3
4	20CE704PE	Modern Construction Materials	PEC	3	0	0	3
5	20CE705PE	Basic Structural Dynamics and Earthquake Engineering	PEC	3	0	0	3
6	20CE706PE	Pavement Engineering	PEC	3	0	0	3

Semester- VII
Elective IV

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20CE707PE	Traffic Engineering and Management	PEC	3	0	0	3
2	20CE708PE	Fire Protection Services and Maintenance Management of Building	PEC	3	0	0	3
3	20CE709PE	Irrigation and Environmental Engineering Design and Drawing	PEC	3	0	0	3
4	20CE710PE	Fundamentals of Nanoscience	PEC	3	0	0	3
5	20CE711PE	Coastal and Offshore Engineering	PEC	3	0	0	3
6	20ME807PE	Project Management	PEC	3	0	0	3

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Semester- VIII
Elective V

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20CE801PE	Industrial Structures	PEC	3	0	0	3
2	20CE802PE	Water Resources Systems Engineering	PEC	3	0	0	3
3	20CE803PE	Municipal Solid Waste Management	PEC	3	0	0	3
4	20CE804PE	Groundwater Engineering	PEC	3	0	0	3
5	20CE805PE	Prefabricated Structures	PEC	3	0	0	3
6	20GE601PE	Professional Ethics in Engineering	PEC	3	0	0	3

Semester- VIII
Elective VI

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20CE806PE	Maintenance and Repair of Concrete Structures	PEC	3	0	0	3
2	20CE807PE	Coastal Engineering	PEC	3	0	0	3
3	20CE808PE	Bridge Engineering	PEC	3	0	0	3
4	20CE809PE	Integrated Water Resources Management	PEC	3	0	0	3
5	20MG701PE	Total Quality Management	PEC	3	0	0	3
6	20CE810PE	Construction Planning and Scheduling	PEC	3	0	0	3

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Thalurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Open Elective Course (OEC)

Open Elective I (Semester- VI)

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20ME601OE	Production Technology	OEC	3	0	0	3
2	20ME602OE	Basics of Automotive Components	OEC	3	0	0	3
3	20EC503OE	Internet of Things	OEC	3	0	0	3
4	20EC501OE	Sensors and Transducers	OEC	3	0	0	3
5	20EE501OE	Non-Conventional Energy Resources	OEC	3	0	0	3
6	20EE502OE	Industrial Automation	OEC	3	0	0	3
7	20IT501OE	Fundamentals of Operating Systems	OEC	3	0	0	3
8	20IT502OE	Introduction to Database	OEC	3	0	0	3
9	20CS506OE	Fundamentals of Software Engineering	OEC	3	0	0	3
10	20CS507OE	Introduction to Data Structures and Algorithms	OEC	3	0	0	3
11	20BM501OE	Basics of Biomedical Instrumentation	OEC	3	0	0	3
12	20BM502OE	Introduction to Cell Biology	OEC	3	0	0	3

Open Elective II (Semester- VII)

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20ME701OE	Basics of Hydraulic and Pneumatic Systems	OEC	3	0	0	3
2	20ME702OE	Alternative Energy Fuels	OEC	3	0	0	3
3	20EC701OE	Consumer Electronics	OEC	3	0	0	3
4	20EC702OE	RFID and Flexible Sensors	OEC	3	0	0	3
5	20EE701OE	Energy Storage Systems	OEC	3	0	0	3
6	20EE702OE	Electrical Safety Engineering	OEC	3	0	0	3
7	20IT701OE	Programming in Java	OEC	3	0	0	3
8	20IT702OE	Web Design	OEC	3	0	0	3
9	20CS706OE	E-Commerce	OEC	3	0	0	3
10	20CS708OE	Introduction to Computer Organization	OEC	3	0	0	3
11	20BM701OE	Bioinformatics	OEC	3	0	0	3
12	20BM702OE	Fundamentals of Nutrition	OEC	3	0	0	3

Head of the Department
Department of Civil Engineering,
Kongunadu College of Engineering and Technology (Autonomous),
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com| Phone: 04326 – 277571
www.kongunadu.ac.in

STAKEHOLDER FEEDBCK ON CURRICULUM & TEACHING –LEARNING ANALYSIS

ACADEMIC YEAR: 2021-2022

The following points were suggested by the stakeholders in feedback on curriculum & teaching-learning:

1. Recommended to concentrate on software project management subjects- to add few topics
2. Need to add some topics in Software Project Management like Resource Allocation, Critical Patterns etc.
3. Advised that Cloud Computing subject was too vast. Need to reduce the Portion in Unit 5
4. Add some industry related subjects in Professional Elective.
5. Concentrate on modern tools for staffing solution through software projects.
6. Concentrate on Cloud Computing Fundamentals
7. Need to include Professional Readiness for Innovation, Employability and Entrepreneurship
8. More Practice need in Programming Languages
9. Need to add some more experiments like Hive, Pig in Data Analytics Laboratory
10. If possible need to add Hadoop experiment in cloud computing lab Laboratory
11. Recommended to add few more experiments in Cloud computing laboratory.
12. Suggestions to add CLR parser topic in Unit-2 in Compiler Design
13. Suggested to reframe unit-4 in Compiler Design and to add few topics.
14. In Compiler Design combine unit 1 and unit 2 and reframe as unit 1 since it has vast topics.
15. Recommended to add topics Peep-hole optimization - Basic block and Flow Graph Loops in the syllabus.

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215
Tamil Nadu

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com| Phone: 04326 – 277571
www.kongunadu.ac.in

ACTION TAKEN REPORT ON STAKE HOLDER FEEDBACK

CURRICULUM & TEACHING LEARNING

SUGGESTIONS	ACTION TAKEN
Recommended to concentrate on software project management subjects- to add few topics	The topics have been added as per the suggestion.
Need to add some topics in Software Project Management like Resource Allocation, Critical Patterns etc.	The topics have been added as per the suggestion.
Advised that Cloud Computing subject was too vast. Need to reduce the Portion in Unit 5	The topics has been removed as per suggestion
Add some industry related subjects in Professional Elective.	Subjects has been added as per recommended
Concentrate on modern tools for staffing solution through software projects.	Recommended topics have been added in Software Project Management.
Concentrate on Cloud Computing Fundamentals	The unit has been reframed as per suggestions.
Need to include Professional Readiness for Innovation, Employability and Entrepreneurship	Recommended subject have been added under curriculum.
More Practice need in Programming Languages	Programming Subjects which enhance student's skills has been added in electives.
Need to add some more experiments like Hive, Pig in Data analytics Laboratory	Suggested Experiments are added.
If possible need to add Hadoop experiment in cloud computing lab Laboratory	Suggested Experiments are added.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Recommended to add few more experiments in Cloud computing laboratory.	Four experiments have been added to the subject.
Suggestions to add CLR parser topic in Unit-2 in Compiler Design	The topics have been added as per the suggestion.
Suggested to reframe unit-4 in Compiler Design and to add few topics.	The topics have been added as per the suggestion.
In Compiler Design combine unit 1 and unit 2 and reframe as unit 1 since it has vast topics.	The Unit has been reframed as per suggestion
Recommended to add topics Peep-hole optimization - Basic block and Flow Graph Loops in the syllabus.	The topics have been added as per the suggestion.

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.
Tamil Nadu.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

NOTE

As per the action taken report dated 28-08-2021, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 213.
Tamil Nadu.

Enclosures:

1. Curriculum (Regulation KNCET -UGR2020) of Department of Computer Science and Engineering.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

NOTE

As per the action taken report dated 09-07-2022, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD

Head of the Department
Department of Computer Science and Engineering
Kongunadu College of Engineering and Technology
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215
Tamil Nadu

Enclosures:

1. Curriculum (Regulation KNCET -UGR2020) of Department of Computer Science and Engineering.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

B.E- CURRICULUM

[I-VIII SEMESTER]

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.
Tamil Nadu.

Kongunadu College of Engineering and Technology (Autonomous)

Affiliated to Anna University, Chennai
B.E. Computer Science and Engineering
Regulations: KNCET-UGR2020
Choice Based Credit System
I to VIII Semesters Curricula & Syllabi

Semester I							
S.No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN101	Technical English-I	HSMC	3	0	0	3
2	20MA101	Mathematics-I	BSC	3	1	0	4
3	20PH101	Engineering Physics	BSC	3	0	0	3
4	20CY101	Engineering Chemistry	BSC	3	0	0	3
5	20GE101	Structured Programming Using C	ESC	3	0	0	3
6	20GE102	Engineering Graphics	ESC	2	0	2	3
Practicals							
7	20BS101L	Physics and Chemistry Laboratory	BSC	0	0	2	1
8	20GE103L	Structured Programming Using C Laboratory	ESC	0	0	2	1
9	20EEC101L	English for Effective Communication	EEC	0	0	2	1
			Total	**17**	**1**	**8**	**22**

Semester II							
S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN201	Technical English-II	HSMC	3	0	0	3
2	20MA201	Mathematics-II	BSC	3	1	0	4
3	20PH201	Applied Physics	BSC	3	0	0	3
4	20BS201	Environmental Science	HSMC	3	0	0	3
5	20CS201	Python Programming	PCC	3	0	0	3
6	20BE203	Basic Electrical, Electronics and Measurement Engineering	ESC	3	0	0	3
Practicals							
7	20GE201L	Engineering Practices Laboratory	ESC	0	0	2	1
8	20CS202L	Python Programming Laboratory	PCC	0	0	2	1
9	20EEC201L	Soft Skills	EEC	0	0	2	1
			Total	**18**	**1**	**6**	**22**

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215,
Tamil Nadu.

CHAIRMAN
BOS(CSE)

Semester III							
S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA301	Discrete Mathematics	BSC	3	1	0	4
2	20CS301	Data Structures	PCC	3	0	0	3
3	20CS302	Computer Architecture	PCC	3	0	0	3
4	20EC304	Digital Principles and System Design	ESC	3	0	0	3
5	20EC307	Communication Engineering	ESC	3	0	0	3
6	20IT301	Java Programming	PCC	3	0	2	4
Practicals							
7	20CS303L	Data Structures Laboratory	PCC	0	0	2	1
8	20EC309L	Digital Laboratory	ESC	0	0	3	1
9	20EEC301L	Soft Skills Development	EEC	0	0	2	1
			Total	**18**	**1**	**9**	**23**

Semester IV							
S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA402	Probability and Queueing Theory	BSC	3	1	0	4
2	20CS401	Computer Networks	PCC	3	0	0	3
3	20CS402	Database Management Systems	PCC	3	0	0	3
4	20CS403	Design and Analysis of Algorithms	PCC	3	0	0	3
5	20IT401	Operating Systems	PCC	3	0	0	3
6	20IT402	Software Engineering	PCC	3	0	0	3
Practicals							
7	20CS404L	Database Management Systems Laboratory	PCC	0	0	2	1
8	20CS405L	Computer Networks Laboratory	PCC	0	0	2	1
9	20IT403L	Operating Systems Laboratory	PCC	0	0	2	1
10	20EEC401L	Life Skills and Personality Development	EEC	0	0	2	1
			Total	**18**	**1**	**8**	**23**

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215,
Tamil Nadu.

CHAIRMAN
BOS(CSE)

Semester V							
S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
Theory							
1	20CS501	Mobile Computing	PCC	3	0	0	3
2	20CS502	Theory of Computation	PCC	3	0	0	3
3	20CS503	Object Oriented Analysis and Design	PCC	3	0	2	4
4	20EC502	Microprocessors and Microcontrollers	PCC	3	0	0	3
5	20MC002	Universal Human Values 2: Understanding Harmony	HSMC	3	0	0	3
6		Professional Elective-I	PEC	3	0	0	3
7	20MC003	Constitution of India	HSMC	2	0	0	0
Practicals							
8	20CS504L	Mini Project-I	EEC	0	0	2	1
9	20EC505L	Microprocessors and Microcontrollers Laboratory	PCC	0	0	3	1
10	20EEC501L	Professional Skills Development	EEC	0	0	2	1
			Total	**20**	**0**	**9**	**22**

Semester VI							
S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
Theory							
1	20CS601	Big Data Analytics	PCC	3	0	0	3
2	20CS602	Compiler Design	PCC	3	0	0	3
3	20IT502	Web Technology	PCC	3	0	2	4
4		Professional Elective-II	PEC	3	0	0	3
5		Open Elective-I	OEC	3	0	0	3
Practicals							
6	20CS603L	Data Analytics Laboratory	PCC	0	0	2	1
7	20CS604L	Mini Project-II	EEC	0	0	2	1
8	20EEC601L	Employability Skills	EEC	0	0	2	1
			Total	**15**	**0**	**8**	**19**

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215,
Tamil Nadu.

CHAIRMAN
BOS(CSE)

Semester VII							
S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
Theory							
1	20CS701	Cloud Computing	PCC	3	0	0	3
2	20IT701	Cryptography and Network Security	PCC	3	0	0	3
3		Professional Elective-III	PEC	3	0	0	3
4		Professional Elective-IV	PEC	3	0	0	3
5		Open Elective-II	OEC	3	0	0	3
Practicals							
6	20CS702L	Cloud Computing Laboratory	PCC	0	0	2	1
7	20IT702L	Security Laboratory	PCC	0	0	2	1
8	20EEC701L	Professional Readiness for Innovation, Employability and Entrepreneurship	EEC	0	0	6	3
			Total	**18**	**0**	**10**	**20**

Semester VIII							
S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
Theory							
1		Professional Elective-V	PEC	3	0	0	3
2		Professional Elective-VI	PEC	3	0	0	3
Practicals							
3	20CS801L	Project Work	EEC	0	0	20	10
			Total	**6**	**0**	**20**	**16**

Total no. of credits: 167

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Thottiam (Tk), Trichy (Dt)-621 215.
Tamil Nadu.

CHAIRMAN
BOS(CSE)

Professional Elective Course (PEC)
Semester- V
Elective I

S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	20CS501PE	Advanced Data Structures	PEC	3	0	0	3
2	20CS502PE	Multicore Architecture	PEC	3	0	0	3
3	20CS503PE	Distributed Systems	PEC	3	0	0	3
4	20EC506PE	Principles of Digital Signal Processing	PEC	3	0	0	3
5	20IT502PE	Unix Internals	PEC	3	0	0	3
6	20IT701PE	Computer Graphics and Multimedia	PEC	3	0	0	3
7	20MG501	Principles of Management	HSMC	3	0	0	3

Semester- VI
Elective II

S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	20MA601PE	Quantitative and Reasoning Aptitude	PEC	3	0	0	3
2	20MA602PE	Graph Theory and Applications	PEC	3	0	0	3
3	20GE501PE	Intellectual Property Rights	PEC	3	0	0	3
4	20EC806PE	Mobile Adhoc Networks	PEC	3	0	0	3
5	20EC701	Embedded and Real Time Systems	PEC	3	0	0	3
6	20IT501	Data Warehousing and Data Mining	PEC	3	0	0	3
7	20IT601PE	Mobile Application Development	PEC	3	0	0	3

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.
Tamil Nadu.

CHAIRMAN
BOS(CSE)

Semester- VII
Elective III

S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	20CS602PE	An Introduction to Artificial Intelligence	PEC	3	0	0	3
2	20CS702PE	Advanced Database Technologies	PEC	3	0	0	3
3	20CS703PE	TCP/IP Design and Implementation	PEC	3	0	0	3
4	20CS704PE	Soft Computing	PEC	3	0	0	3
5	20IT702PE	Social Network Analysis	PEC	3	0	0	3
6	20IT706PE	User Interface Design	PEC	3	0	0	3

Semester- VII
Elective IV

S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	20CS705PE	Information Retrieval Techniques	PEC	3	0	0	3
2	20CS706PE	C# and .Net Framework	PEC	3	0	0	3
3	20CS707PE	Introduction to Machine Learning	PEC	3	0	0	3
4	20CS708PE	Compiler Optimization Techniques	PEC	3	0	0	3
5	20EC601PE	Digital Image Processing Techniques	PEC	3	0	0	3
6	20IT703PE	Service Oriented Architecture	PEC	3	0	0	3

Semester- VIII
Elective V

S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	20CS701PE	Software Testing	PEC	3	0	0	3
2	20CS801PE	Software Project Management	PEC	3	0	0	3
3	20CS802PE	Software Quality Assurance	PEC	3	0	0	3
4	20CS803PE	Parallel Computing Architecture	PEC	3	0	0	3
5	20IT805PE	Introduction to Blockchain Technology	PEC	3	0	0	3
6	20MG701	Total Quality Management	PEC	3	0	0	3

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.
Tamil Nadu.

CHAIRMAN
BOS(CSE)

Semester- VIII
Elective VI

S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	20IT602PE	Digital Asset Management	PEC	3	0	0	3
2	20IT707PE	Human Computer Interaction	PEC	3	0	0	3
3	20CS805PE	Cyber Forensics	PEC	3	0	0	3
4	20CS804PE	Deep Learning	PEC	3	0	0	3
5	20CS806PE	Information Security	PEC	3	0	0	3
6	20IT804PE	Ethical Hacking	PEC	3	0	0	3

Open Elective Course (OEC)
Open Elective I (Semester-VI)

S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	20BM501OE	Basics of Biomedical Instrumentation	OEC	3	0	0	3
2	20BM502OE	Introduction to Cell Biology	OEC	3	0	0	3
3	20CE501PE	Industrial Waste Management	OEC	3	0	0	3
4	20CE502PE	Air Pollution and Control Engineering	OEC	3	0	0	3
5	20CE601OE	Smart Materials and Smart Structures	OEC	3	0	0	3
6	20EC501OE	Sensors and Transducers	OEC	3	0	0	3
7	20EC503OE	Introduction to Internet of Things	OEC	3	0	0	3
8	20EE501OE	Non-Conventional Energy Resources	OEC	3	0	0	3
9	20EE502OE	Industrial Automation	OEC	3	0	0	3
10	20EE503OE	Energy Management and Auditing	OEC	3	0	0	3
11	20ME601OE	Production Technology	OEC	3	0	0	3
12	20ME602OE	Basics of Automotive Components	OEC	3	0	0	3

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215,
Tamil Nadu.

CHAIRMAN
BOS(CSE)

Open Elective II (Semester- VII)

S. No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	20BM701OE	Bioinformatics	OEC	3	0	0	3
2	20BM702OE	Fundamentals of Nutrition	OEC	3	0	0	3
3	20CE701OE	Environmental Impact Assessment	OEC	3	0	0	3
4	20CE702OE	Building Services	OEC	3	0	0	3
5	20EC701OE	Consumer Electronics	OEC	3	0	0	3
6	20EC702OE	RFID and Flexible Sensors	OEC	3	0	0	3
7	20EE701OE	Energy Storage Systems	OEC	3	0	0	3
8	20EE702OE	Electrical Safety Engineering	OEC	3	0	0	3
9	20ME701OE	Basics of Hydraulic and Pneumatic Systems	OEC	3	0	0	3
10	20ME702OE	Alternative Energy Fuels	OEC	3	0	0	3

Head of the Department
Department of Computer Science and Engineering,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po), Thottiam (Tk), Trichy (Dt)-621 215.
Tamil Nadu.

CHAIRMAN
BOS(CSE)

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com| Phone: 04326 – 277571
www.kongunadu.ac.in

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

STAKEHOLDER FEEDBACK ON CURRICULUM & TEACHING –LEARNING ANALYSIS

ACADEMIC YEAR 2021-2022

The following points were suggested by the stakeholders in feedback on curriculum & Teaching – learning

1. Latest technologies like IoT may be added
2. New subjects related to develop the entrepreneurship skill may be introduced as electives
3. Practical oriented training can be given.
4. NPTEL course may be included.
5. Mini project is included as mandatory course.
6. Programming in VLSI design may be added in curriculum.

Head of the Department
Department of Electronics and
Communication Engineering
Kongunadu College of Engineering
and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com| Phone: 04326 – 277571
www.kongunadu.ac.in

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ACTION TAKEN REPORT ON STAKEHOLDER FEEDBACK ON CURRICULUM & TEACHING-LEARNING

S.No	STAKEHOLDERS SUGGESTION	ACTION TAKEN
1	Latest technologies like IoT may be added	The suggestion received from stake holders on the curriculum and syllabus feedback was taken up by Department of Electronics and Communication Engineering. All suggestions were accepted by the faculty members and it is decided to incorporate in the KNCETUGR2020 regulations. Hence the faculties were requested to incorporate the suggestion in the respected course and frame the syllabus. This will be implemented in the Academic year 2022-2023 under KNCETUGR2020 regulation for the students of Electronics and Communication Engineering after getting the approval from board of studies and academic council
2	New subjects related to develop the entrepreneurship skill may be introduced as electives	
3	Practical oriented training can be given.	
4	NPTEL course may be included.	
5	Mini project is included as mandatory course.	
6	Programming in VLSI design may be added in curriculum.	

Head of the Department
Department of Electronics and
Communication Engineering
Kongunadu College of Engineering
and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

NOTE

As per the action taken report dated 27-07-2022, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

Enclosures:
1. Curriculum (Regulation KNCET -UGR2020) of Department of the Electronics and Communication Engineering

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

NOTE

As per the action taken report dated 16-09-2021, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk),
Trichy (Dt), Pin 621 215.

Enclosures:

1. Curriculum (Regulation KNCET -UGR2020) of Department of the Electronics and Communication Engineering

Kongunadu College of Engineering and Technology (Autonomous)

Affiliated to Anna University, Chennai

B.E. Electronics and Communication Engineering

Regulations: KNCET-UGR2020

Choice Based Credit System

I to VIII Semesters Curricula & Syllabi

Semester I							
S.No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN101	Technical English-I	HSMC	3	0	0	3
2	20MA101	Mathematics-I	BSC	3	1	0	4
3	20PH101	Engineering Physics	BSC	3	0	0	3
4	20CY101	Engineering Chemistry	BSC	3	0	0	3
5	20GE101	Structured Programming Using C	ESC	3	0	0	3
6	20GE102	Engineering Graphics	ESC	2	0	2	3
Practicals							
7	20BS101L	Physics and Chemistry Laboratory	BSC	0	0	2	1
8	20GE103L	Structured Programming Using C Laboratory	ESC	0	0	2	1
9	20EEC101L	English for Effective Communication	EEC	0	0	2	1
			Total	**17**	**1**	**8**	**22**

Semester II							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN201	Technical English-II	HSMC	3	0	0	3
2	20MA201	Mathematics-II	BSC	3	1	0	4
3	20PH201	Applied Physics	BSC	3	0	0	3
4	20BS201	Environmental Science	HSMC	3	0	0	3
5	20EC201	Semiconductor Devices	ESC	3	0	0	3
6	20EE201	Electric Circuit Analysis	ESC	3	0	0	3
Practicals							
7	20GE201L	Engineering Practices Laboratory	ESC	0	0	2	1
8	20EC202L	Circuits and Devices Laboratory	PCC	0	0	2	1
9	20EEC201L	Soft Skills	EEC	0	0	2	1
			Total	**18**	**1**	**6**	**22**

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

CHAIRMAN
BOS/ECE

Semester III							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA302	Transforms and Partial Differential Equations	BSC	3	1	0	4
2	20EC301	Electronic Circuits-I	PCC	3	0	0	3
3	20EC302	Digital Electronics	PCC	3	0	0	3
4	20EC303	Signals and Systems	PCC	3	1	0	4
5	20IT302	C++ and Data Structures	ESC	3	0	0	3
6	20MC003	Constitution of India		2	0	0	0
Practicals							
7	20EC308L	Analog and Digital Circuits Laboratory	PCC	0	0	3	1
8	20IT303L	C++ and Data Structures Laboratory	ESC	0	0	3	1
9	20EEC301L	Soft skills Development	EEC	0	0	2	1
			Total	**17**	**2**	**8**	**20**

Semester IV							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA403	Probability and Random Processes	BSC	3	1	0	4
2	20EC401	Electronic Circuits-II	PCC	3	0	0	3
3	20EE303	Electromagnetic Fields	ESC	3	0	0	3
4	20EC402	Linear Integrated Circuits	PCC	3	0	0	3
5	20EC403	Communication Theory	PCC	3	0	0	3
6	20EC404	Control System Engineering	PCC	3	0	0	3
Practicals							
7	20EC405L	Electronic Circuits-II Laboratory	PCC	0	0	3	1
8	20EC406L	Linear Integrated Circuits Laboratory	PCC	0	0	3	1
9	20EEC401L	Life Skills and personality Development	EEC	0	0	2	1
			Total	**18**	**2**	**8**	**22**

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

CHAIRMAN
BOS/ECE

Semester V							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EC501	Digital Communication	PCC	3	0	2	4
2	20EC502	Microprocessors and Microcontrollers	PCC	3	0	0	3
3	20EC503	Transmission Lines and Wave Guides	PCC	3	0	0	3
4	20EC504	Digital Signal Processing	PCC	3	0	2	4
5	20MC002	Universal Human Values 2: Understanding Harmony	HSC	3	0	0	3
6		Professional Elective -I	PEC	3	0	0	3
Practicals							
7	20EC505L	Microprocessors and Microcontrollers Laboratory	PCC	0	0	3	1
8	20EC506L	Mini Project-I	EEC	0	0	2	1
9	20EEC501L	Professional Skills Development	EEC	0	0	2	1
			Total	**18**	**0**	**11**	**23**

Semester VI							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EC601	Antenna and Wave Propagation	PCC	3	0	0	3
2	20EC602	VLSI Design	PCC	3	0	0	3
3	20CS401	Computer Networks	ESC	3	0	0	3
4	20MG501	Principles of Management	HSMC	3	0	0	3
5		Professional Elective-II	PEC	3	0	0	3
6		Open Elective-I	OEC	3	0	0	3
Practicals							
7	20EC603L	VLSI Design Laboratory	PCC	0	0	3	1
8	20EC604L	Networks Laboratory	PCC	0	0	3	1
9	20EC605L	Mini Project-II	EEC	0	0	2	1
10	20EEC601L	Employability Skills	EEC	0	0	2	1
			Total	**18**	**0**	**10**	**22**

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

CHAIRMAN
BOS/ECE

Semester VII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EC701	Embedded and Real Time Systems	PCC	3	0	0	3
2	20EC702	Microwave Engineering and Optical Communication	PCC	3	0	0	3
3		Professional Elective-III	PEC	3	0	0	3
4		Professional Elective-IV	PEC	3	0	0	3
5		Open Elective-II	OEC	3	0	0	3
Practicals							
7	20EC703L	Embedded Laboratory	PCC	0	0	3	1
8	20EC704L	Microwave and Optical Communication Laboratory	PCC	0	0	3	1
			Total	**15**	**0**	**6**	**17**

Semester VIII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1		Professional Elective-V	PEC	3	0	0	3
2		Professional Elective-VI	PEC	3	0	0	3
Practicals							
3	20EC801L	Project work	EEC	0	0	20	10
			Total	**6**	**0**	**20**	**16**

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

CHAIRMAN
BOS/ECE

Professional Elective Course (PEC)

Semester- V

Elective I

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20EC501PE	Industrial Electronics	PEC	3	0	0	3
2	20EC502PE	Introduction to VLSI Design	PEC	3	0	0	3
3	20EC503PE	Internet of Things	PEC	3	0	0	3
4	20EC504PE	Electronics Measurement and Instrumentation	PEC	3	0	0	3
5	20EC505PE	Nano Electronics	PEC	3	0	0	3
6	20CS201	Python Programming	PEC	3	0	0	3

Semester- VI

Elective II

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20EC601PE	Digital Image Processing Techniques	PEC	3	0	0	3
2	20EC602PE	Wireless Communication	PEC	3	0	0	3
3	20EC603PE	Advanced Microcontroller	PEC	3	0	0	3
4	20EC604PE	Display Devices	PEC	3	0	0	3
5	20IT601	Artificial Intelligence	PEC	3	0	0	3
6	20EC605PE	Computer Architecture and Organization	PEC	3	0	0	3
7	20MA601PE	Quantitative and Reasoning Aptitude	BSC	3	0	0	3

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

CHAIRMAN
BOS/ECE

Semester- VII
Elective III

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20EC701PE	IoT for System Design	PEC	3	0	0	3
2	20EC702PE	Advanced Electronic System Design	PEC	3	0	0	3
3	20EC703PE	Transducer Engineering	PEC	3	0	0	3
4	20EC704PE	Virtual Instrumentation	PEC	3	0	0	3
5	20EC705PE	PCB Design	PEC	3	0	0	3
6	20EC706PE	Introduction to wireless and Cellular Communication	PEC	3	0	0	3

Semester- VII
Elective IV

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20BM705PE	Telehealth Technology	PEC	3	0	0	3
2	20EC707PE	Wireless Networks	PEC	3	0	0	3
3	20EC708PE	Introduction to MEMS and NEMS	PEC	3	0	0	3
4	20EC709PE	Network Security	PEC	3	0	0	3
5	20CS707PE	Introduction to Machine Learning	PEC	3	0	0	3
6	20EC710PE	Sensors and Actuators	PEC	3	0	0	3

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

CHAIRMAN
BOS/ECE

Semester- VIII
Elective V

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20EC801PE	Satellite Communications	PEC	3	0	0	3
2	20EC802PE	High Speed Networks	PEC	3	0	0	3
3	20EC803PE	Avionics	PEC	3	0	0	3
4	20EC804PE	Mixed Signal Design	PEC	3	0	0	3
5	20EC805PE	Speech Signal Processing	PEC	3	0	0	3
6	20CS701PE	Software Testing	PEC	3	0	0	3

Semester- VIII
Elective VI

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20EC806PE	Mobile Adhoc Networks	PEC	3	0	0	3
2	20MG701	Total Quality Management	PEC	3	0	0	3
3	20EC807PE	Radar and Navigational aids	PEC	3	0	0	3
4	20CS704PE	Soft Computing	PEC	3	0	0	3
5	20EC808PE	Electromagnetic Interference and Compatibility	PEC	3	0	0	3
6	20EC809PE	Enclosure Design of Electronics	PEC	3	0	0	3

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

CHAIRMAN
BOS/ECE

Open Elective Course (OEC)

Open Elective I (Semester-VI)

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20BM501OE	Basics of Biomedical Instrumentation	OEC	3	0	0	3
2	20BM502OE	Introduction to Cell Biology	OEC	3	0	0	3
3	20CE501PE	Industrial Waste Management	OEC	3	0	0	3
4	20CE502PE	Air Pollution and Control Engineering	OEC	3	0	0	3
5	20CS506OE	Fundamentals of Software Engineering	OEC	3	0	0	3
6	20CS508OE	Principles of Multimedia	OEC	3	0	0	3
7	20IT501OE	Fundamentals of Operating Systems	OEC	3	0	0	3
8	20IT502OE	Introduction to Database	OEC	3	0	0	3
9	20EE501OE	Non-Conventional Energy Resources	OEC	3	0	0	3
10	20EE502OE	Industrial Automation	OEC	3	0	0	3
11	20ME601OE	Production Technology	OEC	3	0	0	3
12	20ME602OE	Basics of Automotive Components	OEC	3	0	0	3

Open Elective II (Semester- VII)

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20BM701OE	Bioinformatics	OEC	3	0	0	3
2	20BM702OE	Fundamentals of Nutrition	OEC	3	0	0	3
3	20CE701OE	Environmental Impact Assessment	OEC	3	0	0	3
4	20CE702OE	Building Services	OEC	3	0	0	3
5	20CS706OE	E-Commerce	OEC	3	0	0	3
6	20CS 707OE	Fundamentals of Cloud Computing	OEC	3	0	0	3
7	20EE701OE	Energy Storage Systems	OEC	3	0	0	3
8	20EE702OE	Electrical Safety Engineering	OEC	3	0	0	3
9	20ME701OE	Basics of Hydraulic and Pneumatic Systems	OEC	3	0	0	3
10	20ME702OE	Alternative Energy Fuels	OEC	3	0	0	3
11	20IT701OE	Programming in JAVA	OEC	3	0	0	3
12	20IT702OE	Web Design	OEC	3	0	0	3

Head of the Department
Department of Electronics and Communication Engineering
Kongunadu College of Engineering and Technology
Tholurppatti(Po), Thottiyam (Tk)
Trichy (Dt), Pin 621 215

CHAIRMAN
BOS/ECE

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com| Phone: 04326 – 277571
www.kongunadu.ac.in

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

STAKEHOLDER FEEDBACK ON CURRICULUM & TEACHING- LEARNING ANALYSIS

Academic Year 2021-22

The following points were suggested by the stakeholders in feedback on curriculum & teaching-learning:

1. A corecourse may be included in the curriculum to study and encourage the usage of High Voltage Engineering among students.
2. In the Renewable Energy Technology Laboratory course, may be included in Simulation and validate before doing the hardware experiments.
3. Flexible AC Transmission Systems can be included as elective.
4. In the Protection and Switchgear course, MCBs and MCCBs – Rating and selection of Circuit breakers" topic may be included in circuit breakers.
5. BOS Member suggested removal of "20EE703 Control of Electrical Drives" from Professional Elective IV, since most of the topics are covered in the Professional Elective I "20EE501PE Solid State Drives".
6. Mini project is included as mandatory course.
7. Personality development related courses may be included in the curriculum to enhancejob skills.
8. More number of new electives can be added to curriculum.
9. Inplant trainings should be mandatory to understand industrial scenario.
10. Subjects for developing soft skills may be included that will be very helpful for getting job.

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tec
Tholurpatti-621215
Trichy Dt.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com| Phone: 04326 – 277571
www.kongunadu.ac.in

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACTION TAKEN REPORT ON STAKEHOLDER FEEDBACK ON CURRICULUM & TEACHING- LEARNING ANALYSIS

Stakeholders Suggestion	Action Taken
1. A core course may be included in the curriculum to study and encourage the usage of High Voltage Engineering among students.	The suggestions received from stake holders on the curriculum and syllabus feedback was taken up in Department Advisory Committee (DAC) of Department of Electrical and Electronics Engineering. All the suggestions were unanimously accepted by the faculty members and it is decided to incorporate them in the KNCET -UGR2020 regulation. Hence the faculties were to incorporate the requested suggestions in the respective courses and frame the syllabus. This will beimplemented from the academic year 2021-22 under KNCET -UGR2020 curriculum and syllabus of Electrical and Electronics Engineering after getting the approval from member of BOS and academic council.
2. In the Renewable Energy Technology Laboratory course, may be included in Simulation and validate before doing the hardware experiments.	
3. Flexible AC Transmission Systems can be included as elective.	
4. In the Protection and Switchgear course, MCBs and MCCBs – Rating and selection of Circuit breakers topic may be included in circuit breakers.	
5. BOS Member suggested removal of "20EE703 Control of Electrical Drives" from Professional Elective IV, since most of the topics are covered in the Professional Elective I "20EE501PE Solid State Drives".	
6. Mini project is included as mandatory course.	
7. Personality development related courses may be included in the curriculum to enhance job skills.	
8. More number of new electives can be added to curriculum.	
9. Inplant trainings should be mandatory to understand industrial scenario.	
10. Subjects for developing soft skills may be included. That will be very helpful for getting job.	

Head of the Department
Department of EEE,
Kongunadu College of Engg. & Tec
Thottiyam-621215
Trichy Dt

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

NOTE

As per the action taken report dated 03-09-2021, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD
Head of the Department
Department of EEE,
Kongunadu College of Engg & Tech
Tholurpatti-621215
Trichy Dt.

Enclosures:
1. Curriculum (Regulation KNCET -UGR2020) of department of Electrical and Electronics Engineering.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

NOTE

As per the action taken report dated 20-07-2022, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD
Department of EEE,
Kongunadu College of Engg. & Tech
Tholurpatti-621215
Trichy Dt.

Enclosures:
1. Curriculum (Regulation KNCET -UGR2020) of department of Electrical and Electronics Engineering.

Kongunadu College of Engineering and Technology (Autonomous)

Affiliated to Anna University, Chennai
B.E. Electrical and Electronics Engineering
Regulations: KNCET-UGR2020
Choice Based Credit System
I to VIII Semesters Curriculum

Semester I							
S.No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN101	Technical English-I	HSMC	3	0	0	3
2	20MA101	Mathematics-I	BSC	3	1	0	4
3	20PH101	Engineering Physics	BSC	3	0	0	3
4	20CY101	Engineering Chemistry	BSC	3	0	0	3
5	20GE101	Structured Programming Using C	ESC	3	0	0	3
6	20GE102	Engineering Graphics	ESC	2	0	2	3
Practicals							
7	20BS101L	Physics and Chemistry Laboratory	BSC	0	0	2	1
8	20GE103L	Structured Programming Using C Laboratory	ESC	0	0	2	1
9	20EEC101L	English for Effective Communication	EEC	0	0	2	1
			Total	**17**	**1**	**8**	**22**

Semester II							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN201	Technical English-II	HSMC	3	0	0	3
2	20MA201	Mathematics-II	BSC	3	1	0	4
3	20PH201	Applied Physics	BSC	3	0	0	3
4	20BS201	Environmental Science	HSMC	3	0	0	3
5	20CE201	Basic Civil and Mechanical Engineering	ESC	3	0	0	3
6	20EE201	Electric Circuit Analysis	PCC	3	0	0	3
Practicals							
7	20GE201L	Engineering Practices Laboratory	ESC	0	0	2	1
8	20EE202L	Electric Circuits Laboratory	PCC	0	0	2	1
9	20EEC201L	Soft Skills	EEC	0	0	2	1
			Total	**18**	**1**	**6**	**22**

CHAIRMAN
BOS/EEE

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech
Thottiyam-621215
Trichy Dt.

Semester III							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA302	Transforms and Partial Differential Equations	BSC	3	1	0	4
2	20EE301	Analog Electronics	ESC	3	0	0	3
3	20EE302	Electrical Machines-I	PCC	3	0	0	3
4	20EE303	Electromagnetic Fields	PCC	3	0	0	3
5	20MC002	Universal Human Values 2: Understanding Harmony	HSMC	3	0	0	3
6	20CS304	Object Oriented Programming	ESC	3	0	2	4
Practicals							
7	20EE304L	Analog Electronics Laboratory	ESC	0	0	3	1
8	20EE305L	Electrical Machines Laboratory-I	PCC	0	0	3	1
9	20EEC301L	Soft Skills Development	EEC	0	0	2	1
			Total	**18**	**1**	**10**	**23**

Semester IV							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA401	Numerical Methods	BSC	3	1	0	4
2	20EE401	Electrical Machines-II	PCC	3	0	0	3
3	20EE402	Transmission and Distribution	PCC	3	0	0	3
4	20EE403	Measurements and Instrumentation	PCC	3	0	2	4
5	20EC302	Digital Electronics	PCC	3	0	0	3
6	20EC402	Linear Integrated Circuits	PCC	3	0	0	3
7	20MC003	Constitution of India	MC	2	0	0	0
Practicals							
7	20EE404L	Electrical Machines Laboratory-II	PCC	0	0	3	1
8	20EC406L	Linear Integrated Circuits Laboratory	PCC	0	0	3	1
9	20EEC401L	Life Skills and Personality Development	EEC	0	0	2	1
			Total	**20**	**1**	**10**	**23**

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech.
Thottiyam-621215
Trichy Dt.

CHAIRMAN
BOS/EEE

Semester V							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EE501	Power System Analysis	PCC	3	0	0	3
2	20EE502	Control Systems	PCC	3	0	2	4
3	20EE503	Power Electronics	PCC	3	0	0	3
4	20EC502	Microprocessors and Microcontrollers	PCC	3	0	0	3
5		Professional Elective - I	PEC	3	0	0	3
6		Open Elective-I	OEC	3	0	0	3
Practicals							
7	20EE504L	Power Electronics Laboratory	PCC	0	0	3	1
8	20EC505L	Microprocessors and Microcontrollers Laboratory	PCC	0	0	3	1
9	20EE505L	Mini Project-I	EEC	0	0	2	1
10	20EEC501L	Professional Skills Development	EEC	0	0	2	1
			Total	**18**	**0**	**12**	**23**

Semester VI							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EE601	Power System Operation and Control	PCC	3	0	2	4
2	20EE602	Protection and Switchgear	PCC	3	0	0	3
3	20EE603	Renewable Energy Sources	PCC	3	0	0	3
4	20EE604	Discrete Time Signal Processing	PCC	3	0	0	3
5		Professional Elective-II	PEC	3	0	0	3
Practicals							
6	20EE605L	Renewable Energy Technology Laboratory	PCC	0	0	3	1
7	20EE606L	Mini Project-II	EEC	0	0	2	1
8	20EEC601L	Employability Skills	EEC	0	0	2	1
			Total	**15**	**0**	**9**	**19**

CHAIRMAN
BOS/EEE

Head of the Department
Department of EEE
Kalaignarkarunanidhi College of Engg. & Tech
Thuraipatti-621215
Trichy Dt

Semester VII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EE701	Embedded Systems and Industrial Automation	ESC	3	0	0	3
2	20EE703	High Voltage Engineering	PCC	3	0	0	3
3		Professional Elective-III	PEC	3	0	0	3
4		Professional Elective-IV	PEC	3	0	0	3
5		Open Elective-II	OEC	3	0	0	3
Practicals							
6	20EE702L	Embedded Systems and Industrial Automation Laboratory	ESC	0	0	3	1
			Total	**15**	**0**	**3**	**16**

Semester VIII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1		Professional Elective-V	PEC	3	0	0	3
2		Professional Elective-VI	PEC	3	0	0	3
Practicals							
3	20EE801L	Project work	EEC	0	0	20	10
			Total	**6**	**0**	**20**	**16**

Head of the Department,
Department of E.E.E.
Kongunadu College of Engg. & Tech.
Thottiyam-621215
Trichy Dt.

CHAIRMAN
BOS/EEE

Professional Elective Course (PEC)

Semester-V

Elective-I

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20EE501PE	Solid State Drives	PEC	3	0	0	3
2	20EE502PE	Power Quality	PEC	3	0	0	3
3	20EE503PE	Electronic Instrumentation	PEC	3	0	0	3
4	20EE504PE	Design of Electrical Apparatus	PEC	3	0	0	3
5	20CS201	Python Programming	PEC	3	0	0	3
6	20EC307	Communication Engineering	PEC	3	0	0	3

Semester-VI

Elective-II

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20EE601PE	Special Electrical Machines	PEC	3	0	0	3
2	20EE602PE	EHVAC Transmission	PEC	3	0	0	3
3	20EE603PE	Electric Vehicles	PEC	3	0	0	3
4	20EE604PE	Solar Energy Engineering and Technology	PEC	3	0	0	3
5	20CS401	Computer Networks	PEC	3	0	0	3
6	20MA601PE	Quantitative and Reasoning Aptitude	PEC	3	0	0	3

Semester-VII

Elective-III

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20EE701PE	Power System Transients	PEC	3	0	0	3
2	20EE702PE	Industrial Safety Engineering	PEC	3	0	0	3
3	20EC502PE	Introduction to VLSI Design	PEC	3	0	0	3
4	20GE501PE	Intellectual Property Rights	PEC	3	0	0	3
5	20MA701PE	Operations Research	PEC	3	0	0	3
6	20CS302	Computer Architecture	PEC	3	0	0	3

CHAIRMAN
BOS/EEE

Head of the Department,
Department of EEE,
Muthayammal College of Engg. & Tech,
Thalaipatti-621215
Trichy Dt.

Semester-VII
Elective-IV

S. No	Course Code	Course Title	Course Category	No of Hours/Week L	T	P	Credit
1	20EE706PE	Flexible AC Transmission Systems	PEC	3	0	0	3
2	20EE704PE	Biomass Conversion and Biorefinery	PEC	3	0	0	3
3	20MG701	Total Quality Management	PEC	3	0	0	3
4	20ME701	Power Plant Engineering	PEC	3	0	0	3
5	20IT601	Artificial Intelligence	PEC	3	0	0	3
6	20CS402	Data Base Management Systems	PEC	3	0	0	3

Semester-VIII
Elective-V

S. No	Course Code	Course Title	Course Category	No of Hours/Week L	T	P	Credit
1	20EE801PE	Electric Energy Generation, Utilization and Conservation	PEC	3	0	0	3
2	20EE705PE	Static Relays	PEC	3	0	0	3
3	20EE803PE	Design of Photovoltaic Systems	PEC	3	0	0	3
4	20MG501	Principles of Management	PEC	3	0	0	3
5	20GE601	Professional Ethics in Engineering	PEC	3	0	0	3
6	20CS707PE	Introduction to Machine Learning	PEC	3	0	0	3

Semester-VIII
Elective-VI

S. No	Course Code	Course Title	Course Category	No of Hours/Week L	T	P	Credit
1	20EE804PE	Power System Stability	PEC	3	0	0	3
2	20EE805PE	SCADA and DCS	PEC	3	0	0	3
3	20EE806PE	DC Power Transmission Systems	PEC	3	0	0	3
4	20EE807PE	Microcontroller Based System Design	PEC	3	0	0	3
5	20EE808PE	Smart Grid	PEC	3	0	0	3
6	20CS704PE	Soft Computing	PEC	3	0	0	3

CHAIRMAN
BOS/EEE

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech.
Thottiyam-621215
Trichy Dt.

Open Elective Course (OEC)
Semester-V
Open Elective-I

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20BM501OE	Basics of Biomedical Instrumentation	OEC	3	0	0	3
2	20BM502OE	Introduction to Cell Biology	OEC	3	0	0	3
3	20CE501PE	Industrial Waste Management	OEC	3	0	0	3
4	20CE502PE	Air Pollution and Control Engineering	OEC	3	0	0	3
5	20CS506OE	Fundamentals of Software Engineering	OEC	3	0	0	3
6	20CS507OE	Introduction to Data Structures and Algorithms	OEC	3	0	0	3
7	20EC501OE	Sensors and Transducers	OEC	3	0	0	3
8	20EC503PE	Internet of Things	OEC	3	0	0	3
9	20ME601OE	Production Technology	OEC	3	0	0	3
10	20ME602OE	Basics of Automotive components	OEC	3	0	0	3
11	20IT501OE	Fundamentals of Operating Systems	OEC	3	0	0	3
12	20IT502OE	Introduction to Database	OEC	3	0	0	3

Semester-VII
Open Elective-II

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20BM701OE	Bioinformatics	OEC	3	0	0	3
2	20BM702OE	Fundamentals of Nutrition	OEC	3	0	0	3
3	20CE701OE	Environmental Impact Assessment	OEC	3	0	0	3
4	20CE702OE	Building Services	OEC	3	0	0	3
5	20CS706OE	E-Commerce	OEC	3	0	0	3
6	20CS 707OE	Fundamentals of Cloud Computing	OEC	3	0	0	3
7	20EC701OE	Consumer Electronics	OEC	3	0	0	3
8	20EC702OE	RFID and Flexible Sensors	OEC	3	0	0	3
9	20ME701OE	Basics of Hydraulic and Pneumatic Systems	OEC	3	0	0	3
10	20ME702OE	Alternative Energy Fuels	OEC	3	0	0	3
11	20IT701OE	Programming in JAVA	OEC	3	0	0	3
12	20IT702OE	Web Design	OEC	3	0	0	3

Head of the Department,
Department of EEE,
College of Engg. & Tec
Thottiyam-621215
Trichy Dt.

CHAIRMAN
BOS/EEE

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University,Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

KNCET UGR - 2020	KNCET UGR - 2020	% of Changes
VI SEMESTER		
20EE603 RENEWABLE ENERGY SOURCES	**20EE603 RENEWABLE ENERGY SOURCES**	
UNIT I RENEWABLE ENERGY (RE) SOURCES Environmental consequences of fossil fuel use, Importance of renewable sources of energy, Sustainable Design and development, Types of RE sources, Limitations of RE sources, Present Indian and international energy scenario of conventional and RE sources.	**UNIT I INTRODUCTION** Electric energy from conventional sources - Energy reserves, power scenario in India – Types of renewable energy sources - New technologies of energy resources - Distributed energy system and dispersed generation - Hydroelectric project – Impact on renewable generation on environment - Biochemical cycles - Ecological pyramids - Terrestrial ecosystems – Global warming potential - Forest resources and water management in India - Ecological succession - Biodiversity - Population growth.	60%
UNIT II SOLAR PV AND THERMAL SYSTEMS Solar Radiation, Radiation Measurement, Solar Thermal Power Plant, Central Receiver Power Plants - Thermal Energy storage system with PCM - Solar Photovoltaic systems : Basic Principle of SPV conversion – Types of PV Systems- Types of Solar Cells, Photovoltaic cell	**UNIT II SOLAR ENERGY** Solar radiation - Geometry, estimation and measurements - Flat plate collector and concentrating collectors - Solar thermal energy storage - Solar ponds - Solar air heaters - Solar cookers - Solar air conditioning and refrigerators - Solar greenhouse - Solar thermal electric power plant - Photovoltaic effect - Semiconductor	

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech
Tholurpatti-621215
Trichy Dt.

concepts: Cell, module, array, PV Module I-V Characteristics, Efficiency & Quality of the Cell, series and parallel connections, maximum power point tracking, Applications.	material for solar cells – Solar photovoltaic system and its standards - Application of PV system - PV hybrid system.
UNIT III WIND ENERGY Classification of wind turbines and rotors - Terms used in wind energy – Aerodynamics operation of wind turbines - Wind energy extraction and wind characteristics - Variation of wind speed with elevation - Land for wind energy - Design of wind turbine rotor - Horizontal axis wind turbine generator - Modes of wind power generation - Estimation of wind energy potential - Wind resource assessment in India - Grid interfacing of a wind farm and methods of grid connection - Grid system and properties.	**UNIT III WIND ENERGY** Classification of wind turbines and rotors - Terms used in wind energy – Aerodynamics operation of wind turbines - Wind energy extraction and wind characteristics - Variation of wind speed with elevation - Land for wind energy - Design of wind turbine rotor - Horizontal axis wind turbine generator - Modes of wind power generation - Estimation of wind energy potential - Wind resource assessment in India - Grid interfacing of a wind farm and methods of grid connection - Grid system and properties.
UNIT IV GEOTHERMAL AND BIOMASS ENERGY Structure of Earth's interior - Plate tectonic theory - Geothermal sites, earthquakes, field and gradient - Geothermal resources and its power generation - Biomass resources – Biomass conversion technology - Biochemical conversion - Biomass gasification - Biogas and its plant - Energy recovery from urban waste - Power generation from liquid waste – Biomass cogeneration - Biodiesel, Biofuel petrol.	**UNIT IV GEOTHERMAL AND BIOMASS ENERGY** Structure of Earth's interior - Plate tectonic theory - Geothermal sites, earthquakes, field and gradient - Geothermal resources and its power generation - Biomass resources – Biomass conversion technology - Biochemical conversion - Biomass gasification - Biogas and its plant - Energy recovery from urban waste - Power generation from liquid waste – Biomass cogeneration - Biodiesel, Biofuel petrol.

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thottiyam-621215
Trichy Dt.

UNIT V HYDRO ENERGY Basic concepts site selection and types of turbines for small scale hydropower, Run-off River plant, Role of Pumped storage power plants in Power system for the Voltage and Frequency control, Estimation of Power in Small Scale and Pumped Storage Power plants.	**UNIT V OTHER ENERGY SOURCES** Tidal Energy: Tidal characteristics - Tidal energy and its potential estimation – Development of tidal power scheme - Important component of tidal power plant - Tidal power development in India. Wave Energy: Factors affecting the wave energy – Mathematical analysis of wave energy - Principle of wave energy plant - Wave energy conversion machines. Ocean Thermal Energy Conversion (OTEC): Working principle - Closed cycle OTEC system - Thermoelectric OTEC - Application and global development.	
20EE604 DISCRETE TIME SIGNAL PROCESSING **UNIT I INTRODUCTION** Basic elements of a digital signal processing system – Advantages of digital over analog signal processing – Continuous time verses discrete time signals – Sampling of analog signals – Quantization of continuous amplitude signals – Signal representation – Classification of discrete time signal – Operation on signals – Convolution and Correlation of discrete time signals- Introduction on CODEC. **UNIT II DISCRETE TIME SYSTEM** Causal, dynamic, linear, time invariant, stable systems –Frequency analysis of discrete time signals – Fourier series and its properties for discrete time periodic	**20EE604 DISCRETE TIME SIGNAL PROCESSING** **UNIT I INTRODUCTION** Classification of systems: Continuous, discrete, linear, causal, stability, dynamic, recursive, and time variance. Classification of signals: Continuous, discrete, energy and power – Power and energy density. Analog to Digital conversion: Sampling techniques, quantization, quantization error, sampling theorem. **UNIT II DISCRETE TIME SYSTEM ANALYSIS** Z-transform and its properties - Inverse Z-transforms - Difference equation - Analysis of linear time invarient system in Z domain	**60%**

Head of the Department
Department of EEE,
Kongunadu College of Engg. & Tech
Thottiyam-621215
Trichy Dt.

signals - Power density spectrum of periodic signals– Fourier transform and its Properties for discrete time signals.	- Stability analysis, frequency response - Linear and circular convolution.
UNIT III DISCRETE FOURIER TRANSFORM AND COMPUTATION Discrete Fourier Transform - Properties - Computation of DFT using FFT algorithm - Decimation in time algorithm using radix 2 FFT - Decimation in frequency algorithm using radix 2 FFT - IDFT - Computation of IDFT using FFT.	**UNIT III DISCRETE FOURIER TRANSFORM AND COMPUTATION** Discrete Fourier Transform - Properties - Computation of DFT using FFT algorithm - Decimation in time algorithm using radix 2 FFT - Decimation in frequency algorithm using radix 2 FFT - IDFT - Computation of IDFT using FFT.
UNIT IV DESIGN OF DIGITAL FILTERS Structures of IIR filter realization - Direct form-I, direct form-II, parallel and cascade forms - IIR Filters design using impulse invariant method - IIR Filters design using bilinear transformation method - Butterworth filters - Chebyshev filters. FIR design: Linear phase filters - Windowing technique for design of linear phase filters: Rectangular, Hamming and Hanning.	**UNIT IV DESIGN OF DIGITAL FILTERS** Structures of IIR filter realization - Direct form-I, direct form-II, parallel and cascade forms - IIR Filters design using impulse invariant method - IIR Filters design using bilinear transformation method - Butterworth filters - Chebyshev filters. FIR design: Linear phase filters - Windowing technique for design of linear phase filters: Rectangular, Hamming and Hanning.
UNIT V REALIZATION OF DIGITAL FILTERS Realization of FIR filters (Direct Form, Cascade Form, Linear- Phase FIR structures)and IIR filters(Direct Form I, Direct Form II, Cascade and Parallel Form) - Application: Musical sound processing system	**UNIT V DIGITAL SIGNAL PROCESSORS** DSP memory architecture - Architecture and features of TMS320C5X, Instruction set, Addressing modes - Architecture and features of TMS320C54X - DSP applications in biomedical signal processing - Voice processing, RADAR.

Head of the Department,
Department of EEE,
Kalaignarkarunanidhi College of Engg. & Tech
Thuraiyur-621215
Trichy Dt.

20EE601PE SPECIAL ELECTRICAL MACHINES **UNIT I PERMANENT MAGNET SYNCHRONOUS MOTORS** Permanent Magnet Motors - Classifications - PMSM - Principle of operation - EMF and torque equations - Phasor diagram - Locus diagram and torque speed characteristics – Power controllers - Applications: PMSM for Railway vehicles. **UNIT II PERMANENT MAGNET BRUSHLESS DC MOTORS** Fundamentals of Permanent Magnets- Types- Principle of operation- Magnetic circuit analysis- EMF and Torque equations- Power Converter Circuits and their controllers - Characteristics and control- Applications. **UNIT III SWITCHED RELUCTANCE MOTORS** Constructional features –Principle of operation- Torque prediction– Characteristics Steady state performance prediction – Analytical Method – Power controllers – Control of SRM drive- Sensor less operation of SRM – Applications. **UNIT IV STEPPING MOTORS** Constructional features - Principle of operation - Variable reluctance motor - Hybrid motor - Single and multi stack configurations - Theory of torque	**20EE601PE SPECIAL ELECTRICAL MACHINES** **UNIT I PERMANENT MAGNET SYNCHRONOUS MOTORS** Permanent Magnet Motors - Classifications - PMSM - Principle of operation - EMF and torque equations - Phasor diagram - Locus diagram and torque speed characteristics – Power controllers - Applications: PMSM for Railway vehicles. **UNIT II PERMANENT MAGNET BRUSHLESS DC MOTORS** Principle of operation - Types - Comparison between conventional DC and PMBLDC - Commutators - Types - EMF and torque equations - Sensors for rotor position – Power controllers - Motor characteristics and control - Applications. **UNIT III SYNCHRONOUS RELUCTANCE MOTORS** Constructional features - Types: Axial and radial motors - Operating principle – Reluctance torque - Phasor diagram - Characteristics and its controls - Applications: Synchronous reluctance motors for electric ships - Vernier motor - Air gap permeance distribution. **UNIT IV SWITCHED RELUCTANCE MOTORS** Constructional features - Principle of operation - Torque prediction - Inductance profile - Types of power controllers and	**45%**

Head of the department,
Department of EEE,
Kalaignarkarunanidhi College of Engg. & Tech
Thalarpatti-621215
Trichy Dt.

predictions - Linear and non-linear analysis - Characteristics - Drive circuits - Applications: Stepper Motor for robotics - Microprocessor based control. **UNIT V OTHER SPECIAL MACHINES** Constructional features – Principle of operation and Characteristics of Hysteresis motor- Synchronous Reluctance Motor– Linear Induction motor-Repulsion motor-Applications.	converter topologies - Current control schemes – Torque speed characteristics - Hysteresis and PWM - Applications: SRM for electric vehicles. **UNIT V STEPPING MOTORS** Constructional features - Principle of operation - Variable reluctance motor - Hybrid motor - Single and multi stack configurations - Theory of torque predictions - Linear and non-linear analysis - Characteristics - Drive circuits - Applications: Stepper Motor for robotics - Microprocessor based control.	
20EE602PE EHVAC TRANSMISSION **UNIT I INTRODUCTION** Role of EHVAC Transmission - Standard transmission voltages - Estimation at line and ground parameters. Bundle conductors: Properties - Inductance and capacitance of EHV lines - Positive, negative and zero sequence impedance - Line parameters for modes of propagation. **UNIT II ELECTROSTATIC FIELDS** Electrostatic field and voltage gradients - Calculations of electrostatic field of AC lines - Effect of high electrostatic field on biological organisms and human beings - Surface voltage gradients and maximum gradients of actual transmission lines - Voltage gradients on sub conductor. **UNIT III VOLTAGE GRADIENTS OF CONDUCTORS** Electrostatics- Field of Sphere gap-Charge-	**20EE602PE EHVAC TRANSMISSION** **UNIT I INTRODUCTION** Role of EHVAC Transmission - Standard transmission voltages - Estimation at line and ground parameters. Bundle conductors: Properties - Inductance and capacitance of EHV lines - Positive, negative and zero sequence impedance - Line parameters for modes of propagation. **UNIT II ELECTROSTATIC FIELDS** Electrostatic field and voltage gradients - Calculations of electrostatic field of AC lines - Effect of high electrostatic field on biological organisms and human beings - Surface voltage gradients and maximum gradients of actual transmission lines - Voltage gradients on sub conductor. **UNIT III POWER CONTROL** Electrostatic induction in unenergized lines - Measurement of field and voltage	**40%**

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thottiyam-621215
Trichy Dt.

potential relations for multi-conductor lines – surface voltage gradient on conductors – gradient factors and their use – distribution of voltage gradient on sub conductors of bundle - voltage gradients on conductors in the presence of ground wires on towers.	gradients for three phase single and double circuit lines - Unenergized lines. Power frequency voltage control and overvoltage in EHV lines: No load voltage - Charging currents at power frequency- Voltage control - Shunt and series compensation - Static VAR compensation.
UNIT IV CORONA EFFECTS AND RADIO INTERFERENCE Corona in EHV lines - Corona loss formulae - Charge voltage diagram - Attenuation of traveling waves due to Corona - Audio noise due to Corona: Generation, characteristics and limits. Measurements of audio noise radio interference due to Corona - Properties of radio noise - Frequency spectrum of RI fields - Measurements of RI and RIV .	**UNIT IV CORONA EFFECTS AND RADIO INTERFERENCE** Corona in EHV lines - Corona loss formulae - Charge voltage diagram - Attenuation of traveling waves due to Corona - Audio noise due to Corona: Generation, characteristics and limits. Measurements of audio noise radio interference due to Corona - Properties of radio noise - Frequency spectrum of RI fields - Measurements of RI and RIV .
UNIT V OVER VOLTAGES IN EHV SYSTEMS Origin of Over voltages due to lightning and switching surges and their types – Short Circuit current and circuit breaker – Overvoltages caused by interruption of low inductive current – interruption of capacitive currents – Ferro-Resonance Overvoltages – calculation of switching surges – protection of over voltages – single phase equivalent – Distributed parameter line energized by source – Generalized equation for single and three phase systems – Reduction of switching surges on EHV systems.	**UNIT V STEADY STATE AND TRANSIENT LIMITS** Design of EHV lines based on steady state and transient limits - EHV cables and their characteristics - Introduction to six phase transmission - UHV.

P&Prabhakar
Head of the Department
Department of EEE,
Kongunadu College of Engg. & Tec
Thottiyam-621215
Trichy Dt.

20EE603PE ELECTRIC VEHICLES **UNIT I INTRODUCTION TO ELECTRIC VEHICLES** Impact of different transportation technologies on environment and energy supply – Air pollution and global warming - History of hybrid electric, electric and fuel cell vehicles - Vehicle motion and the dynamic equations for the vehicle - Vehicle power plant, transmission characteristics and vehicle performance including braking performance – Fuel economy characteristics of internal combustion engine.	**20EE603PE ELECTRIC VEHICLES** **UNIT I INTRODUCTION TO ELECTRIC VEHICLES** Impact of different transportation technologies on environment and energy supply – Air pollution and global warming - History of hybrid electric, electric and fuel cell vehicles - Vehicle motion and the dynamic equations for the vehicle - Vehicle power plant, transmission characteristics and vehicle performance including braking performance – Fuel economy characteristics of internal combustion engine.	
UNIT II VEHICLE MECHANICS Roadway Fundamentals - Laws of Motion - Vehicle Kinetics - Dynamics of Vehicle Motion - Propulsion Power - Velocity and Acceleration - Propulsion System Design.	**UNIT II HYBRID POWER TRAIN TOPOLOGY AND DYNAMICS** Basic architecture - Analysis of drive trains and power flows - Drive cycle implications and fuel efficiency estimations - Sizing of components for different hybrid drive train topologies - Topologies for electric drive train - Fuel efficiency estimations and wheel to wheel fuel efficiency analysis - Sizing of components for different electric drive train topologies.	**60%**
UNIT III HYBRID ARCHITECTURES Series configurations - Pre-transmission parallel configurations - Pre-transmission combined configurations - Post-transmission parallel configurations - Hydraulic post-transmission hybrid - Flywheel systems - Ultra-capacitor-only vehicles - Electric four wheel drive.	**UNIT III ELECTRIC PROPULSION UNIT** Electric drives used in HEV /EV s, classification and characteristics - Induction motor, permanent magnet motors, switch reluctance motors, their configurations and optimization for EV/HEVs. Induction, Permanent magnetic	

Head of the Department
Department of EEE,
Kongunadu College of Engg. & Tec
Thottiyam-621215
Trichy Dt.

UNIT IV HYBRID POWER PLANT SPECIFICATIONS Grade and cruise targets - Launch and boosting - Braking and energy recuperation - Drive cycle implications - Electric fraction - Usage requirements.	and Switch reluctance motor drives: Control and applications in EV /HEV s - Losses in traction motors, inverters and efficiency maps. **UNIT IV SIZING OF DRIVES** Sizing the power electronics based on Switch Technology - Switching frequency and ripple capacitor design - Selection of energy storage technology - Matching the electric drive and ICE, transmission and gear step selection - Sizing the propulsion motor, torque, constant power speed ratio and machine dimensions.	
UNIT V POWER MANAGEMENT AND ENERGY STORAGE SYSTEMS Energy storage, battery based energy storage and simplified models of battery - Fuel cells, Super capacitor, Flywheels and their modeling for energy storage in HEV /BEV – Energy management strategies and its general architecture - Rule and optimization based energy management strategies (EMS) - Case study of design of a HEV and BEV.	**UNIT V POWER MANAGEMENT AND ENERGY STORAGE SYSTEMS** Energy storage, battery based energy storage and simplified models of battery - Fuel cells, Super capacitor, Flywheels and their modeling for energy storage in HEV /BEV – Energy management strategies and its general architecture - Rule and optimization based energy management strategies (EMS) - Case study of design of a HEV and BEV.	
DESIGN, ESTIMATION AND MAINTENANCE OF ELECTRICAL EQUIPMENT **UNIT I EQUIPMENT SPECIFICATIONS AS BASIS FOR DESIGN** General Specifications–Ambient conditions, Accessories, IS- Item specifications and catalogues– Oil /Dry	**20EE604PE SOLAR ENERGY ENGINEERING AND TECHNOLOGY** **UNIT I INTRODUCTION** Energy Scenarios - Overview of solar energy conversion devices and applications – Physics of propagation of solar radiation from the sun to the earth - Solar radiation and sunshine measuring instruments -	**100%**

Head of the department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thottiyam-621215
Trichy Dt.

type Transformers- HT and LT Switch gears- Circuit Breaker, Isolator, fuse, MCCB, MCB- Motors –duty, mounting, protection, Cooling, Frame size.- Cables– HT/LT, single / Multi core, Power and control cables, ratings, de ratings. **UNIT – II INTRODUCTION TO DESIGN AND ESTIMATION** Starting documents - Plant Motors and component list- Basic Design for Estimation –voltage, Maximum demand at PCC- SLD, OGA, component list of Plant power circuit- Detailing – Arriving at typical distribution for a medium scale Industry and Large scale Industry. **UNIT – III RULES, SAFETY AND MAINTENANCE OF EQUIPMENT** Indian electricity rules 2003- Earthing – types, Control of Earth resistance, Step / Touch potential in switchyards- Protection against -lightning, Static electricity- Installation testing – Protections, Insulation- Maintenance– daily, weekly, monthly and yearly schedules for Transformers, Switch gears and Motors – Testing of safety gadgets. **UNIT – IV ELECTRICAL INSTALLATION FOR RESIDENCES** Residential plan and appliances required- Total load- Wiring diagram and layout- Main Switch and fuse , MCB and RCCB, Main distribution – 1 / 3 phase loads- Sub	Geometry, angles and measurement - Estimation of radiation under different climatic conditions - Estimation of radiation in horizontal and inclined surface. **UNIT II PHOTOVOLTAIC SYSTEM** Fundamentals of PV cells - Semiconductor physics - Performance characterization of PV cells - Photovoltaic modules and arrays - Components of standalone PV system - Design of standalone PV system - Functioning and components of PV system - Design of a grid connected PV system - Performance analysis of a grid connected PV system. **UNIT III FLAT PLATE COLLECTORS** Basics of thermal collectors - Basics of heat transfer - Solar collector losses and loss estimation - Analysis of flat plate collector - Influence of various parameters on the performance of LFPC-Testing and application of LFPC. **UNIT IV SOLAR AIR HEATERS AND CONCENTRA TIC COLLECTOR** Basics and performance analysis of solar air heaters - Testing and application of solar air heaters - Fundamentals of concentrating collectors - Concentrating	

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thottiyam-621215
Trichy Dt.

distribution- Requirements for Appliances- Estimation- Regulations - Neutral wire, Earthing , voltage drops, wire sizes, sizing of cables, location of switch boards. **UNIT – V ELECTRICAL EQUIPMENT FOR INDUSTRY** Major application areas and their Electrical Power Requirements in Cement, Sugar ,Pulp and Paper Industries-Co-generation plants , Iron & Steel Industries- Iron making, Casters and Rolling mills - Textile industries- Typical plant power distribution diagrams and the special considerations	collector technologies and working principle - Concentrating collector. **UNIT V THERMAL ENERGY STORAGE AND APPLICATIONS** Sensible heat, latent heat and thermo chemical energy storage - Solar pond - Solar pond power plant design - Emerging technologies - Solar energy applications m cooking, desalination, refrigeration and electricity generation - Tutorial: COP of VARS and performance analysis of PVT collector.	

Head of the Department
Department of EEE,
Kongunadu College of Engg. & Tech
Thottiyam-621215
Trichy Dt.

KNCET UGR - 2020	KNCET UGR - 2020	% of Changes
MODERN POWER CONVERTERS **UNIT I SWITCHED MODE POWER SUPPLIES (SMPS)** DC Power supplies and Classification; Switched mode dc power supplies - with and without isolation, single and multiple outputs; Closed loop control and Regulation; Design examples on converter and closed loop performance. **UNIT II AC-DC CONVERTERS** Switched mode AC-DC converters. synchronous rectification - single and three phase topologies - switching techniques - high input power factor . reduced input current harmonic distortion. improved efficiency. With and without input-output isolation. performance indices design examples. **UNIT III DC-AC CONVERTERS** Multi-level Inversion - concept, classification of multilevel inverters, Principle of operation, main features and analysis of Diode clamped, Flying capacitor and cascaded multilevel inverters; Modulation schemes. **UNIT IV AC-AC CONVERTERS WITH AND WITHOUT DC LINK** Matrix converters. Basic topology of matrix converter; Commutation – current path; Modulation techniques - scalar modulation, indirect modulation; Matrix converter as only AC-DC converter; AC-AC converter with DC link - topologies	**20EE701PE POWER SYSTEM TRANSIENTS** **UNIT I INTRODUCTION** Review and importance of the study of transients - Causes for transients. RL circuit transient with sine wave excitation - Double frequency transients - Basic transforms of the RLC circuit transients. Different types of power system transients - Effect of transients on power systems - Role of the study of transients in system planning. **UNIT II SWITCHING TRANSIENTS** Over voltages due to switching transients - Resistance switching and the equivalent circuit for interrupting the resistor current - Load switching and equivalent circuit - Waveforms for transient voltage across the load and the switch - Normal and abnormal switching transients. Current suppression - Current chopping - Effective equivalent circuit. Capacitance switching - Effect of source regulation - Capacitance switching with a restrike, with multiple restrikes. **UNIT III LIGHTNING TRANSIENTS** Review of the theories in the formation of clouds and charge formation - Rate of charging of thunder clouds - Mechanism of lightning discharges and characteristics of lightning strokes - Model for lightning stroke - Factors contributing to good line design - Protection using ground wires - Tower footing resistance - Interaction	**100%**

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thoraipatti-621215
Trichy Dt.

and operation - with and without resonance link - converter with DC link converter; Performance comparison with matrix converter with DC link converters. **UNIT V SOFT-SWITCHIING POWER CONVERTERS** Soft switching techniques. ZVS, ZCS, quasi resonance operation; Performance comparison hard switched and soft switched converters.AC-DC converter, DC-DC converter, DC-AC converter; Resonant DC power supplies.	between lightning and power system. **UNIT IV TRAVELLING WAVES ON TRANSMISSION LINE COMPUTATION OF TRANSIENTS** Computation of transients - Transient response of systems with series and shunt lumped parameters and distributed lines. Traveling wave concept - Step response - Bewely's lattice diagram - Standing waves and natural frequencies - Reflection and refraction of travelling waves. **UNIT V TRANSIENTS IN INTEGRATED POWER SYSTEM** The short line and kilometric fault - Distribution of voltages in a power system – Line dropping and load rejection - Voltage transients on closing and reclosing lines - Over voltage induced by faults - Switching surges on integrated system qualitative application of EMTP for transient computation.	

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thoraipatti-621215
Trichy Dt.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

KNCET UGR - 2020	KNCET UGR - 2020	% of Changes
VII SEMESTER		
ADVANCED CONTROL SYSTEM **UNIT I STATE VARIABLE ANALYSIS** Introduction- concepts of state variables and state model-State model for linear continuous time systems, Diagonalisation - solution of state equations- Concepts of controllability and observability. **UNIT II STATE VARIABLE DESIGN** Introduction to state model: Effect of state feedback - Pole placement design: Necessary and sufficient condition for arbitrary pole placement, State regulator design Design of state observers- Separation principle- Design of servo systems: State feedback with integral control.	**20EE702PE INDUSTRIAL SAFETY ENGINEERING** **UNIT I INTRODUCTION** Introduction to Industrial safety Engineering – Key concepts and terminologies – Key concepts and terminologies – Safety domain ontology – Risk assessment and control – Safety Engineering and accident causing mechanisms – Preliminary hazard list and analysis – Hazard and Operability study (HAZOP) – Failure Modes and Effects Analysis (FMEA) – Identification of failure modes – Failure modes and effects analysis – Application of hazard identification techniques – Fault Tree Analysis (FTA) – Construction, gate by gate method, Cut-set method and importance measures – Event Tree Analysis (ETA). **UNIT II SAFETY ASSESSMENT** BOWTIE TOOL – Bow–tie: Common cause cut sets, cut-sets for accident scenarios, Identification of safety barriers – Risk assessment – Consequence assessment – Energy control model and hazard control hierarchy – Safety function deployment – Ranking of design solutions: AHP approach – Quantification of basic events for non-repairable components,	**100%**

Head of the Department
Department of EEE,
Kongunadu College of Engg. & Tech
Thottiyam-621215
Trichy Dt.

UNIT III SAMPLED DATA ANALYSIS

Introduction spectrum analysis of sampling process signal reconstruction difference equations The Z transform function, the inverse Z transform function, response of Linear discrete system, the Z transform analysis of sampled data control systems, response between sampling instants, the Z and S domain relationship. Stability analysis and compensation techniques.

UNIT IV NON LINEAR SYSTEMS

Introduction, common physical nonlinearites, The phase plane method: concepts, singular points,stability of non linear systems, construction of phase trajectories system analysis by phase plane method. The describing function method, stability analysis by describing function method, Jump resonance.

UNIT V OPTIMAL CONTROL

Introduction: Classical control and optimization, formulation of optimal control problem, Typical optimal control performance measures - Optimal state regulator design: Lyapunov equation, Matrix Riccati equation - LQR steady state optimal control – Application examples.

Hazard rate, Exponential distribution and Weibull distribution.

UNIT III SAFETY VS RELIABILITY

Quantification of basic events: Failure to repair process, Combined process, Failure and repair intensities – Computation of combined process parameters: Laplace transform analysis and Markov analysis – Quantification of systems safety and reliability block diagram – Systems safety quantification: Truth table approach, Structure function, Minimal cut and Minimal path representation using structure function – Systems safety quantification: Tutorial.

UNIT IV SAFETY ANALYSIS

Human error, Classification and causes, Identification and human reliability assessment and human error quantification from experts opinions fuzzy set approach – Accident investigation, Accident investigation and analysis: Descriptive analytics, Control chart analysis, Regression and Classification Tree.

UNIT V OSHAS 18001 AND OSHMS

Occupational Health and Safety Management Systems (OH&SMS) and OHSAS 18001 – Safety performance indicators – Energy isolations – Virtual Reality (VR) – Introduction – Geometry of virtual world – VR roadmap a case study.

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thottiyam-621215
Trichy Dt.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

KNCET UGR - 2020	KNCET UGR - 2020	% of Changes
VISUAL LANGUAGES AND APPLICATIONS **UNIT I FUNDAMENTALS OF WINDOWS AND MFC** Messages - Windows programming - SDK style - Hungarian notation and windows data types - SDK programming in perspective. The benefits of C++ and MFC - MFC design philosophy – Document / View architecture - MFC class hierarchy - AFX functions. Application object - Frame window object - Message map. Drawing the lines – Curves – Ellipse – Polygons and other shapes. GDI pens – Brushes - GDI fonts - Deleting GDI objects and deselecting GDI objects. Getting input from the mouse: Client & Non-client – Area mouse messages - Mouse wheel - Cursor. Getting input from the keyboard: Input focus - Keystroke messages - Virtual key codes - Character & dead key messages.	**20EE704PE BIOMASS CONVERSION AND BIOREFINERY** **UNIT I INTRODUCTION TO BIOMASS CONVERSION** Energy and Environment scenario - Need for biomass based industries - Biomass basics - Dedicated energy crops - Oil crops and microalgae - Enhancing biomass properties. Biorefinery: Basic concepts and types – Feed stocks and properties - Economics and LCA.	**100%**
UNIT II RESOURCES AND CONTROLS Creating a menu – Loading and displaying a menu – Responding to menu commands – Command ranges - Updating the items in menu, update ranges – Keyboard accelerators. Creating menus programmatically - Modifying menus programmatically - The system menu -	**UNIT II CONVERSION PROCESSES** Biomass pretreatment: Barriers and types - Dilute acid, alkali, ozone - Hybrid methods. Physical and Thermal conversion processes: Physical processes - Gasification and Pyrolysis - Products. Microbial conversion processes: Types, fundamentals, equipments, applications - Details of various processes -Products -	

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech
Tholurpatti-621215
Trichy Dt

Owner draw menus – Cascading menus - Context menus. The C button class – C list box class – C static class - The font view application – C edit class – C combo box class – C scrollbar class. Model dialog boxes – Modeless dialog boxes.

UNIT III DOCUMENT / VIEW ARCHITECTURE

The in existence function revisited – Document object – View object – Frame window object – Dynamic object creation. SDI document template - Command routing. Synchronizing multiple views of a document – Mid squares application – Supporting multiple document types – Alternatives to MDI. Splitter Windows: Dynamic splitter window – Static splitter windows. Creating & initializing a toolbar - Controlling the toolbar's visibility – Creating & initializing a status bar - Creating custom status bar panes – Status bar support in appwizard. Opening, closing and creating the files - Reading & Writing – C file derivatives – Serialization basics - Writing serializability classes.

UNIT IV FUNDAMENTALS OF VISUAL BASIC

Menu bar – Tool bar – Project explorer – Toolbox – Properties window – Form designer – Form layout – Intermediate window. Designing the user interface: Aligning the controls – Running the application – Visual development and event driven programming. Variabilitys:

Commercial success stories.

UNIT III BIOFUEL

Biodiesel: Diesel from vegetable oils, microalgae and syngas - Transesterification; FT process, catalysts - Biodiesel purification, fuel properties. Biooil and Biochar: Biooil and biochar production, reactors - Factors affecting biooil, biochar production, fuel properties characterization - Biooil upgradation technologies. Bioethanol and Biobutanol: Microorganisms, current industrial ethanol production technology - Cellulose production. SSF and CBP - ABE fermentation path way and kinetics, product recovery technologies.

UNIT IV BIOGAS PRODUCTION

Biohydrogen production, metabolics, microorganisms - Biogas technology, fermenter designs, biogas purification - Methanol production and utilization. Biomass as feedstock for synthetic organic chemicals, lactic acid, polylactic acid, succinic acid, propionic acid, acetic acid and butyric acid - 1,3-propanediol, 2,3-

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thoraipatti-621215
Trichy Dt.

Declaration – Types – Converting variability types – User defined data types - Lifetime of a variability. Constants - Arrays – Types of arrays. Procedures: Subroutines – Functions – Calling procedures. Text box controls – List box & Combo box controls – Scroll bar and slider controls – File controls. **UNIT V DATABASE PROGRAMMING WITH VB** Record sets – Data control – Data control properties, methods. Visual data manager: Specifying indices with the visual data manager – Entering data with the visual data manager. Data bound list control – Data bound combo box – Data bound grid control. Mapping databases: Database object – Tability def object, Query def object. Programming the active database objects – ADO object model – Establishing a connection – Executing SQL statements – Cursor types and locking mechanism – Manipulating the record set object – Simple record editing and updating.	butanediol and PHA. **UNIT V INTEGRATED BIO REFINERY** Concept, lignocellulosic biorefinery - Aquaculture and algal biorefinery, waste biorefinery - Techno--economic evaluation - Life-cycle assessment.	

Head of the department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thoraipatti-621215
Trichy Dt.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

KNCET UGR - 2020	KNCET UGR - 2020	% of Changes
VIII SEMESTER		
20EE705PE STATIC RELAYS **UNIT I STATIC RELAYS** Advantages of static relays - Basic construction of static relays - Level detectors – Replica impedance - Mixing circuits - General equation for two input phase and amplitude comparators - Duality between amplitude and phase comparators - Different types of comparators.	**20EE705PE STATIC RELAYS** **UNIT I STATIC RELAYS** Advantages of static relays - Basic construction of static relays - Level detectors – Replica impedance - Mixing circuits - General equation for two input phase and amplitude comparators - Duality between amplitude and phase comparators - Different types of comparators.	
UNIT II PHASE COMPARATORS Coincidence circuit type- block spike phase comparator, techniques to measure the period of coincidence-Integrating type-Rectifier and Vector product type- Phase comparators. Static Over Current Relays: Instantaneous over-current relay-Time over-current relays: basic principles – definite time and Inverse definite time over-current relays.	**UNIT II STATIC DIRECTIONAL RELAYS AND OVER CURRENT RELAYS** Introduction - Phase and amplitude comparator directional unit - Inputs to static directional relays for maximum output - Polyphase directional relays - Instantaneous over current relays - Time-current relays - Principle, Practical circuits of time over current relays – Commercial static over current relay examples.	60%
UNIT III STATIC DIFFERENTIAL RELAYS AND DISTANCE RELAYS Analysis of Static Differential Relays – Static Relay schemes –Duo bias transformer differential protection – Harmonic restraint relay. Static impedance-reactance – MHO and angle impedance relay - sampling comparator – realization of reactance and MHO relay using sampling comparator.	**UNIT III STATIC DIFFERENTIAL RELAYS AND DISTANCE RELAYS** Introduction - Operating characteristics, Restraining characteristics - Types of differential relays - Analysis of differential relays - Static relay scheme - Requirement of current transformers for differential protection - Distance protection requirements – Relay characteristics - Types of distance relays - Polarized mho	

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech
Thottiyam-621215
Trichy Dt.

	distance relay - Three zone protection.	
UNIT IV POWER SWINGS Effect of power swings on the performance of distance relays – Power swing analysis-Principle of out of step tripping and blocking relays-effect of line and length and source impedance on distance relays.	**UNIT IV MULTI-INPUT COMP ARA TORS AND NON CONVENTIONAL TYPE OF COMPARATORS** Conic section characteristics - Quadrilateral or multilateral characteristics - Poly phase distance scheme - Instantaneous comparators - Eliminating of transient over current in distance relays - Phase sequence detectors.	
UNIT V APPLICATION OF MICROPROCESSOR Number systems - Microprocessors: Architecture, memory, Peripheral - Integrated circuit logic families – Examples of microprocessor devices and applications.	**UNIT V APPLICATION OF MICROPROCESSOR** Number systems - Microprocessors: Architecture, memory, Peripheral - Integrated circuit logic families – Examples of microprocessor devices and applications.	
ENERGY CONSERVATION AND MANAGEMENT **UNIT – I INTRODUCTION** Classification of Energy - Energy Scenario - Energy Needs of Growing Economy - Energy Pricing in India – Energy and Environment - Energy Conservation Act . Energy Audit: Types and Methodology - Energy Audit Instruments - Role of energy managers and auditors - Introduction to Fuels - Properties of fuels - Proximate and Ultimate Analysis.	**20EE803PE DESIGN OF PHOTOVOLTAIC SYSTEMS** **UNIT I PVCELL** Historical perspective - PV cell characteristics and equivalent circuit - Model of PV cell - Short circuit, Open circuit and peak power parameters - Datasheet study - Cell efficiency - Effect of temperature - Temperature effect calculation example - Fill factor - PV cell simulation - Identical and non-identical cells in series and parallel - Load line – Protecting cells in series and parallel - Simulation of cells in series and parallel – Interconnecting modules - PV source emulation.	**100%**

Head of the Department,
Department of EEE,
Kanyakumari College of Engg. & Tec
Thoothoor-629175
Trichy Dt.

UNIT – II THERMAL UTILITIES

Steam – Introduction, Properties of steam, Steam distribution systems - Boilers- Types and Classification- Performance Evaluation of Boilers – Boiler Efficiency- Direct and Indirect methods – Energy Conservation opportunities in boilers- Principle of cogeneration – Technical options for cogeneration- Waste heat recovery - Classification and benefits.

UNIT – III ELECTRICAL AND LIGHTING SYSTEM

Introduction to Electric Power Supply Systems - Electricity Billing – Electrical Load Management and Maximum Demand Control- Power factor improvement and its benefit - Factors involved in determination of motor efficiency- Energy efficient motors- Basic Parameters and Terms in Lighting systems, Luminous performance Characteristics of commonly used luminaries and Energy saving opportunities in lighting systems.

UNIT – IV FANS, BLOWERS AND PUMPS

Fan Types - Blower Types- Fan

UNIT II ENERGY ESTIMATION

Introduction - Insolation and irradiance - Insolation variation with time of day – Earth centric viewpoint and declination - Solar geometry - Insolation and energy on a horizontal flat plate - Sunrise and sunset hour angles, Examples - Energy on a tilted flat plate – Energy plots in octave - Atmospheric effects - Airmass - Energy with atmospheric effects - Clearness index and energy scripts in Octave.

UNIT III SIZING AND MPPT

Sizing PV for applications without batteries - Sizing PV examples. Battery: Introduction - Capacity - C-rate - Efficiency - Energy and power densities - Comparison - Selection and Other energy storage methods. PV system design - Load Profile - Days of autonomy and recharge - Battery size - PV array size - Design toolbox in octave - MPPT concept – Input impedance of DC-DC converters: Buck-Boost converter - PV module in SPICE - Simulation - PV and DC-DC interface Impedance control methods: Reference cell, Voltage scaling, Current scaling, Sampling, Power slope and Hill climbing method. Practical points: Housekeeping power supply, Gate driver and MPPT for non-resistive loads.

UNIT IV BATTERY INTERFACES

Simulation: MPPT, Direct PV - Battery connection - Charge controller - Battery

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech
Thottiyam-621215
Trichy Dt.

Performance evaluation- Fan Laws- Flow control strategies- Pumps- Types – Factors affecting pump performance- System characteristics- Efficient Pumping system operation- Flow Control Strategies- Energy conservation opportunities in pumping systems. **UNIT – V FINANCIAL MANAGEMENT** Investment-need, Appraisal and criteria, Financial analysis techniques-Simple payback period, Return on investment, Net present value, Internal rate of return, Cash flows, Risk and sensitivity analysis; Financing options, Energy performance contracting and role of ESCOs.	charger - Understanding current control - Slope compensation - Simulation of current control - Batteries in series and parallel - Charge equalization. Peltier device: Principle, Peltier element, datasheet and cooling. Thermal aspects: Conduction, Convection, A peltier refrigeration example - Radiation and mass transport - Demo of Peltier cooling – Water pumping principle - Hydraulic energy and power - Total dynamic head. **UNIT V PV APPLICATION AND GRID INTERFACE** Numerical solution - Colebrook formula - Octave script for head calculation - PV and water pumping examples - Octave script for hydraulic power -Centrifugal pump – Reciprocating pump - PV power - Pumped hydro application - Grid connection principle - PV to grid topologies. Three phase d-q controlled grid connection: Introduction - d-q axis theory – AC to DC transformations - DC to AC transformations - Single phase d--q controlled grid connection -Three phase PV- Grid interface example - SVPWM- Discrete implementation. SVPWM - Analog implementation - Application of integrated magnetics - Life Cycle Costing growth models and examples, Annual payment and present worth factor - Life cycle costing LCC with examples.

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech
Thottiyam-621215
Trichy Dt.

EI8075 FIBRE OPTICS AND LASER INSTRUMENTS	**20EE805PE SCADA AND DCS**	
UNIT I OPTICAL FIBRES AND THEIR PROPERTIES Construction of optical fiber cable: Guiding mechanism in optical fiber and Basic component of optical fiber communication. –Principles of light propagation through a fibre: Total internal reflection, Acceptance angle (θa), Numerical aperture and Skew mode, – Different types of fibres and their properties: Single and multimode fibers and Step index and graded index fibers	**UNIT I SCADA INTRODUCTION** Purpose of a SCADA system - Elements of a SCADA system - SCADA layout – Analog signals measurement and control - Discrete signals measurement and control – Development from telemetry.	
UNIT II INDUSTRIAL APPLICATION OF OPTICAL FIBRES Fibre optic sensors: Types of fiber optics sensor, Intrinsic sensor- Temperature/ Pressure sensor, Extrinsic sensors, Phase Modulated Fibre Optic Sensor and Displacement sensor (Extrinsic Sensor) – Fibre optic instrumentation system: Measurement of attenuation (by cut back method), Optical domain reflectometers, Fiber Scattering loss Measurement, Fiber Absorption Measurement, Fiber dispersion measurements, End reflection method and Near field scanning techniques	**UNIT II RTUs and MTUs** Purpose of RTU and MTU - Communication interface - Protocol details - Different control methods - Monitor discrete pulse and serial signals - Non RTU functions - RTU hardware choice - MTU: Communication interface - Configuring a picture of the process.	**100%**
UNIT III LASER FUNDAMENTALS Fundamental characteristics of lasers – Level Lasers: Two-Level Laser, Three Level Laser, Quasi Three and four level lasers – Properties of laser:	**UNIT III SCADA OPERATOR INTERFACE** Operator interface on very small system, mid-sized system and large systems - Local security - Monitor status points -	

Head of the Department,
Department of EEE,
Kanyakumari College of Engg. & Tech
Thuckalay-629175
Tamil Nadu

Monochromaticity, Coherence, Divergence and Directionality and Brightness –Laser modes – Resonator configuration – Q-switching and mode locking – Cavity damping. **UNIT IV INDUSTRIAL APPLICATION OF LASERS** Laser for measurement of distance, Laser for measurement of length, Laser for measurement of velocity, Laser for measurement of acceleration, Laser for measurement of current, voltage and Laser for measurement of Atmospheric Effect: Types of LIDAR, Construction And Working, and LIDAR Applications – Material processing: Laser instrumentation for material processing, Powder Feeder, Laser Heating, Laser Welding, Laser Melting, Conduction Limited Melting and Key Hole Melting **UNIT V HOLOGRAM AND MEDICAL APPLICATIONS** Holography: Basic Principle, Holography vs. photography, Principle Of Hologram Recording, Condition For Recording A Hologram, Reconstructing and viewing the holographic image – Holography for non-destructive testing – Holographic components – Medical applications of lasers, laser-Tissue Interactions Photochemical reactions, Thermalisation, collisional relaxation, Types of Interactions and Selecting an Interaction	Monitoring alarms - Totalized values and trending - Control interfacing - Reports - Parallel operator interface. **UNIT IV DISTRIBUTED CONTROL SYSTEMS** Evolution of Distributed Control Systems (DCS) - Emergence of the DCS architecture. Local control unit architecture: Basic elements of a microprocessor based controller Functional blocks: An introduction - Local control unit languages - Functional blocks - Local control unit process interfacing issues - Security design issues for the local control unit: Redundant controller designs. **UNIT V DCS OPERATORINTERFACE** Operator interfaces: Introduction - Low level operator interface - High level operator interface: Architectural alternatives, Hardware elements in the operator interface, Operator displays - Engineering interface requirements.	

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech.
Tholurpatti-621215
Trichy Dt.

KNCET UGR - 2020	KNCET UGR - 2020	% of Changes
PULSE WIDTH MODULATION TECHNIQUES **UNIT I OVERVIEW OF PWM TECHNIQUES** Concept of PWM - Classification of PWM - Sinusoidal PWM, modified sinusoidal PWM - multiple PWM – Introduction to space vector Modulations - Voltage and harmonic control- Direct modulation. **UNIT II ANALYSIS OF PWM** Evaluation of PWM Schemes - Double Fourier Integral Analysis of a Two Level PWM waveform - Naturally Sampled PWM - PWM Analysis by Duty Cycle Variation - Regular Sampled PWM. **UNIT III OVER AND PROGRAMMED MODULATION STRATEGIES** Region – naturally sampled Over modulation of one phase leg of an inverter – PWM Control gain during Over modulation - Integer versus non integer frequency ratios- Review of PWM variations –Harmonic elimination using PWM –Performance index for optimality –	**20EE806PE DC POWER TRANSMISSION SYSTEMS** **UNIT I INTRODUCTION** Introduction – Historical developments – Power semiconductor devices – General converter configuration. Choice of converter configuration: Valve and transformer utilization factor –Converter configuration for pulse number equal to 6 – Analysis of 6 pulse LCC neglecting inductance – Jumps in voltage across a valve, Average DC side voltage. **UNIT II ANALYSIS OF 6 PULSE CONVERTERS** Fourier series – Analysis of 6 pulse LCC neglecting inductance: DC side voltage harmonics, Fundamental and harmonic components of AC side current – Delay angle – Angle of advance – Commutation margin angle – Commutation margin angle in a 6 pulse LCC neglecting inductance. Instantaneous and average power on AC and DC sides in a 6 pulse LCC neglecting inductance. **UNIT III MODES OF CONDUCTION IN 6 PULSE CONVERTERS** 6 pulse LCC with inductance,2 and 3 valve conduction mode of 6 pulse LCC, DC side voltage harmonics, DC side voltage and voltage across a valve, fundamental and harmonic components of AC side current. Extinction angle – Commutation margin	**100%**

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech
Thottiyam-621215
Trichy Dt.

optimum PWM – Minimum loss PWM.	angle for normal inverter operation of 6 pulse LCC – 3 and 4 valve conduction mode of 6 pulse LCC – Analysis of 3 and 4 valve conduction mode of 6 pulse LCC – 3 valve conduction mode of 6 pulse LCC – Commutation margin angle – Normalization – Characteristics of 6 pulse LCC – Steady state analysis of a general LCC: Application to 6 pulse LCC – 6 pulse LCC with resistance included on the AC side – 6 pulse LCC with resistance, inductance and voltage source on the DC side.
UNIT IV MODULATION OF SINGLE PHASE AND THREE PHASE VSI Single Phase Topology – Three Level Modulation of Single Phase Inverter - Analytic Calculation of Harmonic Losses- Side band Modulation-Switched Pulse Position and Pulse Sequence – Topology of a Three Phase VSI-Three Phase Modulation with Sinusoidal References - Third harmonics reference injection.	**UNIT IV HVDC 12 PULSE CONVERTERS** Power factor – Capacitor commutated converter – 12 pulse LCC – Modes of operation of 12 pulse LCC – Purposes of transformer – Applications of DC transmission – Types of DC link: Bipolar and homopolar – DC link control – Control variables – Considerations that influence selection of control.
UNIT V SPACE VECTOR MODULATION Space Vector Modulation - types -Phase Leg References for SVM-Naturally Sampled SVM-Analytical Solution for SVM Harmonic Losses for SVM-Placement of the Zero Space Vector-Discontinuous Modulation- SVM for multilevel inverters- discontinuous modulation in multilevel inverters.	**UNIT V MTDC AND HARMONICS REDUCTION** Converter control characteristics – MTDC systems: Types and applications – Non–characteristic harmonics – Effect of firing angle errors – Problems with harmonics – Single tuned filter – Design of single tuned filter – Double tuned and damped filters – Reactive power requirement – Comparison of AC and DC transmission.

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tec
Thottiyam-621215
Trichy Dt.

KNCET UGR - 2020	KNCET UGR - 2020	% of Changes
VIII SEMESTER		
20EE807PE MICROCONTROLLER BASED SYSTEM DESIGN **UNIT I INTRODUCTION TO PIC MICROCONTROLLER** Introduction to PIC Microcontroller - PIC I 6C6x and PIC I 6C7x architecture – PIC development tools - PIC I 6cxx pipelining - Program memory considerations - Register file structure - CPU registers.	**20EE807PE MICROCONTROLLER BASED SYSTEM DESIGN** **UNIT I INTRODUCTION TOPIC MICROCONTROLLER** Introduction to PIC Microcontroller - PIC I 6C6x and PIC I 6C7x architecture – PIC development tools - PIC I 6cxx pipelining - Program memory considerations - Register file structure - CPU registers.	
UNIT II INTERRUPTS AND TIMER PIC micro controller Interrupts- External Interrupts-Interrupt Programming–Loop time subroutine Timers-Timer Programming – Front panel I/O-Soft Keys– State machines and key switches– Display of Constant and Variability strings.	**UNIT II PIC PROGRAMMING AND TIMERS** Instruction set - Addressing modes - Simple Operations - Either or sequence, decrement a 16 bit counter and test a 16 bit variable for zero, LED blink subroutine code - Code structure for large programs - Timer0, Timerl, Timer2 and programming.	60%
UNIT III PERIPHERALS AND INTERFACING I^2C Bus for Peripherals Chip Access - Bus operation - Bus subroutines - Temperature sensor Interfacing- Serial EEPROM - Analog to Digital Converter- UART-Baud rate selection - Data handling circuit - Initialization and UART use - LCD and keyboard interfacing - Parallel slave port interface.	**UNIT III PIC INTERRUPTS** PIC micro controller interrupts - Interrupt constrains - Improved interrupt servicing – Loop time subroutine - External interrupts - Front panel I/O - Soft keys - State machines and key switches - Display plus RPG use - Display of constant and variable strings.	
UNIT IV INTRODUCTION TO ARM PROCESSOR Architecture –ARM programmer's model	**UNIT IV PERIPHERALS AND INTERFACING** I^2C Bus for Peripherals Chip Access - Bus	

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech
Tholurpatti-621215
Trichy Dt

–ARM Development tools- Memory Hierarchy – ARM Assembly Language Programming–Simple Examples– Architectural Support for Operating systems.	operation - Bus subroutines - Temperature sensor Interfacing- Serial EEPROM - Analog to Digital Converter- UART-Baud rate selection - Data handling circuit - Initialization and UART use - LCD and keyboard interfacing - Parallel slave port interface.	
UNIT V ARM ORGANIZATION ARM Organization–ARM Instruction Execution- ARM Implementation– ARM Instruction Set– ARM coprocessor interface– Architectural support for High Level Languages – Embedded ARM Applications.	**UNIT V ARM PROCESSOR AND ARM ORGANIZATION** ARM Architecture - ARM programmer's model - ARM development tools – Memory hierarchy- Memory management - ARM addressing modes -ARM instruction set- Simple examples - 3-stage and 5-stage pipeline ARM organization.	

Head of the Department,
Department of EEE,
Kongunadu College of Engg. & Tech.
Tholurpatti-621215
Trichy Dt.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

DEPARTMENT OF INFORMATION TECHNOLOGY

Stakeholder Feedback on Curriculum & Teaching – Learning Analysis

Academic Year 2021- 2022

The following points were suggested by the stakeholder in feedback on Curriculum & Teaching – Learning:

1. Core and Professional Elective subjects and specific topics that satisfy the needs of Industrial requirements can be added in the curriculum.
2. Educate the students about the importance of user friendly environment through curriculum.
3. Suggested to include a course on Data Science in Professional elective.
4. Give exposure to students on digital payment and online marketing in the curriculum.
5. Suggested to include NPTEL equivalent courses in the curriculum for the betterment of students.
6. Mini projects can be included in curriculum to improve the creativity, ethics, team co-ordination and working skills of students.
7. Carrier development courses related to employability and entrepreneurship skills can be included in the curriculum.
8. Advanced technologies enhancing student's ability to satisfy recent trends can be included.
9. Suggested to give awareness on Cyber Security by conducting value added courses to the benefits of students.
10. Elective subjects related to Institute and Industrial Practices may be added.

HOD

Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Action Taken Report on Stakeholder Feedback on Curriculum & Teaching – Learning Analysis

Stakeholder Suggestions	Action Taken
Core and Professional Elective subjects and specific topics that satisfy the needs of Industrial requirements can be added in the curriculum. Educate the students about the importance of user friendly environment through curriculum. Suggested to include a course on Data Science in Professional elective. Give exposure to students on digital payment and online marketing in the curriculum. Suggested to include NPTEL equivalent courses in the curriculum for the betterment of students. Mini projects can be included in curriculum to improve the creativity, ethics, team co-ordination and working skills of students. Carrier development courses related to employability and entrepreneurship skills can be included in the curriculum. Advanced technologies enhancing student's ability to satisfy recent trends can be included. Suggested to give awareness on Cyber Security by conducting value added courses to the benefits of students. Elective subjects related to Institute and Industrial Practices may be added.	The suggestions are received from stakeholders on the curriculum and syllabus feedbacks were taken up by the Department of Information Technology. All the suggestions were unanimously accepted by the faculty members and it was decided to incorporate them in the KNCET- UGR2020 Regulation. This will be implemented in the academic year 2021-2022 under KNCET – UGR2020 for the students of Information Technology after receiving the approval from the Board of Studies and Academic Council.

Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

NOTE

As per the action taken report dated 12-11-2021, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD
Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Enclosures:
1. Curriculum (Regulation KNCET -UGR2020) of department of Information Technology.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk, Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

NOTE

As per the action taken report dated 22-07-2022, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD
Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Enclosures:
1. Curriculum (Regulation KNCET -UGR2020) of department of Information Technology.

Kongunadu College of Engineering and Technology
(Autonomous)
B.Tech. Information Technology
Regulations: KNCET-UGR2020
Choice Based Credit System
I to VIII Semesters Curriculum

Semester I							
S.No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1.	20EN101	Technical English I	HSMC	3	0	0	3
2.	20MA101	Mathematics-I	BSC	3	1	0	4
3.	20PH101	Engineering Physics	BSC	3	0	0	3
4.	20CY101	Engineering Chemistry	BSC	3	0	0	3
5.	20GE101	Structured Programming Using C	ESC	3	0	0	3
6.	20GE102	Engineering Graphics	ESC	2	0	2	3
Practical							
7.	20BS101L	Physics and Chemistry Laboratory	BSC	0	0	2	1
8.	20GE103L	Structured Programming Using C Laboratory	ESC	0	0	2	1
9.	20EEC101L	English for Effective Communication	EEC	0	0	2	1
			Total	**17**	**1**	**8**	**22**

Semester II							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1.	20EN201	Technical English II	HSMC	3	0	0	3
2.	20MA201	Mathematics-II	BSC	3	1	0	4
3.	20PH201	Applied Physics	BSC	3	0	0	3
4.	20BS201	Environmental Science	HSMC	3	0	0	3
5.	20BE203	Basic Electrical, Electronics and Measurement Engineering	ESC	3	0	0	3
6.	20CS201	Python Programming	PCC	3	0	0	3
Practical							
7.	20GE201L	Engineering Practices Laboratory	ESC	0	0	2	1
8.	20CS202L	Python Programming Laboratory	PCC	0	0	2	1
9.	20EEC201L	Soft Skills	EEC	0	0	2	1
			Total	**18**	**1**	**6**	**22**

Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Semester III							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1.	20MA301	Discrete Mathematics	BSC	3	1	0	4
2.	20CS301	Data Structures	PCC	3	0	0	3
3.	20IT301	Java Programming	PCC	3	0	2	4
4.	20EC304	Digital Principles and System Design	ESC	3	0	0	3
5.	20EC305	Analog and Digital Communication	ESC	3	0	0	3
Practical							
6.	20CS303L	Data Structures Laboratory	PCC	0	0	2	1
7.	20EC309L	Digital Laboratory	ESC	0	0	3	1
8.	20EEC301L	Soft Skills Development	EEC	0	0	2	1
			Total	**15**	**1**	**9**	**20**

Semester IV							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1.	20MA404	Probability and Statistics	BSC	3	1	0	4
2.	20CS302	Computer Architecture	PCC	3	0	0	3
3.	20CS402	Database Management Systems	PCC	3	0	0	3
4.	20CS403	Design and Analysis of Algorithms	PCC	3	0	0	3
5.	20IT401	Operating Systems	PCC	3	0	0	3
6.	20IT402	Software Engineering	PCC	3	0	0	3
7.	20MC003	Constitution of India	HSMC	2	0	0	0
Practical							
8.	20CS404L	Database Management Systems Laboratory	PCC	0	0	2	1
9.	20IT403L	Operating Systems Laboratory	PCC	0	0	2	1
10.	20EEC401L	Life Skills and Personality Development	EEC	0	0	2	1
			Total	**20**	**1**	**6**	**22**

Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Semester V							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1.	20CS401	Computer Networks	PCC	3	0	0	3
2.	20IT501	Data Warehousing And Data Mining	PCC	3	0	0	3
3.	20IT502	Web Technology	PCC	3	0	2	4
4.	20EC502	Microprocessors and Microcontrollers	PCC	3	0	0	3
5.	20MG501	Principles of Management	HSMC	3	0	0	3
6.		Professional Elective-I	PEC	3	0	0	3
Practical							
7.	20CS405L	Computer Networks Laboratory	PCC	0	0	2	1
8.	20IT503L	Mini Project-I	EEC	0	0	2	1
9.	20EC505L	Microprocessors and Microcontrollers Laboratory	PCC	0	0	3	1
10.	20EEC501L	Professional Skills Development	EEC	0	0	2	1
			Total	**18**	**0**	**11**	**23**

Semester VI							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1.	20CS501	Mobile Computing	PCC	3	0	0	3
2.	20CS601	Big Data Analytics	PCC	3	0	0	3
3.	20MC002	Universal Human Values 2: Understanding Harmony	HSMC	2	1	0	3
4.		Professional Elective-II	PEC	3	0	0	3
5.		Open Elective-I	OEC	3	0	0	3
Practical							
6.	20CS603L	Data Analytics Laboratory	PCC	0	0	2	1
7.	20IT602L	Mobile Application Development Laboratory	PCC	0	0	2	1
8.	20IT603L	Mini Project-II	EEC	0	0	2	1
9.	20EEC601	Employability Skills	EEC	0	0	2	1
			Total	**14**	**1**	**8**	**19**

Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Semester VII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1.	20CS701	Cloud Computing	PCC	3	0	0	3
2.	20IT701	Cryptography and Network Security	PCC	3	0	0	3
3.	20EEC701	Project Based Experiential Learning	EEC	0	0	6	3
4.		Professional Elective-III	PEC	3	0	0	3
5.		Professional Elective-IV	PEC	3	0	0	3
6.		Open Elective-II	OEC	3	0	0	3
Practical							
7.	20CS702L	Cloud Computing Laboratory	PCC	0	0	2	1
8.	20IT702L	Security Laboratory	PCC	0	0	2	1
			Total	**15**	**0**	**10**	**20**

Semester VIII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1.		Professional Elective V	PEC	3	0	0	3
2.		Professional Elective VI	PEC	3	0	0	3
Practical							
3.	20IT801L	Project work	EEC	0	0	20	10
			Total	**6**	**0**	**20**	**16**

Total no. of credits: 164

Head of the Department
Dept. of Information Technology
Kongunadu College of Engineering and Technology,
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Professional Elective Course (PEC)

Semester V
Professional Elective I

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1.	20CS502	Theory of Computation	PEC	3	0	0	3
2.	20IT501PE	Principles of Object Oriented Analysis and Design	PEC	3	0	0	3
3.	20IT502PE	Unix Internals	PEC	3	0	0	3
4.	20IT601	Artificial Intelligence	PEC	3	0	0	3
5.	20EC506PE	Principles of Digital Signal Processing	PEC	3	0	0	3
6.	20GE501PE	Intellectual Property Rights	PEC	3	0	0	3
7.	20MA501PE	Algebra and Number Theory	PEC	3	0	0	3

Semester VI
Professional Elective II

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1.	20CS502PE	Multicore Architecture	PEC	3	0	0	3
2.	20CS503PE	Distributed Systems	PEC	3	0	0	3
3.	20CS701PE	Software Testing	PEC	3	0	0	3
4.	20CS706PE	C# and .NET Framework	PEC	3	0	0	3
5.	20IT601PE	Mobile Application Development	PEC	3	0	0	3
6.	20IT602PE	Digital Asset Management	PEC	3	0	0	3
7.	20IT603PE	Principles of Compiler Design	PEC	3	0	0	3
8.	20MA601PE	Quantitative and Reasoning Aptitude	PEC	3	0	0	3

Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Semester VII
Professional Elective III

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1.	20EC503OE	Introduction to Internet of Things	PEC	3	0	0	3
2.	20EC806PE	Mobile Adhoc Networks	PEC	3	0	0	3
3.	20IT701PE	Computer Graphics and Multimedia	PEC	3	0	0	3
4.	20IT702PE	Social Network Analysis	PEC	3	0	0	3
5.	20IT703PE	Service Oriented Architecture	PEC	3	0	0	3
6.	20IT704PE	Artificial Intelligence and Robotics	PEC	3	0	0	3
7.	20MG701	Total Quality Management	PEC	3	0	0	3

Semester VII
Professional Elective IV

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1.	20CS704PE	Soft Computing	PEC	3	0	0	3
2.	20CS705PE	Information Retrieval Techniques					
3.	20CS707PE	Introduction to Machine Learning	PEC	3	0	0	3
4.	20CS801PE	Software Project Management	PEC	3	0	0	3
5.	20IT705PE	Advanced Python Programming	PEC	3	0	0	3
6.	20IT706PE	User Interface Design	PEC	3	0	0	3
7.	20IT707PE	Human Computer Interaction	PEC	3	0	0	3

Head of the Depart
Dept. of Information Technology
Kongunadu College of Engineering and Technology
Thiaurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Semester VIII
Professional Elective V

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1.	20CS802PE	Software Quality Assurance	PEC	3	0	0	3
2.	20CS804PE	Deep Learning	PEC	3	0	0	3
3.	20CS806PE	Information Security	PEC	3	0	0	3
4.	20IT801PE	Data science with Python	PEC	3	0	0	3
5.	20IT802PE	Principles of Electronic Commerce	PEC	3	0	0	3
6.	20IT803PE	Virtual Reality and Game Development	PEC	3	0	0	3
7.	20IT804PE	Ethical Hacking	PEC	3	0	0	3

Semester VIII
Professional Elective VI

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1.	20CS803PE	Parallel Computing Architecture	PEC	3	0	0	3
2.	20CS805PE	Cyber Forensics	PEC	3	0	0	3
3.	20IT805PE	Introduction to Blockchain Technology	PEC	3	0	0	3
4.	20IT806PE	Natural Language Processing	PEC	3	0	0	3
5.	20IT807PE	Software Defined Networks	PEC	3	0	0	3
6.	20IT808PE	Enterprise Application Development	PEC	3	0	0	3
7.	20GE601	Professional Ethics in Engineering	PEC	3	0	0	3

Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology
Thalurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Open Elective Course (OEC)
Semester VI
Open Elective I

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1.	20BM501OE	Basics of Biomedical Instrumentation	OE	3	0	0	3
2.	20BM502OE	Introduction to Cell Biology	OE	3	0	0	3
3.	20CE501PE	Industrial Waste Management	OE	3	0	0	3
4.	20CE502PE	Air Pollution and Control Engineering	OE	3	0	0	3
5.	20CE602OE	Smart Materials and Smart Structures	OE	3	0	0	3
6.	20EC501OE	Sensors and Transducers	OE	3	0	0	3
7.	20EC603OE	Automotive Electronics	OE	3	0	0	3
8.	20EE501OE	Non-Conventional Energy Resources	OE	3	0	0	3
9.	20EE502OE	Industrial Automation	OE	3	0	0	3
10.	20EE503OE	Energy Management and Auditing	OE	3	0	0	3
11.	20ME601OE	Production Technology	OE	3	0	0	3
12.	20ME602OE	Basics of Automotive Components	OE	3	0	0	3

Open Elective Course (OEC)
Semester VII
Open Elective I

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1.	20BM701OE	Basics of Bioinformatics	OE	3	0	0	3
2.	20BM702OE	Fundamentals of Nutrition	OE	3	0	0	3
3.	20CE701PE	Environmental Impact Assessment	OE	3	0	0	3
4.	20CE702PE	Building Services	OE	3	0	0	3
5.	20EC701OE	Consumer Electronics	OE	3	0	0	3
6.	20EC702OE	RFID and Flexible Sensors	OE	3	0	0	3
7.	20EE701PE	Energy Storage Systems	OE	3	0	0	3
8.	20EE702OE	Electrical Safety Engineering	OE	3	0	0	3
9.	20ME701OE	Basics of Hydraulic and Pneumatic Systems	OE	3	0	0	3
10.	20ME702OE	Alternative Energy Fuels	OE	3	0	0	3

Head of the Department,
Dept. of Information Technology,
Kongunadu College of Engineering and Technology,
Tholurpatti (Po) Thottiam (Tk),
Tiruchirappalli (Dt) - 621 215.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Department of Mechanical Engineering

Stakeholder Feedback on Curriculum & Teaching – Learning Analysis

Academic Year 2021-2022

The following points were suggested by the stakeholder in feedback on Curriculum & Teaching – Learning:

1. Include the topics of various safety measures in Power plant Engineering course.
2. Need to provide NPTEL course syllabus as equivalent subject to upgrade students learning skills.
3. Suggested to add electrical and hybrid vehicle topics in the syllabus.
4. Include recent emission norms in automobile engineering course syllabus.
5. For better placement, include soft skill courses in the curriculum.
6. Suggested to add advanced testing methods in NDT course.
7. Suggested to include the AI topics in relevant courses.
8. Include more projects in the curriculum related to design and fabrication.
9. Add recent advancements in elective subjects to upgrade students' knowledge.

HoD

HEAD OF THE DEPARTMENT
Department of Mechanical Engineering
Kongunadu College of Engineering and Technology
Thottiam (Tk), Trichy (Dt) - 621215

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Action Taken Report on Stakeholder Feedback on Curriculum & Teaching – Learning

Stakeholder Suggestions	Action Taken
• Include the topics of various safety measures in Power plant Engineering course. • Need to provide NPTEL course syllabus as equivalent subject to upgrade students learning skills. • Suggested to add electrical and hybrid vehicle topics in the syllabus. • Include recent emission norms in automobile engineering course syllabus. • For better placement, include soft skill courses in the curriculum. • Suggested to add advanced testing methods in NDT course. • Suggested to include the AI topics in relevant courses. • Include more projects in the curriculum related to design and fabrication. • Add recent advancements in elective subjects to upgrade students' knowledge.	The suggestions received from stakeholders on the curriculum and syllabus feedbacks were taken up by the Department of Mechanical Engineering. All the suggestions were unanimously accepted by the faculty members and it was decided to incorporate them in the KNCET - UGR2020 Regulation. This will be implemented in the academic year 2021-2022 under KNCET - UGR2020 for the students of Mechanical Engineering after receiving the approval from the Board of Studies and Academic Council.

HoD
HEAD OF THE DEPARTMENT
Department of Mechanical Engineering
Kongunadu College of Engineering and Technology
Thottiam (Tk), Trichy (Dt) - 621215

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Department of Mechanical Engineering

NOTE

As per the action taken report dated 06-09-2021, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD
HEAD OF THE DEPARTMENT
Department of Mechanical Engineering
Kongunadu College of Engineering and Technology
Thottiam (Tk),Trichy (Dt) - 621215

Enclosure:
1. Curriculum (Regulation KNCET -UGR2020) of Department of Mechanical Engineering.

Kongunadu
College of Engineering & Technology
[Autonomous]

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai.
Namakkal -Trichy Main Road, Tholurpatti Post, Thottiam Taluk,
Tiruchirappalli Dt, Tamil Nadu, India – 621 215
Email: principalkncet@gmail.com | Phone: 04326 – 277571
www.kongunadu.ac.in

Department of Mechanical Engineering

NOTE

As per the action taken report dated 15-07-2022, the suggestions of stake holders on curriculum and syllabus are incorporated in the courses offered under KNCET -UGR2020 regulation and approved by board of studies and academic council.

HOD
HEAD OF THE DEPARTMENT
Department of Mechanical Engineering
Kongunadu College of Engineering and Technology
Thottiam (Tk),Trichy (Dt) - 621215

Enclosure:

1. Curriculum (Regulation KNCET -UGR2020) of Department of Mechanical Engineering.

Kongunadu College of Engineering and Technology (Autonomous)

Affiliated to Anna University, Chennai

B.E. Mechanical Engineering

Regulations: KNCET-UGR2020

Choice Based Credit System

I to VIII Semesters Curricula & Syllabi

Semester I							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN101	Technical English-I	HSMC	3	0	0	3
2	20MA101	Mathematics-I	BSC	3	1	0	4
3	20PH101	Engineering Physics	BSC	3	0	0	3
4	20CY101	Engineering Chemistry	BSC	3	0	0	3
5	20GE101	Structured Programming Using C	ESC	3	0	0	3
6	20GE102	Engineering Graphics	ESC	2	0	2	3
Practicals							
7	20BS101L	Physics and Chemistry Laboratory	BSC	0	0	2	1
8	20GE103L	Structured Programming Using C Laboratory	ESC	0	0	2	1
9	20EEC101L	English for Effective Communication	EEC	0	0	2	1
			Total	**17**	**1**	**8**	**22**

Semester II							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20EN201	Technical English-II	HSMC	3	0	0	3
2	20MA201	Mathematics-II	BSC	3	1	0	4
3	20PH202	Materials Science	BSC	3	0	0	3
4	20BS201	Environmental Science	HSMC	3	0	0	3
5	20BE201	Engineering Mechanics	ESC	3	1	0	4
6	20BE204	Basic Electrical, Electronics and Instrumentation Engineering	ESC	3	0	0	3
Practicals							
7	20GE201L	Engineering Practices Laboratory	ESC	0	0	2	1
8	20ME201L	Drafting and Modelling Laboratory	PCC	0	0	2	1
9	20EEC201L	Soft Skills	EEC	0	0	2	1
			Total	**18**	**2**	**06**	**23**

CHAIRMAN
BoS (MECH)

HEAD OF THE DEPARTMENT
Department of Mechanical Engineering

Semester III							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA302	Transforms and Partial Differential Equations	BSC	3	1	0	4
2	20ME301	Strength of Materials	PCC	3	0	0	3
3	20ME302	Engineering Thermodynamics	PCC	3	1	0	4
4	20ME303	Manufacturing Process - I	PCC	3	0	0	3
5	20ME304	Engineering Metallurgy	PCC	3	0	0	3
6	20EE306	Electrical Drives and Controls	ESC	3	0	2	4
Practicals							
7	20ME305L	Materials Testing and Metallurgy Laboratory	PCC	0	0	2	1
8	20ME306L	Manufacturing Process Laboratory - I	PCC	0	0	2	1
9	20EEC301L	Soft Skills Development	EEC	0	0	2	1
			Total	**18**	**2**	**8**	**24**

Semester IV							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20MA401	Numerical Methods	BSC	3	1	0	4
2	20ME401	Fluid Mechanics and Machinery	PCC	3	0	0	3
3	20ME402	Thermal Engineering	PCC	3	0	0	3
4	20ME403	Manufacturing Process - II	PCC	3	0	0	3
5	20ME404	Kinematics of Machinery	PCC	3	0	0	3
Practicals							
6	20ME405L	Thermal Engineering Laboratory	PCC	0	0	2	1
7	20ME406L	Fluid Mechanics and Machinery Laboratory	PCC	0	0	2	1
8	20ME407L	Manufacturing Process Laboratory - II	PCC	0	0	2	1
9	20EEC401L	Life Skills and Personality Development	EEC	0	0	2	1
			Total	**15**	**1**	**08**	**20**

CHAIRMAN
BOS (MECH)

HEAD OF THE DEPARTMENT
Department of Mechanical Engineering
Kongunadu College of Engineering and Technology
Thottiam (TK), Trichy (Dt) - 621215

Semester V							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20ME501	Heat and Mass Transfer	PCC	3	1	0	4
2	20ME502	Dynamics of Machines	PCC	3	0	2	4
3	20ME503	Design of Machine Elements	PCC	3	0	0	3
4	20ME504	CAD/CAM	PCC	3	0	0	3
5		Professional Elective - I	PEC	3	0	0	3
6	20MC003	Constitution of India	HSMC	2	0	0	0
Practicals							
7	20ME505L	Heat Transfer Laboratory	PCC	0	0	2	1
8	20ME506L	CAD / CAM Laboratory	PCC	0	0	2	1
9	20EEC501L	Professional Skills Development	EEC	0	0	2	1
			Total	**15**	**1**	**08**	**20**

Semester VI							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20ME601	Metrology and Measurements	PCC	3	0	2	4
2	20ME602	Design of Transmission Systems	PCC	3	0	0	3
3	20ME603	Finite Element Analysis	PCC	3	0	0	3
4		Professional Elective - II	PEC	3	0	0	3
5		Open Elective - I	OEC	3	0	0	3
6	20MC002	Universal Human Values 2: Understanding Harmony	HSMC	3	0	0	3
Practicals							
7	20ME604L	Computer Aided Analysis Laboratory	PCC	0	0	2	1
8	20ME605L	Mini Project - I	EEC	0	0	2	1
9	20EEC601L	Employability Skills	EEC	0	0	2	1
			Total	**18**	**0**	**08**	**22**

CHAIRMAN
BoS (MECH)

HEAD OF THE DEPARTMENT
Department of Mechanical Engineering
Kongunadu College of Engineering and Technology
Thottiam (Tk), Trichy (Dt) - 621215

Semester VII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1	20MG701	Total Quality Management	HSMC	3	0	0	3
2	20ME701	Power Plant Engineering	PCC	3	0	0	3
3	20ME702	Mechatronics	PCC	3	0	0	3
4		Professional Elective - III	PEC	3	0	0	3
5		Professional Elective - IV	PEC	3	0	0	3
6		Open Elective - II	OEC	3	0	0	3
Practicals							
7	20ME703L	Mechatronics Laboratory	PCC	0	0	2	1
8	20ME704L	Mini Project - II	EEC	0	0	2	1
			Total	**18**	**0**	**4**	**20**

Semester VIII							
S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
Theory							
1		Professional Elective - V	PEC	3	0	0	3
2		Professional Elective - VI	PEC	3	0	0	3
Practicals							
3	20ME801L	Project Work	EEC	0	0	20	10
			Total	**6**	**0**	**20**	**16**

CHAIRMAN
HEAD OF THE DEPARTMENT
Department of Mechanical Engineering
Kongunadu College of Engineering and Technology
Thottiam (Tk), Trichy (Dt) - 621215

Professional Elective Course (PEC)

Semester V

Elective - I

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20ME501PE	Composite Materials	PEC	3	0	0	3
2	20ME502PE	Welding Technology	PEC	3	0	0	3
3	20ME503PE	Unconventional Machining Processes	PEC	3	0	0	3
4	20ME504PE	Casting Technology	PEC	3	0	0	3
5	20ME505PE	Refrigeration and Air Conditioning	PEC	3	0	0	3
6	20ME506PE	Automation in Manufacturing	PEC	3	0	0	3

Semester VI

Elective - II

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20ME601PE	Gas Dynamics and Jet Propulsion	PEC	3	0	0	3
2	20ME602PE	Non Destructive Testing	PEC	3	0	0	3
3	20ME603PE	Automobile Engineering	PEC	3	0	0	3
4	20ME604PE	Pressure Vessels and Piping Design	PEC	3	0	0	3
5	20MG501	Principles of Management	PEC	3	0	0	3
6	20ME605PE	Oil Hydraulics and Pneumatics	PEC	3	0	0	3
7	20MA601PE	Quantitative and Reasoning Aptitude	PEC	3	0	0	3

Semester VII

Elective - III

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20ME701PE	Design of Jigs, Fixtures and Press Tools	PEC	3	0	0	3
2	20ME702PE	Computer Integrated Manufacturing Systems	PEC	3	0	0	3
3	20ME703PE	Advanced IC Engines	PEC	3	0	0	3
4	20GE501PE	Intellectual Property Rights	PEC	3	0	0	3
5	20ME704PE	Vibration and Noise Control	PEC	3	0	0	3
6	20ME705PE	Elements of Solar Energy Conversion	PEC	3	0	0	3

CHAIRMAN
BoS (MECH)

HEAD OF THE DEPARTMENT
Department of Mechanical Engineering
Kongunadu College of Engineering and Technology

Semester VII

Elective - IV

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20MA701PE	Operations Research	PEC	3	0	0	3
2	20GE601	Professional Ethics in Engineering	PEC	3	0	0	3
3	20ME706PE	Process Planning and Cost Estimation	PEC	3	0	0	3
4	20ME707PE	Fundamentals of Nano Technology	PEC	3	0	0	3
5	20ME708PE	Quality Control and Reliability Engineering	PEC	3	0	0	3
6	20ME709PE	Rapid Manufacturing	PEC	3	0	0	3

Semester VIII

Elective - V

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20ME801PE	Plant Layout and Material Handling	PEC	3	0	0	3
2	20ME802PE	Energy Conservation and Management	PEC	3	0	0	3
3	20ME803PE	Engineering Tribology	PEC	3	0	0	3
4	20ME804PE	Robotics	PEC	3	0	0	3
5	20ME805PE	Maintenance Engineering	PEC	3	0	0	3
6	20MG801PE	Entrepreneurship Essentials	PEC	3	0	0	3

Semester VIII

Elective - VI

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	20MG802PE	Engineering Economics	PEC	3	0	0	3
2	20ME806PE	Computational Fluid Dynamics	PEC	3	0	0	3
3	20ME807PE	Project Management	PEC	3	0	0	3
4	20ME808PE	Production Planning and Control	PEC	3	0	0	3
5	20ME809PE	Flexible Manufacturing Systems	PEC	3	0	0	3
6	20ME810PE	Explosions and Safety	PEC	3	0	0	3

HEAD OF THE DEPARTMENT
Department of Mechanical Engineering
Kongunadu College of Engineering and Technology
Thottiam (Tk), Trichy (Dt) - 621215