

BOARD OF STUDIES - MEETING

DATE: 15.12.2018

VENUE: DIGITAL CLASSROOM (M-223)

DAY: SATURDAY

Minutes of the meeting [Board of Studies] in Chemical Engineering held on 15/Dec/2018 in the Department of Chemical Engineering to review and approve the programme of study and syllabi for B.Tech Chemical Engineering - 2019 Regulations and M.Tech Nanoscience and Technology (to be introduced) under Choice Based Credit System (CBCS).

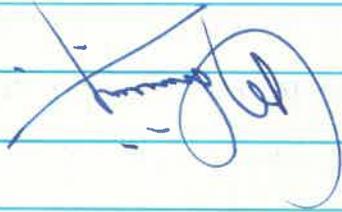
Members present

		<u>Signature</u>
1.	Prof. Dr. M. Thirumarimurugan - Chairman	
2.	Prof. Dr. N. Balasubramanian - University Nominee	
3.	Prof. Dr. G. Pugazhenti - ^{Outside} Subject Expert	C. Raji
4.	Prof. Dr. M. Arivazhagan - ^{Outside} Subject Expert	M. B.
5.	Mr. K. C. Thirumurthy - Industry Expert	
6.	Dr. R. Rajkumar - Industry Expert	
7.	Dr. Anil Vyas - Special Invitee	
8.	Dr. D. Prabhakaran - Member	
9.	Dr. V. M. Sivakumar - Member	V. M. Sivakumar
10.	Mr. T. Sivakumar - Member	
11.	Mr. P. Babu - Member	P. Babu
12.	Dr. E. P. Subramanian - Member	
13.	Dr. J. Devi Shree - Member	Devi Shree
14.	Dr. N. Nagaveni - Member	
15.	Dr. R. Azarudeen - Member	
16.	Dr. G. Selvakumari - Member	G. Selvakumari
17.	Dr. A. Gnanaprakasam - Member	A. Gnanaprakasam
18.	Mr. A. Vivek Joe Bharath - Member	
19.	Mr. P. Sivakumar - Member	

MINUTES OF THE BOARD OF STUDIES MEETING

Dr. M. Thirumavimurugan, Chairman, Board of Studies extended a warm welcome to all the participants in the meeting and thanked them for sharing their precious time to participate in the meeting. At the outset, chairman gave brief introduction about subject as well as industry experts and informed the agenda of meeting. The main agenda of meeting is as follows

- To modify the existing B.Tech Chemical Engineering Curriculum including Vision, Mission, PEO & POs with reference to curriculum prescribed by AICTE [January 2018].
- Curriculum & Syllabi for new Pg Course Name Science and Technology



Dr. M. THIRUMAVIMURUGAN, M.Tech., Ph.D.,
Professor and Head
Department of Chemical Engineering
Colombatare Institute of Technology
Colombatore 641 014, INDIA.

DEPARTMENT OF CHEMICAL ENGINEERING
MINUTES OF THE BOARD OF STUDIES MEETING

Venue: Digital Class room M-223

Date: 15.12.2018 (Saturday)

Dr.M.Thirumarimurugan, The chairman, Board of Studies extended a warm welcome to all the participants in the meeting and thanked them for sparing their precious time to participate in the meeting. At the outset chairman gave brief introduction about subject as well as industry experts and informed the agenda of meeting. The main agenda of meeting is as follows

- To modify the existing B.Tech. Chemical Engineering Curriculum including Vision, Mission, PEO & POs with reference to curriculum prescribed by AICTE [January 2018]
- Curriculum & Syllabi for new PG Course Nano Science and Technology

VISION

Create Chemical Engineers by nurturing innovation, critical thinking, and entrepreneurial spirit to offer solutions to the growing needs of the society.

MISSION

1. To provide academic and research proficiency to pursue a successful career in the field of chemical engineering.
2. To nurture critical thinking among students and enable them to offer innovative solutions for a sustainable environment.
3. To promote entrepreneurial spirit among the young minds.

PROGRAMME EDUCATIONAL OBJECTIVE

1. Students will exhibit professional knowledge in understanding of chemical processes, design and development of chemical equipment in process & chemical industries.
2. Students will be able to perform industrial solutions for engineering and handle problems of process industries relevance to society.
3. Students can adapt to changes in technologies through continuous education and will be able to contribute to national and global economic growth with socially responsible practices.



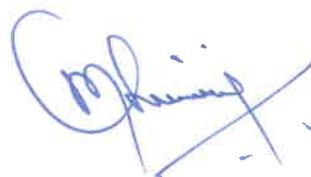
Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.,
Professor and Head
Department of Chemical Engineering
Coimbatore Institute of Technology
Coimbatore - 641 014, INDIA.

PROGRAMME OUTCOME

1. Apply knowledge of mathematics, physical science and chemical engineering fundamentals to solve complex engineering problems.
2. Identify and analyze chemical engineering problems to improve the efficiency of processes and quality of products in chemical industry.
3. Design innovative process for complex chemical engineering systems and provide solutions to meet specified needs with appropriate consideration for public health & safety, culture, society and the environment.
4. Conduct investigations using research methodology, analysis and interpretation of results to derive scientifically sound conclusions.
5. To apply appropriate techniques and engineering software / tools for design & analysis of the process.
6. Apply contextual knowledge in designing systems, components or processes to meet societal needs in the field of chemical engineering.
7. Demonstrate professional skills and contextual reasoning to assess environmental & societal issues for sustainable development.
8. Apply ethical principles to commit professional ethics and responsibilities.
9. Work effectively as an individual, as a member / leader in diverse teams and in multidisciplinary environments.
10. Communicate information and able to write technical reports & presentation skills.
11. Demonstrate and apply engineering & management principles in their own / team projects in multidisciplinary environment.
12. Recognize the need, and have the ability to engage in independent and lifelong learning in broadest context of technological change.

PROGRAMME SPECIFIC OUTCOME

1. Understand and apply working knowledge of chemical engineering principles and applications.
2. Implement the inter-perceptual skills of individuals in technical profession.



Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.,
Professor and Head
Department of Chemical Engineering
Coimbatore Institute of Technology
Coimbatore - 641 014, INDIA.

The following will be the recommended curriculum for B.Tech. Chemical Engineering.

Semester I (First year)
Branch/Course Chemical Engineering

Sl. No.	Category	Course Code	Course Title	Hours per week			Total hrs	Credits
				Lecture	Tutorial	Practical		
1	Humanities, Social Sciences including Management		HASS-I	2	0	2	60	3
2	Basic Science Course		Mathematics – I	3	1	0	60	4
3	Basic Science course		Physics	3	0	0	45	3
4	Basic Science course		Biology for Engineers	3	0	0	45	3
5	Engineering Science Courses		Engineering Graphics	1	0	3	60	2.5
6	Engineering Science Course		Engineering Workshop	1	0	3	60	2.5
7	Basic Science course		Physics Lab	0	0	3	45	1.5
							Total credits	19.5

Semester II (First year)

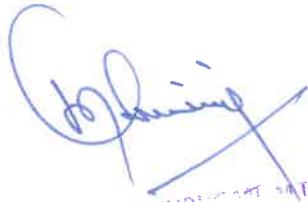
Sl. No.	Category	Code	Course Title	Hours per week			Total hrs,	Credits
				Lecture	Tutorial	Practical		
1	Basic Science courses		Mathematics – II	3	1	0	60	4
2	Basic Science courses		Chemistry-I	3	0	0	45	3
3	Engineering Science Courses		Basics of Electrical & Electronics Engineering	3	1	0	60	3
4	Engineering Science Courses		Engineering and Solid Mechanics	3	1	0	60	3
5	Engineering Science Courses		Introduction to Computing	3	0	0	45	3
5	Basic Science courses		Chemistry Lab.	0	0	3	45	1.5
6	Engineering Science Courses		Electrical and Electronics Engineering Lab	0	0	3	45	1.5
							Total credits	19


Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.,
 Professor and Head
 Department of Chemical Engineering
 Coimbatore Institute of Technology
 Coimbatore - 641 014, INDIA.

**Semester III (Second year)
Curriculum**

Branch/Course Chemical Engineering

Sl. No	Category	Code	Course Title	Hours per week			Total contact hrs	Credits
				Lecture	Tutorial	Practical		
1	Humanities & Social Sciences Including Management Courses		HASS- II	3	0	0	45	3
2	Basic Science Course		Chemistry - II	3	0	0	45	3
3	Basic Science Courses		Mathematics-III	3	1	0	45	3
4	Professional Core Course		Fluid Mechanics	3	1	0	60	3
5	Professional Core courses		Thermodynamics	3	1	0	60	3
6	Professional Core Courses		Chemical Process Calculations	3	1	0	60	3
7	Mandatory non-credit course		Environmental sciences	2	-	-	32	0
8	Engineering Science Courses		Computer Lab (Programming for Problem Solving)	0	0	3	45	1.5
Total credits							19.5	


 Dr. ... M. Tech., Ph.D.,
 Professor and Head
 Department of Chemical Engineering
 Coimbatore Institute of Technology
 Coimbatore - 641 014, INDIA.

Semester IV (Second year) Curriculum

Branch/Course: B. Chem. Engineering

S. No.	Category	Code	Course Title	Hours per week			Total contact hours	Credits
				Lecture	Tutorial	Practical		
1	Humanities & Social Sciences Including Management Courses		HASS- III	2	0	2	60	3
2	Engineering Science Courses		Materials Science	3	0	0	45	3
3	Professional Core Courses		Particle Technology	3	0	0	45	3
4	Professional Core Courses		Chemical Reaction Engineering-I	3	1	0	60	3
4	Professional Core Courses		Mass Transfer-I	3	1	0	60	3
5	Professional Core Courses		Heat Transfer	3	1	0	60	3
6	Professional Elective Courses		Core Elective- I	3	0	0	45	3
7	Professional Core Courses		Fluid Mechanics Lab	0	0	3	45	1.5
8	Professional Core Courses		Technical Analysis Lab	0	0	3	45	1.5
							Total credits	24



Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.,
 Professor and Head
 Department of Chemical Engineering
 Coimbatore Institute of Technology
 Coimbatore - 641 014, INDIA.

Semester V (Third year] Curriculum
Branch/Course Chemical Engineering

Sl. No	Category	Code	Course Title	Hours per week			Total contact hrs.	Credits
				Lecture	Tutorial	Practical		
1	Professional Core Courses		Numerical Methods in Chemical Engineering	2	0	2	60	4
2	Professional Core Courses		Chemical Reaction Engineering- II	3	1	0	60	3
3	Professional Core courses		Mass Transfer-II	3	1	0	60	3
4	Professional Elective Courses		Core Elective- II	3	0	0	45	3
5	Open Elective Courses		Open Elective- I	3	0	0	45	3
6	Mandatory non-credit course		Entrepreneurship development	2	-	-	-	0
7	Professional Core Courses		Mechanical Operations Lab	0	0	3	45	1.5
8	Professional Core Courses		Heat Transfer Lab	0	0	3	45	1.5
Total credits							19	



Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.,
 Professor and Head
 Department of Chemical Engineering
 Coimbatore Institute of Technology
 Coimbatore - 641 014, INDIA.

Semester VI (Third year] Curriculum

Branch/Course Chemical Engineering

S. No.	Type of course	Code	Course Title	Hours per week			Total contact hours	Credits
				Lecture	Tutorial	Practical		
1	Humanities And Social Sciences Including Management Courses		HASS- IV	3	0	0	45	3
2	Professional Core Courses		Mass Transfer- II	3	1	0	60	3
3	Professional Core Courses		Process Control	3	0	0	45	3
4	Professional Elective Courses		Core Elective- III	3	0	0	45	3
5	Open Elective Courses		Open Elective- II	3	0	0	45	3
6	Professional Core Courses		Chemical Reaction Engineering Lab	0	0	3	45	1.5
7	Professional Core Courses		Mass Transfer Lab	0	0	3	45	1.5
8	Professional Core Courses		Mini Project	0	0	4	45	2
							Total credits	20


Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.,
 Professor and Head
 Department of Chemical Engineering
 Coimbatore Institute of Technology
 Coimbatore - 641 014, INDIA.

Semester VII (Fourth year)
Curriculum
Branch/Course Chemical Engineering

S. No.	Type of course	Code	Course Title	Hours per week			Total contact hours	Credits
				Lecture	Tutorial	Practical		
1	Professional Core Courses		Transport Phenomena	3	1	0	60	3
2	Professional Core Courses		Process Economics & management	3	0	0	45	3
3	Professional Core Courses		Chemical Process Industries	3	0	0	45	3
4	Professional Elective Courses		Core Elective- IV	3	0	0	45	3
5	Open Elective Courses		Open Elective- III	3	0	0	45	3
6	Professional Core Courses		Instrumentation & Control Lab	0	0	3	75	1.5
7	Professional Core Courses		Process Equipment Design	0	0	3	60	1.5
8	Professional Core Courses		Process Simulation Lab	0	0	3	60	1.5
Total credits							19.5	

Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.
Professor and Head
Department of Chemical Engineering
Coimbatore Institute of Technology
Coimbatore - 641 014, INDIA.

**Semester VIII (Fourth year]
Curriculum**

Branch/Course Chemical Engineering

Sl. No.	Type of course	Code	Course Title	Hours per week			Total contact hours	Credits
				Lecture	Tutorial	Practical		
1	Professional Elective Courses		Core Elective- V	3	0	0	45	3
2	Professional Elective Courses		Core Elective- VI	3	0	0	45	3
3	Open Elective Courses		Open Elective- IV	3	0	0	45	3
4	Project		Project work	-	-	-		12
Total credits								21



Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.,
Professor and Head
Department of Chemical Engineering
Coimbatore Institute of Technology
Coimbatore - 641 014, INDIA.

The following will be the Curriculum for M.Tech Nano Science and Technology

M.Tech. (Nanoscience and Technology)

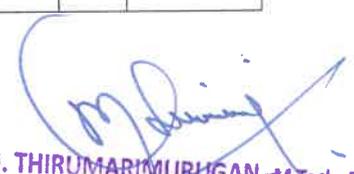
Curriculum

Semester I

Sr. No.	Course Type/Code	Course Name	Teaching Scheme Hrs/Week			Credits
			L	T	P	
1	Core 1	Structure of Nanomaterials	3	0	0	3
2	Core 2	Thermodynamics for Nanomaterials and Systems	3	0	0	3
3	Core 3	Research Methodology and IPR	3	0	0	3
4	Prog. Specific Elective	Elective I One from the list Electives I	3	0	0	3
5	Prog. Specific Elective	Elective – II One from the list of Electives II	3	0	0	3
6	Lab	Nanomaterial synthesis	0	0	3	2
8	Audit 1	Audit course	2	0	2	0
Total			16	0		18

Semester II

Sr. No.	Course Code	Course Name	Teaching Scheme Hrs/Week			Credits
			L	T	P	
1	Core 3	Physicochemical Methods for Characterization of Nanomaterials	3	0	0	3
2	Core 4	Processing and Properties of Nanostructured Materials	3	0	0	3
3	Program Specific Elective	Elective – III One from the list of Electives III	3	0	0	3
4	Program Specific Elective	Elective – IV One from the list of Electives III	3	0	0	3
5	Lab	Nanoscience and Technology Lab	0	0	4	2
6	Seminar	Seminar	0	0	2	1
7		Mini Project	0	0	4	3
8	Aud2	Audit course 2	2	0	0	0
Total			14	0	12	18


Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.,
 Professor and Head
 Department of Chemical Engineering
 Coimbatore Institute of Technology
 Coimbatore - 641 014, INDIA.

Semester-III

Sr. No.	Course Code	Course Name	Teaching Scheme Hrs/Week			Credits
1.	Program Specific Elective	Elective – V One from the list Electives V	3	0	0	3
2.	Open Elective	1. Business Analytics 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects 5. Composite Materials 6. Waste to Energy	3	0	0	3
3.	Dissertation	Dissertation Phase – I	0	0	20	10
Total			06	0	20	16

Semester-IV

Sr. No.	Course Code	Course Name	Teaching Scheme			Credits
			L	T	P	
1.	Dissertation	Dissertation Phase – II	--	--	32	16
Total			--	--	--	16

Total Credits = 68



Dr. M. THIRUMARIMURUGAN, M.Tech., Ph.D.,
Professor and Head
Department of Chemical Engineering
Coimbatore Institute of Technology
Coimbatore - 641 014, INDIA.