



तमिलनाडु केन्द्रीय विश्वविद्यालय
Central University of Tamil Nadu

(Established by an Act of Parliament, 2009)



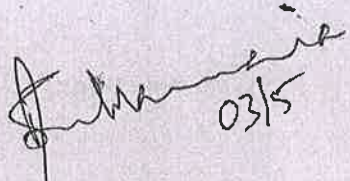
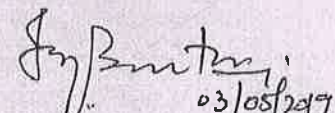
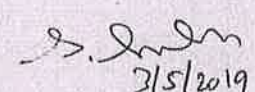
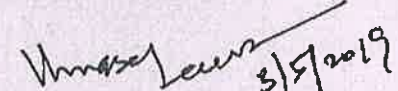
Neelakudi Campus, Thiruvavur - 610 005

DEPARTMENT OF MATERIALS SCIENCE

SCHOOL OF TECHNOLOGY

Minutes of the meeting of the Board of Studies (BoS) held on 03.05.2019 at
Department of Materials Science, CUTN

Members Present

1. Dr. S Beer Mohamed, HoD and Dean
Dept. of Materials Science,
School Technology - Chairman  3/5/19
2. Prof. V. Muthupandi,
Professor-HAG,
Dept. of MME, NIT-Trichy - External Member  3.5.19
3. Prof. A. Subramania,
Professor,
Center for Nanoscience and Technology
Pondicherry University, Pondicherry - External Member  03/5
4. Dr. S.N. Jaisankar,
Sr. Principal Scientist
CSIR-CLRI, Chennai - External Member  03/05/2019
5. Dr. Srinivasan Sampath,
Asst. Professor
Dept. of Materials Science - Member  3/5/2019
6. Dr. V. Gunasekaran,
Asst. Professor
Dept. of Materials Science - Member  3/5/2019


Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलकुडी परिसर
Thiruvavur - 610 005 / तिरुवावूर
Tamil Nadu

Dr. S. Beer Mohamed, HoD and Dean, Department of Materials Science, School of Technology, welcomed the members of the Board of Studies. After his introductory remarks, the BoS committee discussed the syllabi of M.Tech. Materials Science and made the following suggestions/revisions.

All the members extensively went through all the subject syllabi and provided their suggestions to modify/revise the existing syllabi.

1. Two electives should be offered in 2nd Semester itself.
2. In the second semester, total 4 electives are offered for the students among which 2 to be selected.
3. In the 3rd semester, total 4 electives are offered for the students among which 2 to be selected.
4. BoS Members strongly recommended that existing M.Tech. Materials Science programme to be renamed as M.Tech.-Materials Science and Technology.

In the 2nd semester, the following electives are recommended by BOS committee out of which 2 subjects to be chosen by the students.

MST19E1	Nanoscale Fabrication and Techniques
MST19E2	Nanoelectronics and Nanophotonics
MST19E3	Powder metallurgy
MST19E4	Nanotechnology for Agriculture and environment

In the 3rd semester, the following electives are recommended by BOS committee out of which 2 subjects to be chosen by the students.

MST19E5	Nano and bio sensors
MST19E6	Smart Materials and structures
MST19E7	Advanced Crystal Growth
MST19E8	Thinfilm Science and Technology
MST19E9	Additive Manufacturing

The two new core courses are recommended by BOS committee in the 3rd semester.

1. Clean Energy Technology
2. Corrosion Science and Engineering

The BOS committee further recommends to start the following new programmes under School of Technology.

M.Tech. Nanosciences and Technology
M.Tech. Green Energy Technology

The above recommendations are approved by BOS committee.

[Signature]
3/5/19

[Signature]
3.5.19

[Signature]
3/5/2019

[Signature]
03/05/2019

[Signature]
3/5/19

[Signature]
Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलक्कुडी परिसर
Thiruvavur - 610 005 / तिरुवारूर
Tamil Nadu / तमिलनाडु

Dr. S. Beer Mohamed, HoD and Dean, Department of Materials Science, School of Technology, welcomed the members of the Board of Studies. After his introductory remarks, the BoS committee discussed the syllabi of M.Tech. Materials Science and made the following suggestions/revisions.

All the members extensively went through all the subject syllabi and provided their suggestions to modify/revise the existing syllabi.

1. Two electives should be offered in 2nd Semester itself.
2. In the second semester, total 4 electives are offered for the students among which 2 to be selected.
3. In the 3rd semester, total 4 electives are offered for the students among which 2 to be selected.
4. BoS Members strongly recommended that existing M.Tech. Materials Science programme to be renamed as M.Tech.-Materials Science and Technology.

In the 2nd semester, the following electives are recommended by BOS committee out of which 2 subjects to be chosen by the students.

MST19E1	Nanoscale Fabrication and Techniques
MST19E2	Nanoelectronics and Nanophotonics
MST19E3	Powder metallurgy
MST19E4	Nanotechnology for Agriculture and environment

In the 3rd semester, the following electives are recommended by BOS committee out of which 2 subjects to be chosen by the students.

MST19E5	Nano and bio sensors
MST19E6	Smart Materials and structures
MST19E7	Advanced Crystal Growth
MST19E8	Thinfilm Science and Technology
MST19E9	Additive Manufacturing

The two new core courses are recommended by BOS committee in the 3rd semester.

1. Clean Energy Technology
2. Corrosion Science and Engineering

The BOS committee further recommends to start the following new programmes under School of Technology.

M.Tech. Nanosciences and Technology
M.Tech. Green Energy Technology

The above recommendations are approved by BOS committee.

[Signature]
3/5/19

[Signature]
3.5.19

[Signature]
3/5/19

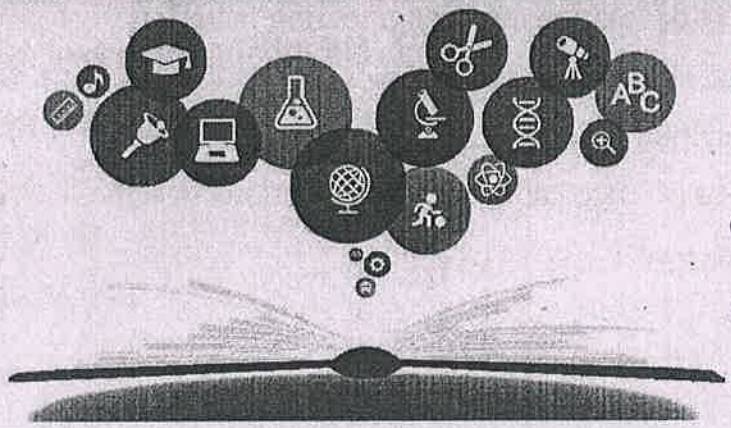
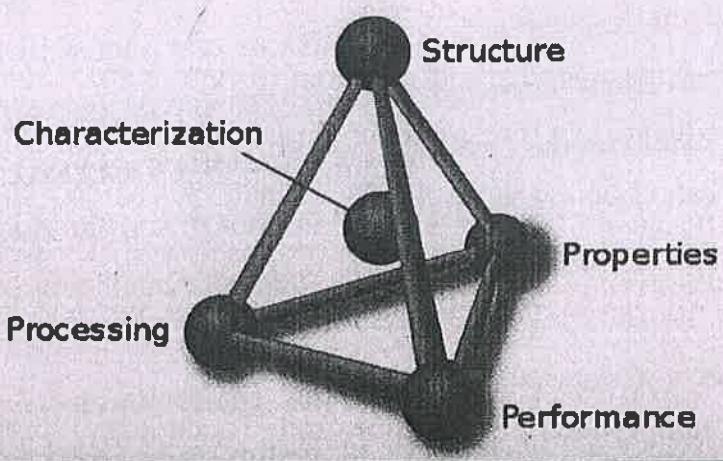
[Signature]
3/5/2019

[Signature]
03/05/2019

[Signature]
3/5/19

[Signature]
Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलकुडी परिसर
Thiruvavur - 610 005 / तिरुवावूर
Tamil Nadu / तमिलनाडु

DEPARTMENT OF MATERIALS SCIENCE
School of Technology
Central University of Tamil Nadu
(Established under an act of Parliament 2009)
Thiruvarur- 610 005



R. Srinivasan
Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलक्कुडी परिसर
Thiruvarur - 610 005 / तिरुवारूर
Tamil Nadu / तमिलनाड

(A)

Master of Technology (M.Tech.) in Materials Science and Technology

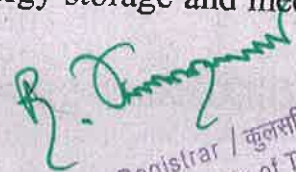
Syllabus

The Materials Science master's programme is a competitive education program that specialises students in the area of new materials and technology. The big leap of advances in modern technologies and products in recent decades relies to a large extent on the development of materials science and technology.

This M.Tech. Programme has been proposed to offer students high level interdisciplinary education and training in novel materials and its technological applications.

The M.Tech. (Materials Science and Technology) programme to be offered by CUTN is interdisciplinary in nature, with students joining from diverse backgrounds. The programme emphasises the comprehension of scientific principles and the development of personal and professional skills in solving practical engineering problems. The studies begin with some mandatory courses on materials science and its technological applications, in order to provide the students with a solid knowledge foundation for modern materials science and nanotechnology. The subjects on Material Science and technology include metallic materials, engineering materials, ceramic materials, polymers & composites, magnetic & electronic materials and synthesis and characterization techniques. The students are particularly encouraged to get a feel for the latest developments in engineering materials.

Advanced level elective courses are offered in close connection to cutting-edge technologies in order to give students a broad perspective of today's materials science and links to applications in semiconductor technology, functional materials, optoelectronics, bioengineering (biocompatibility), chemical and biosensors, energy storage and mechanical applications. Students


Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलकुडी परिसर
Thiruvavur - 610 005 / तिरुवावूर
Tamil Nadu / तमिलनाडु

will also be instructed through the in-depth project courses to develop abilities for creative thinking and problem solving.

At last, students will complete a thesis project in the area of materials science and technology, either in a research group in-house or in industry.

Duration of Course: 2 years (4 semester)

Intake / Seats: 33 Seats

Eligibility Criteria / Entry Requirements


M.Sc. Physics /Chemistry /Materials Science/Applied Physics/Applied Chemistry/Nanoscience and Technology/Electronics/Applied Electronics.

or

B.E/B.Tech. in Materials Science Engineering/Mechanical Engineering /ECE/EIE/EEE/Aeronautical Engineering/ Metallurgy /Nanotechnology / Nanoelectronics/Applied Electronics/Ceramic Technology/Polymer Technology *(Except Computer Science/IT/Food/ Textile/Handloom Technology branches).*

Career Opportunities:

This M.Tech. programme provides students with knowledge and skills required for modern science and technology. Graduates will be prepared for careers within academia or industry. The demand for talents in this field is large both in research institutes and industries. For example, wide-bandgap semiconductors, high-performance soft matters, advanced multifunctional materials, metallurgical engineering as well as hybrid smart materials are of high interest in the industries in India and abroad.


Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलकुडी परिसर
Thiruvavur - 610 005 / तिरुवावूर
Tamil Nadu / तमिलनाडु

(6)

DEPARTMENT OF MATERIALS SCIENCE

SCHOOL OF TECHNOLOGY

CENTRAL UNIVERSITY OF TAMIL NADU

M.Tech. MATERIALS SCIENCE and TECHNOLOGY

Curriculum for I to IV Semester (FULL TIME)

SEMESTER- I

S.No	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	MST1911	Introduction to Materials Science	3	0	0	3
2	MST1912	Nanomaterials and Nanotechnology	3	0	0	3
3	MST1913	Synthesis and Characterization of Materials	3	0	0	3
4	MST1914	Thermodynamics and Kinetics of Materials	3	0	0	3
5	MST1915	Quantum Mechanics and Electromagnetic Theory	3	0	0	3
PRACTICAL						
6	MST1916	Synthesis and Characterization of Materials Lab	0	0	6	3
TOTAL CREDIT			15	0	6	18

SEMESTER- II

S.No	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	MST1921	Physical Metallurgy	3	0	0	3
2	MST1922	Ceramics and Composite Materials	3	0	0	3
3	MST1923	Polymers and Biomaterials	3	0	0	3
4	MST1924	Computational Techniques for Materials Science	2	0	2	3
5	MST19E2	Elective I	3	0	0	3
6	MST19E2	Elective II	3	0	0	3
PRACTICAL						
7	MST1927	Properties of Materials Lab	0	0	6	3
TOTAL CREDIT			17	0	8	21


Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलकुडी परिसर
Tiruvavur - 610 005 / तिरुवावूर
तमिलनाडु

SEMESTER -III

S.No	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	MST1931	Corrosion Science and Engineering	3	0	0	3
2	MST1932	Clean Energy Technology	3	0	0	3
3	MST19E3	Elective III	3	0	0	3
4	MST19E3	Elective IV	3	0	0	3
PRACTICAL						
5	MST1933	Summer Internship	0	0	8	4
6	MST1934	Minor Project	0	0	8	4
7	MST1935	Materials Testing Lab	0	0	6	3
		TOTAL CREDIT	12	0	22	23

SEMESTER- IV

S.No	COURSE CODE	COURSE TITLE	L	T	P	C
PRACTICAL						
1	MST1941	Major Project & Viva	0	0	12	12
		TOTAL CREDIT	0	0	12	12

Summary of Credits

SEMESTER	SEMESTER I	SEMESTER II	SEMESTER III	SEMESTER IV	Total
Credits	18	21	23	12	74


 Registrar / कुलसचिव
 Central University of Tamil Nadu
 तमिलनाडु केन्द्रीय विश्वविद्यालय
 Neelakudi Campus / नीलकुडी परिसर
 Thiruvavur - 610 005 / तिरुवावर
 Tamil Nadu / तमिलनाडु

ELECTIVES

S.No	COURSE CODE	COURSE TITLE	L	T	P	C
Theory						
II Semester Elective Courses						
1	MST19E1	Nanoscale Fabrication and Techniques	3	0	0	3
2	MST19E2	Nanoelectronics & Nanophotonics	3	0	0	3
3	MST19E3	Powder Metallurgy	3	0	0	3
4	MST19E4	Nanotechnology for Agriculture and Environment	3	0	0	3
5*						
III Semester Elective Courses						
1	MST19E5	Nano & Bio Sensors	3	0	0	3
2	MST19E6	Smart Materials and Structures	3	0	0	3
3	MST19E7	Advanced Crystal Growth	3	0	0	3
4	MST19E8	Thinfilm Science and Technology	3	0	0	3
5	MST19E9	Additive Manufacturing	3	0	0	3
6*						

**New electives will be appended based on the availability of course instructor.
Electives will be offered based on the availability of faculty.*


 Registrar / कुलसचिव
 Central University of Tamil Nadu
 तमिलनाडु केन्द्रीय विश्वविद्यालय
 Neelakudi Campus / नीलक्कुडी परिसर
 Thiruvavur - 610 005 / तिरुवावूर
 Tamil Nadu / तमिलनाडु

Dr. S. BEER MOHAMED, M.E., Ph.D.
Dean-School of Technology



தமிழ்நாடு கெந்திரிய விஸ்வவித்யாலய
CENTRAL UNIVERSITY OF TAMIL NADU

(Established by an Act of Parliament, 2009)

நீலக்குடி பரிசர/Neelakudi Campus

திருவாரூர்/Thiruvarur-610 005

தமிழ்நாடு/ Tamil Nadu, India

Email: sbmohammed@cutn.ac.in
Mobile: +91-9944602991

DEPARTMENT OF MATERIALS SCIENCE
SCHOOL OF TECHNOLOGY

01.03.2021


To

The Professor In-charge
Academic Section
Central University of Tamil Nadu

Dear Sir,

We have conducted our department Board of Studies (BOS) meeting on 23-02-2021 Tuesday in the Department of Materials Science through online/offline mode. For the revised syllabus we have obtained concurrence and approval from the external members through email. We have attached the copies of M.Tech. syllabus and BOS minutes of M.Tech. and Ph.D. for your kind perusal and placing for approval in the upcoming academic council meeting.

Regards

 01-03-2021

Dr. S. Beer Mohamed
Head, Department of Materials Science
Dean, School of Technology
Central University of Tamil Nadu
Thiruvarur, Tamil Nadu, India 610 005
hodms@cutn.ac.in

डॉ. एस. बीर मोहम्मद, एम. ई. पीएच.डी.
Dr S. BEER MOHAMED, M. E., Ph.D.,
अध्यक्ष, प्रौद्योगिकी विद्यापीठ
Dean, School of Technology
तमिलनाडु केन्द्रीय विश्वविद्यालय
Central University of Tamil Nadu
तिरुवारूर / Thiruvarur - 610 005. भारत / India.

- Encl:** (1) Four copies of revised syllabus of M.Tech (MST)
(2) BOS minutes of MTech and PhD
(3) Email approval copies from external members


Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु, केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलकुडी पारिसर
Thiruvarur - 610 005 / तिरुवारूर
Tamil Nadu / तमिलनाडु

- 18
20
- | | | |
|---|----------|---------------------------|
| Dr. K. R. S. Preethi Meher
Asst. Professor
Dept. of Materials Science, CUTN | - Member | <i>U.S. Preethi Meher</i> |
| 9. Dr. Srinivasan Sampath
Asst. Professor
Dept. of Materials Science, CUTN | - Member | <i>S. Srinivasan</i> |
| 10. Dr. V. Gunasekaran
Asst. Professor
Dept. of Materials Science, CUTN | - Member | <i>V. Gunasekaran</i> |
| 11. Dr. Sasanka Dalapati
Asst. Professor
Dept. of Materials Science, CUTN | - Member | <i>S. Dalapati</i> |

** Attended through Google meet video-conference call*

Dr. S. Beer Mohamed, HoD and Dean, Department of Materials Science, School of Technology, welcomed the members of the BoS. After his introductory remarks, the BoS committee discussed about the syllabi of the M. Tech. in Materials Science and Technology and made the following suggestions/revisions.

All the members went through all the subject syllabi and suggested the following modifications/revisions.

1. The whole syllabi are changed to 4 credits course instead of existing 3 credits course.
2. Existing references are divided under two headings as 'Books' and 'References' and sufficient details are provided, such as year, edition, publishers, etc. The URL may be given for those books and references which are available in online version only. Books and references should be of latest edition and ensure that they are easily accessible through CUTN library.
3. The title and contents of the existing course on Quantum Mechanics (MST2115) is revised and entitled as 'Introduction to Quantum Mechanics'.

S. Beer Mohamed *K. M. Srinivasan*

S. Dalapati

U.S. Preethi Meher

[Signature]

Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केंद्रीय विश्वविद्यालय
Kudal Campus / नीलक्कुडी परिसर
Thiruvananthapuram - 610 005 / तिरुवाणूर
Tamil Nadu / तमिलनाडु

Dr. K. SETHURAMAN
Head & Dean



Department of Material Science
School of Technology
Central University of Tamil Nadu
Thiruvarur – 610 005,
Tamil Nadu, INDIA

28.07.2023

o/c

To
The Dean (Academics)
Central University of Tamil Nadu
Thiruvarur – 610 005.

Sir,


Sub.: Minutes of the Board of Studies Meeting and M. Tech and Ph.D.
Syllabus submission – Materials Science – Reg.

Ref.: CUTN – 13(28)/2018 -A.C./2537 dated 13.07.2023

Herewith I am submitting the Minutes of the Board of Studies (BOS)
meeting held in the Department of Materials Science, CUTN on 15th July 2023.
Also submitting the modified M. Tech Materials Science and Technology and Ph.D
Materials Science syllabus for further processing.

Thanking you.

Yours sincerely,


(Dr. K. Sethuraman) 28/07/2023

Encl.: (i) BOS Minutes of the Meeting
(ii) Modified M.Tech Syllabus
(iii) Ph.D Syllabus


Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलक्कुडी परिसर
Thiruvarur - 610 005 / तिरुवारूर
Tamil Nadu / तमिलनाडु

Email : sethuraman_33@yahoo.com,
ksethuraman@cutn.ac.in

Mobile: (+91) 9445252309



Scanned with OKEN Scanner



CENTRAL UNIVERSITY OF TAMIL NADU
THIRUVARUR – 610 005
(Established by an Act of Parliament, 2009)

DEPARTMENT OF MATERIALS SCIENCE
SCHOOL OF TECHNOLOGY

MINUTES OF THE BOARD OF STUDIES MEETING

The Board of Studies meeting (Hybrid Mode) for the Department of Materials Science held on 15/07/2023 at 11.30 AM.


Members Present:

S.No	Name and Address of the members	Internal/External
1.	Dr. K. Sethuraman, Associate Professor, Head and Dean, Department of Materials Science, School of Technology, CUTN	Internal Member, Chairperson & Convener (attended offline)
2.	Dr. A. Subramania, Professor, Centre for Nano Science and Technology, Madanjeet School of Green Energy Technologies, Pondicherry University, Pondicherry 605014.	External member (attended online)
3.	Dr. S. P. Kumaresh Babu, Professor, Department of Metallurgical and Materials Engineering, NIT, Tiruchirappalli 620015.	External member (attended online)
4.	Dr. S. N. Jaisankar, Chief Scientist, Polymer Science and Technology, CSIR-Central Leather Research Institute, Adyar, Chennai 600020.	External member (attended online)
5.	Dr. S. Beer Mohammed, Associate Professor, Department of Materials Science, School of Technology, CUTN	Internal Member (attended offline)
6.	Dr. Srinivasan Sampath, Assistant Professor, Department of Materials Science, School of Technology, CUTN	Internal Member (attended offline)
7.	Dr. V. Gunasekaran, Assistant	Internal Member (attended online)

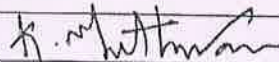
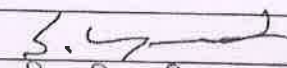

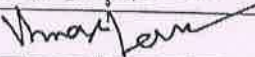
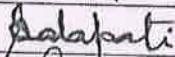
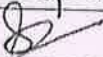
Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलकुडी परिसर
Thiruvavarur - 610 005 / तिरुवारुर
Tamil Nadu / तमिलनाडु

	Professor, Department of Materials Science, School of Technology, CUTN	
8.	Dr. Sasanka Dalapati, Assistant Professor, Department of Materials Science, School of Technology, CUTN	Internal Member (attended offline)
9.	Dr. P. Rajaguru, Professor, Department of Life Sciences, School of Life Sciences, CUTN	Observer (attended online)
10.	Dr. KRS Preethi Meher, Assistant Professor, Department of Materials Science, School of Technology, CUTN	Faculty (attended offline)

The following agenda items were discussed and resolutions made in the BoS:

S.No	Agenda item	Resolutions taken
M. Tech. in Materials Science and Technology		
1.	Mission and Vision Statement	It shall be exclusively focused on 'Materials Science and Technology'
2.	Open elective course syllabus and credit (SEM-II)	The title of the open elective changed to 'Materials for Everyday Life'
3.	Newly introduced soft skill course (SEM-II) and syllabus	MATLAB is included in the proposed syllabus.
4.	Change individual elective course credits from 4 to 3 (SEM-II and SEM-III) to meet the overall credit framework as per NEP2020  Registrar / कुलसचिव Central University of Tamil Nadu तमिलनाडु केन्द्रीय विश्वविद्यालय Neelakudi Campus / नीलकुडी परिसर Thiruvarur - 610 005 / तिरुवारूर Tamil Nadu / तमिलनाड	<ul style="list-style-type: none"> Approved by BoS member and suggested offering more additional courses; MSTEC11: Mechanical Behavior of Materials MSTEC12: Artificial Intelligence in Materials Science and Technology MSTEC13: Non-destructive Testing (NDT) Methods <ul style="list-style-type: none"> Suggested encouraging students for earning credits through online courses from MOOCs, NPTEL, Swayam, e_pathshala, etc., as per NEP2020 guidelines.
5.	The common format of the question paper and OBE mapping of the	Approved by BoS member.

	whole syllabus	
6.	Unique course code for the Department	Approved by BoS member and suggested appropriate title of the course as per the content. MST2012: Nanoscience and Nanotechnology MSTEC01: Nanoscale Fabrication Techniques
PhD in Materials Science		
1.	PhD coursework syllabus and overall credit framework	Approved by BoS member. Suggested encouraging students for earning credits through online courses from MOOCs, NPTEL, Swayam, e_pathshala, etc., as per NEP2020 guidelines.
2.		

Name of the Member	Signature
Dr. K. Sethuraman	
Dr. A. Subramania	Email concurrence
Dr. S. P. Kumaresh Babu	Email concurrence
Dr. S. N. Jaisankar	Email concurrence
Dr. S. Beer Mohamed	
Dr. Srinivasan Sampath	
Dr. V. Gunasekaran	
Dr. Sasanka Dalapati	
Dr. P. Rajaguru	

Meeting ended with vote of thanks


Dean of the School


Chairperson & Convener (BOS)

Encl.: Revised Syllabus (if any) -four copies in thick binding and soft copy (CD)


Registrar / कुलसचिव
Central University of Tamil Nadu
तमिलनाडु केन्द्रीय विश्वविद्यालय
Neelakudi Campus / नीलक्कुडी परिसर
Thiruvavur - 610 005 / तिरुवावरु
Tamil Nadu / तमिलनाड