

NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR

Minutes of the 19th Senate Meeting



Day: Tuesday

Date: 03/11/2020

Time: 11.00 AM

(Via Video Conference)

MINUTES OF THE 19th SENATE MEETING HELD ON 3rd November, 2020

The 19th Senate Meeting of National Institute of Technology Manipur was held on 3rd November, 2020 at 11.00 AM via Video Conference.

The following members were present via Video Conference:

❖ Prof. (Dr.) Goutam Sutradhar Director, NIT Manipur	:	Ex-officio Chairman
❖ Prof. R.K. Lonibala Manipur University	:	Member
❖ Prof. Debkumar Chakrabarti IIT Guwahti	:	Member
❖ Prof. Nidul Sinha NIT Silchar	:	Member
❖ Dr. P. Albino Kumar Dean (AA), NIT Manipur	:	Member
❖ Prof. Rajesh Kumar Bhushan Mechanical Engineering Deptt., NIT Manipur	:	Member
❖ Dr. M. Sunil Singh HoD, Civil, NIT Manipur	:	Member
❖ Dr. Benjamin A. Shimray HoD, EE, NIT Manipur	:	Member
❖ Dr. L. Surajkumar Singh HoD, ECE, NIT Manipur	:	Member
❖ Dr. Y. Jina Chanu HoD, CSE, NIT Manipur	:	Member
❖ Dr. H. Neeranjan Singh HoD, Mechanical Engg., NIT Manipur	:	Member
❖ Dr. Ch. Barchand Singh HoD, Mathematics Deptt., NIT Manipur	:	Member
❖ Dr. L. Herojit Singh HoD, Physics Deptt., NIT Manipur	:	Member
❖ Dr. Chandi Charan Malakar HoD, Chemistry Deptt., NIT Manipur	:	Member
❖ Dr. Sangeeta Laishram HoD, HSS, NIT Manipur	:	Member
❖ Prof. Kh. Manglem Singh Registrar (i/c), NIT Manipur	:	Secretary

Prof. Chiranjib Bhattacharjee and Prof. Pradip Kumar Ray could not be present due to their prior engagement.

Minutes of the 19th Senate
Meeting held on 3rd November, 2020

The Director invited the Dean (AA) to initiate the proceedings on the agenda items.


ITEM NO. 19.1: Confirmation of the minutes of the 18th Senate meeting held on 06/08/2020 via Video Conferencing

The Senate confirmed the minutes of the 18th Senate meeting held on 06/08/2020.

ITEM NO. 19.2: Action taken on the decision of the 18th Senate Meeting held on 06/08/2020 via Video Conferencing

Action taken on the decisions of the 18th Senate meeting held on 06/08/2020 was noted with the following observations:

Sl. No.	Item No.	Agenda	Decision Taken	Action Taken	Remarks
1.	ITEM NO. 18.1:	Confirmation of the minutes of the 15 th Senate meeting held on 20/03/2020 by circulation	The Senate confirmed the Minutes of the 15 th Senate meeting held on 20/03/2020 by circulation.	Noted	Noted
2.	ITEM NO. 18.2:	Confirmation of the minutes of the 16 th Senate meeting held on 01/05/2020 by circulation	The Senate confirmed the Minutes of the 16 th Senate meeting held on 01/05/2020 by circulation.	Noted	Noted
3.	ITEM NO. 18.3:	Confirmation of the minutes of the 17 th Senate meeting held on 08/06/2020 by circulation	The Senate confirmed the Minutes of the 17 th Senate meeting held on 08/06/2020 by circulation.	Noted	Noted
4.	ITEM NO. 18.4:	To consider and approve the registration and starting of academic session of new semester for the continuing students	The Senate approved the starting of (Online) academic session (August-December 2020) from 24/08/2020 for the continuing students.	Notice issued vide NITM.3/(3-Acad)/Notice /2018/27 dated 18/08/2020	Academic Session started.
5.	ITEM NO. 18.5:	To consider and approve the registration fees for the academic session (August - December, 2020) for the continuing students	The Dean (Academic Affairs) apprised the different fee structures of B.Tech, M.Tech, M.Sc and Ph.D to the Senate for the academic session (August-December) Odd Semester	Notice issued vide NITM.3/(3-Acad)/Notice /2018/21 dated 17/08/2020	Complied.
6.	ITEM NO. 18.6:	To consider and approve in using the platform Moodle software for Online Class	The Senate suggested to check CISCO-WEBEX, as Moodle requires higher band width.	At present, Google Meet is being used by faculty for Online Classes	Noted
7.	ITEM NO. 18.7:	To consider and approve in filling the vacant seats of	After discussing the pros and cons of Online Examination,	Notice issued vide	The Dean (AA) apprised that

Minutes of the 19th Senate
Meeting held on 3rd November, 2020

		M.Tech and M.Sc after CCMT and CCMN through Online (Examination and Interview)	the Senate recommended that the vacancy of seats in M.Tech (all branches) and MSc (all departments) after CCMT and CCMN can be filled up through the selection pattern given below: Academic assessment (10, 10+2, Graduation) : 20 marks Written test with Video camera observation online: 30 marks Interview : 50 marks	NITM.3/(3-Acad)/Notice /2018/26dated 17/08/2020	admission was over.
8.	ITEM NO. 18.8:	To discuss on seeking for any donation from Alumni/Companies/Organisations	The Senate recommended that Donation can be sought from Alumni/Companies/Organisations but subject to Finance Committee and BoG approval. The amount that will be received may be utilised in supporting the education for EWS students such as providing PCs/Laptops and necessary materials for the effective education	Noted.	Noted
9.	ITEM NO. 18.9:	To consider and approve for refunding mess fees of April, May and June 2020	The Senate recommended that the hostel mess fees of April, May and June 2020 may be refunded to the students through adjustment	Notice issued vide NITM.3/(3-Acad)/Notice /2018/22dated 17/08/2020	Noted
10.	ITEM NO. 18.10:	To consider and approve one semester exemption from the minimum semester requirement to complete their PhD	The Senate recommended one-semester extension for Ph.D students but without scholarship due to the unprecedented COVID-19 pandemic	Notice issued vide NITM.3/(3-Acad)/Notice /2018/23dated 17/08/2020	Noted
11.	ITEM NO. 18.11:	Discussion on the purchase of Laptop, Digital Pad with earphones for conducting Online Classes	The Senate recommended for the purchase of Laptop, Digital Pad with earphones (within Rs. 75,000/-) for conducting Online Classes. It also agreed to the specification (i5 processor but to remove i5-9300 H as it is old) proposed by the Technical committee	It was placed and approved in the 21 st FC and 21 st BoG meeting held on 18/09/2020 with the i5 processor laptop with	The Dean (AA) apprised that it is under process.

Maghem

[Signature]

Minutes of the 19th Senate
Meeting held on 3rd November, 2020

			subjected to FC and BOG approval.	other accessories proposed by the Technical committee within a range not exceeding Rs. 80,000/-.	
12.	ITEM NO. 18.12:	To discuss the request from Mr. Maisnam Luwanganba Singh (12UEE012) to give his 7 th semester project presentation	After threadbare discussion and deliberation with the Head of the Electrical Engineering department, the Senate recommended Mr. Luwanganba Maisnam (12UEE012), a 2012 batch B.Tech student of EE department to give his 7 th semester project presentation.	Notice issued vide NITM.3/(3-Acad)/Notice /2018/24dated 17/08/2020	Noted
13.	ITEM NO. 18.13:	Any other items with the permission of the Chair	With the permission of the Chair, the Dean (AA) apprised the Senate relating to the End term, Supplementary and Parallel examinations. After scrupulous discussion and deliberation, the Senate recommended that		
			1. Students can write any number of papers (Theory and Practical) in both (Supplementary examination and parallel examination) as supplementary examination is held only Once.	1. Notice issued vide NITM.3/(3-Acad)/Notice /2018/25dated 17/08/2020	Noted
			2. Students who can document a legitimate reason (medical emergency) for missing an end term exam in December (ODD semester session) can take the makeup exam to be scheduled in the first week of February.	2. Notice issued vide NITM.3/(3-Acad)/Notice /2018/25dated 17/08/2020	Noted

ITEM NO. 19.3: To consider and approve the Academic Calendar (November 2020-March 2021) for B.Tech. 1st year admitted in 2020-21 Academic Session.

The Senate approved the Academic Calendar (November 2020- March 2021) for B.Tech. 1st year admitted in 2020-21 Academic Session (Online Classes due to COVID-19) which is given below:

Sl. No.	Name	Semester (November-March)
1.	Registration of 1st Semester UG students	As per JOSAA / CSAB
2.	Starting of Online Classes	25 th November 2020
3.	First instruction day for Fresh B.Tech students	27 th November 2020
4.	Mid Semester Examination (MSE) Theory	18 th - 22 nd January 2021
5.	Last day of Instruction	19 th February 2021
6.	Laboratory End Semester Examination	15 th - 19 th February 2021
7.	End Semester Examination (ESE) Theory	24 th February - 5 th March 2021
8.	Last date for showing evaluated ESE answer scripts to the B.Tech. students	Before 15 th March 2021
9.	Last date of submission of grades to Academic Section	17 th March 2021

ITEM NO. 19.4: To ratify the award of B.Tech. degree to students who passed out in 2020.

The Senate ratified the award of B.Tech. Degree to 109 students who were awarded degree by the 7th Convocation held on 12/10/2020.

ITEM NO. 19.5: To ratify the award of M. Tech degree to students who passed out in 2020.

The Senate ratified the award of M.Tech Degree to 57 students who were awarded degree by the 7th Convocation held on 12/10/2020.

ITEM NO. 19.6: To ratify the award of M. Sc degree to students who passed out in 2020

The Senate ratified the award of M.Sc Degree to 30 students who were awarded degree by the 7th Convocation held on 12/10/2020.

ITEM NO. 19.7: To ratify the award of Ph.D degree

The Senate ratified the award of Ph.D Degree to 15 students who were awarded degree by the 7th Convocation held on 12/10/2020.

ITEM NO. 19.8: To ratify the Award of Gold Medals to B.Tech. toppers who passed in 2020.

The Senate ratified the award of Gold Medals to B. Tech toppers. The Chairman's Gold (Overall Topper) and Institutional Gold medals (Branch toppers) in B.Tech programme were awarded by the 7th Convocation held on 12/10/2020.

The list of Gold medallists is detailed below:

Sl. No.	Name of the student	Department	Gold Medal	Remarks
1.	Mr. Nityanand Tiwari	Electrical Engineering.	Chairman's Gold Medal	The Chairman's Gold medal for B.Tech is awarded to the student who stands first securing the highest marks among all the students of the batch receiving B.Tech Degree
2.	Mr. Samyak Raj	Computer Science & Engineering	Institutional Gold Medal for branch topper in CSE	The Gold Medals are awarded, one for each of the branches of Engineering to the student who ranks first, obtaining the highest marks in his/her branch in Bachelor of Technology degree
3.	Mr. Akshay Saseendran MP	Mechanical Engineering	Institutional Gold Medal for branch topper in ME	The Gold Medals are awarded, one for each of the branches of Engineering to the student who ranks first, obtaining the highest marks in his/her branch in Bachelor of Technology degree
4.	Mr. Yendreddy Venu Gopal Reddy	Electronics & Communication Engineering	Institutional Gold Medal for branch topper in ECE	The Gold Medals are awarded, one for each of the branches of Engineering to the student who ranks first, obtaining the highest marks in his/her branch in Bachelor of Technology degree
5.	Miss Potsangbam Saroja Devi	Civil Engineering	Institutional Gold Medal for branch topper in Civil Engineering	The Gold Medals are awarded, one for each of the branches of Engineering to the student who ranks first, obtaining the highest marks in his/her branch in Bachelor of Technology degree

ITEM NO. 19.9: To ratify the promotion of Felix Pougongrhei Gonmei (16104002) of Electrical Engineering Department to 5th Semester in the August – December, 2020 session

The Senate ratified the promotion of Felix Pougongrhei Gonmei (16104002) of Electrical Engineering Department to 5th Semester in the August –December, 2020 session on a case to case basis.

ITEM NO. 19.10: To ratify the promotion of Khuplianlal (17103033) of Computer Science and Engineering Department to 7th Semester in the August – December, 2020 session

The Senate ratified the promotion of Khuplianlal (17103033) of Computer Science and Engineering Department to 7th Semester in the August –December, 2020 session on a case to case basis.

ITEM NO. 19.11: Miscellaneous

Prof. Rajesh Kumar Bhushan proposed three new courses in Mechanical Engineering for Ph.D course work for approval viz.

- | | | |
|-----------------|----------------------------------|------|
| 1. Code : ME563 | Advanced Mechanics of Solids | 3006 |
| 2. Code : ME565 | Mechanics of Composite Materials | 3006 |
| 3. Code : ME580 | Advanced Mechatronics | 3006 |

The Senate approved the Syllabi of the above three electives in Mechanical Engineering Department both for M.Tech and Ph.D programme. The detailed syllabi are attached at [Annexure I].

Prof. Debkumar Chakrabarti and Prof. Nidul Sinha suggested that due to this Pandemic situation, Chairman of Senate i.e Director is empowered on behalf of the Senate to take decision regarding any urgent issues as and when required.

The meeting ended with a vote of thanks to the Chair.



(Prof. Kh. Manglem Singh)
Registrar (i/c),
Secretary, Senate
National Institute of Technology Manipur



Prof. (Dr.) Goutam Sutradhar
Director, NIT Manipur
Ex-Officio Chairman, Senate
National Institute of Technology Manipur

Annexure-I

Code: ME563

Advanced Mechanics of Solids

3006

COURSE OBJECTIVES

1. Familiarization with the 3D Stress. Analysis of stress in different structures.

SYLLABUS

Analysis of Stresses and Strains in rectangular and polar coordinates: Cauchy's formula, Principal stresses and principal strains, 3D Mohr's Circle, Octahedral Stresses, Hydrostatic and deviatoric stress, Differential equations of equilibrium, Plane stress and plane strain, compatibility conditions. Introduction to curvilinear coordinates. Generalized Hooke's law and theories of failure. Energy Methods. Bending of symmetric and unsymmetric straight beams, effect of shear stresses, Curved beams, Shear center and shear flow, shear stresses in thin walled sections, thick curved bars. Torsion of prismatic solid sections, thin walled sections, circular, rectangular and elliptical bars, membrane analogy. Thick and thin walled cylinders, Composite tubes, Rotating disks and cylinders. Euler's buckling load, Beam Column equations. Strain measurement techniques using strain gages, characteristics, instrumentations, principles of photo-elasticity

ESSENTIAL READING

1. L. S. Srinath, Advanced mechanics of solids, 3rd Edition, McGraw-Hill, 2009.
2. R. G. Budynas, Advanced Strength and Applied Stress Analysis, 2nd Edition, McGraw Hill, 1999.

SUPPLEMENTARY READING

1. M. H. Sadd, Elasticity: theory, applications, and numeric, 3rd edition, Academic Press, 2014.
2. A. P. Boresi, R. J. Schmidt, Advanced Mechanics of Materials, 6th Edition, John Wiley and Sons, 2009.
3. S. P. Timoshenko, J. N. Goodier, Theory of Elasticity, 3rd Edition, McGraw Hill, 2017.
4. P. Raymond, Solid Mechanics for Engineering, 1st Edition, John Wiley & Sons, 2001.
5. J. W. Dally and W. F. Riley, Experimental Stress Analysis, 3rd Edition, McGraw Hill, 1991.

JOURNAL AND CONFERENCES

1. Journal of Applied Mechanics, ASME.
2. Journal of Biomechanical Engineering, ASME.
3. Journal of Mechanical Design, ASME.



COURSE OBJECTIVES

1. Familiarization with the basic expressions and methods used in the mechanics of composite structures. A complete theoretical and practical knowledge of composite materials.
2. The mechanical behaviour of anisotropic materials and how they differ from classical construction materials.

SYLLABUS

Introduction to fibrous composites: Fibre, matrix: materials, properties and fabrication processes, types/classification of composites, fabrication methods of composites, advantages and applications. 3D constitutive equations (principal material and global directions), thermal, hygroscopic effects and hygrothermoelastic constitutive equation. Plane stress (or reduced) constitutive equations (principal material and global directions) and hygrothermoelastic constitutive equation, lamina engineering constants. Lamination theory, hygrothermoelastic lamination theory. Designing with laminates. Test methods: Quality assessment, physical and mechanical property characterization. Micromechanics: Strength of materials and continuum approaches for effective properties. Failure mechanisms, lamina failure theories. Damage mechanics of composites. Fracture mechanics of composites. Interlaminar stresses. Composite joints. Nanocomposites. Stitched composites. 3D composites.

ESSENTIAL READING

1. R. M. Jones, *Mechanics of Composite Materials*, CRC Press
2. M. Mukhopadhyay, *Mechanics of Composite Materials*, University Press

SUPPLEMENTARY READING

1. I. S. Daniel and Ori Ishai, *Engineering Mechanics of Composite Material*, Oxford University Press
2. K K Chawla, *Fibrous Materials*, Cambridge University Press

JOURNAL AND CONFERENCES

1. Composite Structures
2. Composite Structures Engineering Part B



COURSE OBJECTIVES

1. To impart knowledge and importance on Mechatronics in Engineering Fields among the students.
2. To create the awareness on Mechatronics in Research and Application area.

SYLLABUS

Fundamental of Mechantronics: Definition and concepts of Mechatronics, Conventional system vs. mechatronic system, Need and Role of Mechantronics in Design, Manufacturing and Factory Automation. Hardware components for Mechatronics Number system in Mechatronics, Binary Logic, Karnaugh Map Minimization, Transducer signal conditioning and Devices for Data conversion programmable controllers. Types of electric, pneumatic and hydraulic system and actuators used for mechatronics devices. An introduction to sensors and Transducers, use of sensor and transducer for specific purpose in mechatronic. Signals, systems and Actuating Devices: Introduction to signals, systems and control system, representation, linearization of nonlinear systems, time Delays, measures of system performance, types of actuating devices selection. Real time interfacing: Introduction, Element of a Data Acquisition and control system, overview of the I/O process. Installation of the I/O card and software. Application of software in Mechatronics: Advance application in Mechantronics. Sensors for conditioning Monitoring, Use of AI techniques in Mechatronics. Case studies and examples in Data Acquisition and control. Automated manufacturing

ESSENTIAL READING

1. C.W.De Silva, *Mechatronics: An Integrated Approach*, CRC Press.
2. W. Bolton, *Mechatronics: Electronic Control Systems in Mechanical and Electrical Engineering*, Pearson Education.

SUPPLEMENTARY READING

1. Michael B. Histan, David G. Alciatore, *Introduction to Mechatronics and Measurement Systems*, Mcgraw-Hill.
2. Robert H. Bishop, *Mechatronics: An Introduction*, CRC Press.

JOURNAL AND CONFERENCES

1. Mechatronics, Science Direct.
2. International *Journal of Mechatronics* and Automation, Inder Science.

