

NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR

Minutes of the 32nd Senate Meeting



Day: Friday

Date: 09/02/2024

Time: 3.00 PM

(Via Composite Mode)

MINUTES OF THE 32nd SENATE MEETING HELD ON 9th of February, 2024

The 32nd Senate Meeting of National Institute of Technology Manipur was held on 9th of February, 2024 at 3.00 PM via Composite Mode.

The following members attended the meeting

❖ Prof. Kh. Manglem Singh Director (i/c), NIT Manipur	:	Ex-officio Chairman
❖ Prof. Memcha Loitongbam Manipur University	:	Nominated Member
❖ Dr. Debasish Bhattacharya NIT Agartala (Via Video Conference)	:	Nominated Member
❖ Dr. L. Herojit Singh Dean (AA), NIT Manipur	:	Member
❖ Prof. Rajesh Kumar Bhushan Mechanical Engineering Department	:	Member
❖ Prof. P. Albino Kumar CE Dept, NIT Manipur	:	Member
❖ Dr. Kh. Johnson Singh HoD, CSE, NIT Manipur	:	Member
❖ Prof. Bakimchandra Oinam HoD, Civil, NIT Manipur	:	Member
❖ Dr. Benjamin A. Shimray HoD, EE, NIT Manipur	:	Member
❖ Prof. A. Dinamani Singh HoD, ECE, NIT Manipur	:	Member
❖ Dr. Anil Kumar Birru HoD, Mechanical Engg., NIT Manipur	:	Member
❖ Prof. Ch. Barchand Singh HoD, HSS Dept., NIT Manipur	:	Member
❖ Dr. Shagolsem Lenin Singh For, HoD, Physics Deptt., NIT Manipur	:	Member
❖ Dr. Mithun Roy For, HoD, Chemistry Deptt., NIT Manipur	:	Member
❖ Dr. Sunil Panday For, HoD, Mathematics, NIT Manipur	:	Member
❖ Prof. Kh. Tomba Singh Registrar, NIT Manipur	:	Secretary

Prof. Pallab Banerjee could not be present due to his prior engagement.



ITEM NO. 32.1: Confirmation of the minutes of the 31st Senate meeting held on 08/11/2023 via Composite mode

The minutes of the 31st Senate meeting held on 08/11/2023 via Composite mode is confirmed.

ITEM NO. 32.2: Action taken on the decision of the 31st Senate Meeting held on 08/11/2023 via Composite mode

The actions taken on various decisions of the 31st meeting of the Senate are as follows:

Sl. No	Item No.	Agenda	Decision Taken	Action Taken	Remarks
1.	31.3	To consider MoU between Manipur Technical University (MTU) and National Institute of Technology Manipur	A letter has been received from Manipur Technical University (MTU) vide No.17/9/2017-MTU dated 29/04/2023 seeking collaboration with National Institute of Technology Manipur to enhance research and academic excellence. The collaboration will enable potential opportunities and share information that may be relevant to secure additional opportunities for one another. After threadbare discussion and deliberation, the Senate referred the matter to the Dean (Research & Consultancy) to study the feasibility and to put up the matter in the next Senate meeting.	1. Referred to the Dean (R&C) and on examination, he has recommended for legal vetting.	1. Noted
2.	31.4	To consider MoU between All India Institute of Medical Sciences, Bhopal and National Institute of Technology Manipur	An application has been received from Dr. Mithun Roy, Associate Professor, Chemistry Department, NIT Manipur stating that he had initiated the MoU proposal from NIT Manipur with Prof. Sukhes Mukherjee, Additional Professor at AIIMS Bhopal. The MoU will be established on the research collaboration, student and academic exchange along with the mutual use of respective institutes' resources. The proposal is already proposed at AIIMS	2. Awaiting Legal vetting response	2. Legal vetted and the MoU is placed as a main agenda

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			Bhopal with Prof. Sukhes Mukherjee as a Nodal officer. It will be extremely beneficial for NIT Manipur. Dr. Mithun Roy, Associate Professor, Chemistry Department, NIT Manipur has requested the competent authority of NIT Manipur to propose him as the Nodal officer from NIT Manipur in the MoU. After threadbare discussion and deliberation, the Senate referred the matter to the institute legal advisor through Dean (Academic) for its legality and to put up the matter in the next Senate meeting.		
3.	31.5	To consider the proposal for signing an MoU between T.S Paul Manipur Women's College, Mongshangei, affiliated to Manipur University and National Institute of Technology Manipur	A Letter has been received from the Principal, T.S Paul Woman's College, Mongshangei, Imphal West, Manipur wishing to sign an MoU with NIT Manipur. The students and faculties have little exposure in the current trends in Science and Technology with the limited facilities in the college, she is therefore seeking permission for signing an MoU agreement with NIT Manipur so that their faculties and students would get the necessary exposure to the facilities available at NIT Manipur and for guidance. After threadbare discussion and deliberation, the Senate referred the matter to the Dean (Research & Consultancy) to study the feasibility and to put up the matter in the next Senate meeting.	A letter No.NITM.1/(258- Estt)/MOU/2019-1688 dated 30/01/2024 has been communicated to the Principal, T.S Paul Manipur Women's College to submit the draft MOU highlighting the areas of collaboration and other academic activities to be carried out under the MOU.	Noted

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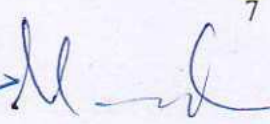
4.	31.6	To consider and approve to grant Academic leave of 12 months to Mr. Ajeesh M Kurup (Enrollment No. 21407002)	Ajeesh M Kurup (Enrollment No. 21407002), PhD student, ME Department under Prof. Rajesh Kumar Bhushan, NIT Manipur and co-supervisor Prof. Navin Kumar, IIT Ropar, has requested for grant of academic leave for 12 months. The PhD student had joined the institute on 12/08/2021 (completed 2 years). He has completed his course work and Comprehensive examination. He has given his State of the Art Seminar on 09/08/2023. The 27th Senate meeting vide item No. 27.5 resolution had approved Prof. Navin Kumar, IIT Ropar as co-supervisor of Mr. Ajeesh M Kurup but on examination, it is found that the NOC for the co-guideship was issued by Prof. Navin Kumar not by the Competent Authority of IIT Ropar. In view of the above, the Senate disapproved the co-guideship of Prof. Navin Kumar, IIT Ropar for Mr. Ajeesh M Kurup. Further, the Senate deferred the Academic leave request.	Noted	Noted
5.	31.7	To consider and approve to grant Academic leave of 12 months to Mr. Shailendra Kumar Bharti (Enrollment No. 21407001)	Shailendra Kumar Bharti (Enrollment No. 21407001) is a PhD student in the ME Department under the guidance of Prof. Rajesh Kumar Bhushan, NIT Manipur and co-supervisor, Dr. Kavita Agarwal, Scientist 'F', DMSRDE, Kanpur has requested for grant of academic leave for 12 months. The PhD student had joined the institute on 09/08/2021 (completed 2 years). He has completed his course work and Comprehensive examination. He has given his State of the Art Seminar on 09/08/2023. After threadbare discussion and	Noted	Noted

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			deliberation, the Senate directed that the leave shall be discussed after the conduct of initial work and the Laboratory development at the institute as per the PhD ordinance item No. 5.3.2		
6.	31.8	To recommend the award of B.Tech degree to those students who graduate B.Tech in 2023	The Senate recommended 161 B.Tech students for the awarded of Degree in the 10 th Convocation to be held on 21/11/2023.	Awarded degree in the 10 th Convocation held on 21/11/2023	Noted
7.	31.9	To recommend the award of M.Tech degree to those students who graduate M.Tech in 2023	The Senate recommended 47 M.Tech students for the awarded of Degree in the 10 th Convocation to be held on 21/11/2023.	Awarded degree in the 10 th Convocation held on 21/11/2023	Noted
8.	31.10	To recommend the award of M.Sc degree to those students who graduate M.Sc in 2023	The Senate recommended 33 M.Sc students for the awarded of Degree in the 10 th Convocation to be held on 21/11/2023.	Awarded degree in the 10 th Convocation held on 21/11/2023	Noted
9.	31.11	To recommend the award of Ph.D degree to those students who graduate Ph.D	The Senate recommended 20 PhD students for the award of Ph.D degree to the above PhD students in the 10 th Convocation to be held on 21/11/2023	Awarded degree in the 10 th Convocation held on 21/11/2023	Noted
10.	31.12	Award of Gold Medals 1. To recommend the award of Institute Gold Medals to departmental toppers in B.Tech programme	1. Abhijeet Anand (19103001) of CSE, Shivam Nagar (19105023) of ECE, Thougamba Kshtrimayum (19101026) of CE and Maruvada Sanket (19107010) of ME were recommended for the award of Institute Gold medals to the Branch toppers in the 10 th Convocation to be held on 21/11/2023.	1. Awarded Institute Gold medals in the 10 th Convocation held on 21/11/2023	1. Noted

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		2. To recommend the award of Chairman's Gold Medal to Overall Topper in B.Tech programme	2. Pukhrambam Akash Singh (19104016) of EE was recommended for the award of Chairman's Gold Medal in the 10 th Convocation to be held on 21/11/2023.	2. Awarded Chairman's Gold Medal in the 10 th Convocation held on 21/11/2023	2. Noted
11.	31.13	To consider and approve the extension of thesis submission by Mr. Ngangom Robertson (15PCE001) is proposed to be till 31st March, 2024	Mr. Ngangom Robertson (15PCE001) is a PhD student in the Civil Engineering Department under the supervision of Prof. Bakimchandra Oinam. The student registered for the PhD programme on 05/01/2015. After threadbare discussion and deliberation based on the recommendation of the concerned DC and DPPC, the Senate approved for extension of Thesis submission by Ngangom Robertson till 31/03/2024.	Noted	Mr. Ngangom Robertson (15PCE001) has submitted his PhD thesis.
12.	31.14	To consider and approve Dr. Dipankar Biswas, Associate Professor, ECE Department, Regent Education and Research Foundation Group of Institutions, Barrackpore, West Bengal as Co-supervisor of Mr. Bidyut Kumar Ghosh (22404002)	After threadbare discussion and deliberation, the Senate did not approve Dr. Dipankar Biswas, Associate Professor, ECE Department, Regent Education and Research Foundation Group of Institutions, Barrackpore, West Bengal as Co-supervisor of Mr. Bidyut Kumar Ghosh (22404002). The Senate viewed that the institute should encourage faculty members only from the Government institute or Higher Ranking Institute to be Co-supervisor of PhD students of NIT Manipur	Noted	Noted
13.	31.15	Discussion on the submission of Mr. Huirem Bharat Meitei (19405004) thesis	Mr. Huirem Bharat Meitei (19405004), a PhD student of Electronics and Communication Engineering Department is under the supervision of Dr. Manoj Kumar, Asst. Professor. He registered for the PhD programme on	Noted	Noted

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			03/02/2020. After threadbare discussion and deliberation, the Senate considering the fact that the student is only three and half years in the PhD programme and to keep a Quality benchmark for the better future of the student directed the said student to publish one more SCI indexed paper for thesis submission		
14.	31.16	To ratify 45 days extension beyond the time frame of 9 years (for Part-Time PhD scholar) for Mr. Angom Buboo Singh thesis submission	Mr. Angom Buboo Singh (14PCS003) is a part time PhD scholar in the department of Computer Science and Engineering under the supervision of Prof. Kh. Manglem Singh. He registered for the PhD programme on 01/09/2014 thereby he completed 9 years on 31/08/2023 which is the maximum applicable extension for PHD part –time scholar. He gave his Pre-synopsis seminar on 31/08/2023, the last day of applicable maximum extension after fulfilling the criteria for the thesis submission. Mr. Buboo has requested the concerned DC to give him 45 days beyond the maximum time frame for his thesis submission. The DPPC meeting held on 04/09/2023 recommended an extension of 45 days to submit his thesis, since he met all the requirements for thesis submission. The Senate, Chairman has already approved the extension recommended by the concerned DPPC. After threadbare discussion and deliberation based on the Chairman, Senate's approval on the recommendation of the DPPC meeting held on 04/09/2023, the Senate ratified to give Mr. Angom Buboo Singh 45 days beyond the maximum time frame	Noted	Mr. Angom Buboo Singh (14PCS003) had submitted his Thesis and was awarded Degree in the 10 th Convocation held on 21/11/2023.

			for thesis submission		
16.	31.17	Discussion on PhD related matter			
		1. To consider and approve that the Number of seats allocated to the faculty shall be solely dedicated to the main supervisor.	1. The Senate approved that the allocation of seats of the PhD scholar shall be 0.5 each for the main supervisor and co-supervisor. The specialization of the supervisor and the co-supervisor should be different and from NIT Manipur.	1. Noted	1. Noted
		2. To consider and approve for omission of clause " the limit of similar word in a sentence will be 10" from the content of the Notice NITM.3/(3-Acad)/Notice/2022/249 dated 09/12/2022 which was resolved vide Item No. 27.7 of the 27 th Senate meeting held on 14/11/2023 related to Plagiarism.	2. The Senate recommended and approved for the omission of clause " the limit of similar word in a sentence will be 10" from the content of the Notice NITM.3/(3-Acad)/Notice/2022/249 dated 09/12/2022 which was resolved vide Item No. 27.7 of the 27 th Senate meeting held on 14/11/2023 related to Plagiarism.	2. Noted	2. Noted
		3. To consider and approve to modify Item No. 25.8.g resolution of 25 th Senate meeting held on 10/05/2022	3. "The departmental head will constitute a five-member committee, for the Interview of GATE/ NET qualified candidates and candidates qualified in PhD entrance test. Each member of committee will assess the performance of candidate based on 10 marks. Total assessment will be for 50 marks".	3. Noted	3. Noted
			The HoDs meeting held on		

			01/11/2023 proposed to substitute the above resolution by "The departmental head will constitute a committee of five or more members with compulsory nomination of Faculty members who are having vacant PhD seats in the committee. Each member of the committee will assess the performance of candidate".		
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ITEM NO. 32.3: To consider and approve Dr. Angom Devadatta Mani, Asst. Professor, Department of Basic Sciences (Physics), Manipur Technical University as Co-supervisor of Laishram Neeraj Singh (23409001) who is under the supervision Dr. Ibetombi Soibam, Associate Professor, Physics Department, NIT Manipur

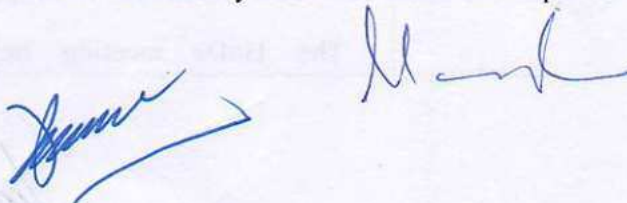
The Senate approved Dr. Angom Devadatta Mani, Asst. Professor, Department of Basic Sciences (Physics), Manipur Technical University to be the co-supervisor of Mr. Laishram Neeraj Singh (23409001) who is under the supervision of Dr. Ibetombi Soibam, Associate Professor, Physics Department, NIT Manipur.

ITEM NO. 32.4: To discuss and consider Dr. Khelchandra Thongam, Associate Professor, CSE to be the external co-guide of Ms. Takhellambam Sylvia enrolled in PhD-CSE (P/T) programme in ASET, Amity University, Uttar Pradesh

The Senate approved Dr. Khelchandra Thongam, Associate Professor, CSE, NIT Manipur to be the external co-guide of Ms. Takhellambam Sylvia who is enrolled in PhD-CSE (P/T) programme in ASET, Amity University, Uttar Pradesh.

The Senate approved that the allocation of seat for the outside/external PhD scholar shall be 0.5 each for which the faculty member of NIT Manipur is the co-supervisor.

The Senate also approved that the allocation of seat for the outside/external co-supervisor however shall be considered 1 count for the faculty member of NIT Manipur who is the main supervisor.



ITEM NO. 32.5: To consider and approve Dr. Biraj Shougaijam, Asst. Professor, Department of Electronics and Communication Engineering, Manipur Technical University (MTU) as Co-supervisor of Bimoljit Chanam (23405002) who is under the supervision of Prof. Aheibam Dinamani Singh, NIT Manipur

The Senate approved Dr. Biraj Shougaijam, Asst. Professor, Department of Electronics and Communication Engineering, Manipur Technical University (MTU) as Co-supervisor of Bimoljit Chanam (23405002) who is under the supervision of Prof. Aheibam Dinamani Singh, NIT Manipur.

ITEM NO. 32.6: To consider and approve for the extension of PhD programme period for Mr. Maisnam Bipinchandra Singh (16PCE003), PhD scholar, Civil Engineering Department

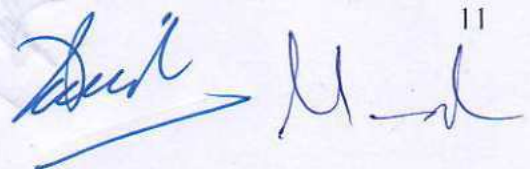
Mr. Maisnam Bipinchandra Singh (16PCE003) is a PhD student of the Civil Engineering Department working under the supervision of Dr. Ngangbam Romeji and Dr. Thiyam Tamphasana Devi. The student registered for PhD on 21/01/2016. He has crossed the limit of 8 years (for Regular) in PhD programme on 20/01/2024.

The concerned DC meeting held on 09/01/2024 has highlighted that the PhD work is Lab-based as well as field monitoring work. Due COVID-19 pandemic since 2020 and personal health issues, the student was not able to carry out any work related to his PhD. The student has participated in 2 (two) International conferences and published 1(one) paper in Scopus indexed journal as per his last progress report dated 30/11/2023. The student has also submitted a research paper in SCIE indexed journal which is under review.

Based upon the DC recommendation, the DPPC meeting held on 11/01/2024 has recommended to the IPPC and the Senate for extension of Mr. Maisnam Bipinchandra Singh's PhD completion by 6 months (i.e till June 2024) from his current ongoing XVI semester.

In view of the above and after threadbare discussion, the Senate approved for extension for one more year i.e upto 19/01/2025 on the case to case basis.

ITEM NO. 32.7: To consider and approve Memorandum of Understanding under INUP-i2i program between IIT Guwahati and National Institute of Technology Manipur



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The Indian Nanoelectronics Users Program (INUP) at Indian Institute of Technology Guwahati (IITG) is sponsored by Ministry of Electronics and Information Technology (MeitY), Government of India and Office of Principal Scientific Advisor (PSA). It is an integral part for establishing a Center of Excellence in Nanoelectronics (CEN).

The INUP center at IITG has state of the facilities of nanoelectronics. These facilities are open to academic researchers from the country.

The researchers and students of NIT Manipur will be benefitted if collaborated with INUP of IITG. To grant access to such facilities to such High End facilities, the INUP center of IITG needs an MOU with NIT Manipur.

The Senate approved the proposed Memorandum of Understanding between INUP-i2i centre of IIT Guwahati and National Institute of Technology Manipur.

ITEM NO. 32.8: To ratify the Academic Calendar for the Academic year 2024-2025 (January to December 2024)

The Senate ratified the Academic Calendar for the Academic year 2024-2025 (January to December 2024).

ITEM NO. 32.9 To consider and approve for extension of 6 months for PhD thesis submission of Mr. Ngasepam Bhogenjit Singh (15PCH003) of Chemistry Department

Mr. Ngasepam Bhogenjit Singh (15PCH003) is a PhD scholar under the supervision of Dr. Th. David Singh, Associate Professor, Chemistry Department. He registered for the PhD programme in Chemistry Department on 07/01/2015 in Part-Time mode. He has completed 9 years (maximum time limit for Part-time PhD) on 06/01/2024.

The concerned DC meeting held on 09/01/2024 commented that Mr. Ngasepam Bhogenjit Singh could not submit the Thesis due to lack of staff in the department and moreover allocation of heavy practical schedule for both B.Tech and M.Sc to him for the last 2 years. He is the only Technical Assistant in the Department. He has published one SCIE journal in Russian Journal of Inorganic Chemistry.

In view of the concerned DC's recommendation and after due appraisal, the Senate approved extension of 6 months w.e.f 06/01/2024 till 06/07/2024 for PhD thesis submission.

ITEM NO. 32.10: To discuss regarding the inclusion of Medical /Dental degree for the PhD programme in NIT Manipur

In this regard, a DPPC meeting held on 01/02/2024 reasoned that the integration of Medical Science and Technology can be achieved by allowing candidates from medical/dental background for a PhD programme at the Technological institutes like NIT Manipur. The meeting pointed out that many of the IITs have the medical degree (MBBS/MD) as one of the minimum qualification for admission to the full time/ part time PhD programme.

After threadbare discussion and deliberation, the Senate approved in principle the inclusion of Medical /Dental degree for the PhD programme in NIT Manipur. The Senate directed to design the course work structure for the same and put up in the next Senate meeting.

ITEM NO. 32.11: To discuss the thesis submission of Reingachan N (17408004), a PhD student in the Department of Mathematics

Reingachan N (17408004) is a PhD student under the supervision of Prof. Chanam Barchand Singh. He registered for the PhD programme on 05/01/2018.

Mr. Raingachan N has published 4 Scopus indexed journals and 1 UGC care journal. The concerned supervisor has submitted the PhD thesis on 08/01/2024.

After threadbare discussion and deliberation, the Senate directed Mr. Reingachan N to publish at least 2 SCI/SCIE indexed journal paper as first author along with the Supervisor for considering the thesis submission.

ITEM NO. 32.12 To consider for wider dissemination of January 2024 semester courses among faculty and students for Enrolments and Credit Transfer through SWAYAM

SWAYAM portal is an initiative under the National Mission on Education through information and Communication Technology (NMEICT) which facilitates hosting of all the courses taught in classrooms from Class 9th till Post-Graduation helping students to provide quality courses from experienced faculties from premier institutions. The SWAYAM platform offers a diverse range of MOOCs for learners for credit transfer.

SWAYAM is offering 1183 courses for January 2024 semester and till date more than 8 lakhs 50 thousand Enrolments have been made. www.swayam.gov.in may be referred.

The matter was appraised and after threadbare discussion, the Senate directed the departmental Heads to appoint coordinators and work out with the students. The Courses selected should pass through the concerned DUPCs and DPPCs. Courses already there in the syllabus should not be chosen from the SWAYAM portal.

ITEM NO. 32.13: To consider and approve new elective courses for PhD course work which will be in addition to the open elective courses for M.Tech programme in the Department of Civil Engineering

After threadbare discussion and deliberation, the Senate approved new elective courses for PhD course work which will be in addition to the open elective courses for M.Tech programme in the Department of Civil Engineering. New elective courses detailed syllabus is appended as **ANNEXURE -1**.

ITEM NO. 32.14: To consider increasing students' intake in MTech with specialization in Structural Engineering in the Department of Civil Engineering

The DPPC meeting held on 01/02/2024 recommended the increase in number of students' intake from the existing 10 to 20 students. It was noted that in the previous academic year, 50 candidates applied for admission in M.Tech in Structural Engineering (Specialization). Increase in number of students will also increase the Internal Revenue Generation (IRG) of the institute and hence will benefit the Institute in the long run.

In view of the DPPC's recommendation and after threadbare discussion and deliberation, the Senate approved the increase in intake of MTech in Structural Engineering (specialization) in line with the same seat matrix as that of other MTech courses including EWS and other category.

ITEM NO. 32.15: To re-consider and approve Prof. Navin Kumar, Department of Mechanical Engineering, IIT Ropar as external co-supervisor of Mr. Ajeesh M Kurup (Enrollment No. 21407002), a PhD scholar in the department of Mechanical Engineering, NIT Manipur

The Senate after threadbare discussion and deliberation on the production of NoC from the competent Authority of IIT Ropar re-considered and approved Prof. Navin Kumar, Department of Mechanical Engineering, IIT Ropar as the external co-supervisor of Mr. Ajeesh M Kurup (Enrollment No. 21407002), a PhD scholar who is under the main



supervision of Prof. Rajesh Kumar Bhushan of Mechanical Engineering department, NIT Manipur.

ITEM NO. 32.16: To consider and approve to grant Academic leave of 6 months to Mr. Ajeesh M Kurup (Enrollment No. 21407002)

Ajeesh M Kurup (Enrollment No. 21407002), a PhD student, ME Department under Prof. Rajesh Kumar Bhushan, registered for the PhD programme on 12/08/2021 (completed 2 years and 5 months. He has completed his course work and Comprehensive examination. He has given his State of the Art Seminar on 09/08/2023.

The concerned DC and DPPC have recommended academic leave of 6 months to carry out experimental works at IIT Ropar.

After threadbare discussion and deliberation, the Senate granted Academic leave of 3 (three) months only to Mr. Ajeesh M Kurup (Enrollment No. 21407002) for conducting his research work at IIT Ropar. He has to present the work progress to the concerned DC meeting when he returns from the Academic leave. Attendance register has to be strictly maintained by his external co-supervisor at IIT Ropar for the award of fellowship from the institute.

ITEM NO. 32.17: Any other items with the permission of the chair

1. To discuss and approve for fixing the honorarium for the external expert

The Senate meeting has recommended the honorarium of the external expert (not below the rank of Associate Professor) engaged for upgradation of JRF to SRF / project progress evaluation to Rs. 5000/- subject to approval by the BoG.

2. To consider MoU between All India Institute of Medical Sciences, Bhopal and National Institute of Technology Manipur

Dr. Mithun Roy, Associate Professor, Chemistry Department, NIT Manipur had initiated the MoU proposal from NIT Manipur with Prof. Sukhes Mukherjee, Additional Professor at AIIMS Bhopal. The MoU will be established on the research collaboration, student and academic exchange along with the mutual use of respective institutes' resources. The proposal is already proposed at AIIMS Bhopal with Prof. Sukhes Mukherjee as a Nodal officer. It will be extremely beneficial for NIT Manipur.

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Dr. Mithun Roy, Associate Professor, Chemistry Department, NIT Manipur had requested the competent authority of NIT Manipur to propose him as the Nodal officer from NIT Manipur in the MoU.

The 31st Senate meeting vide its Item No.31.4 resolution referred the matter to the institute legal advisor through Dean (Academic) for its legality and to put up in the next Senate meeting.

The legally vetted draft MoU was placed and the Senate after due perusal approved the MoU. The draft MoU between NIT Manipur and AIIMS, Bhopal is appended at **Annexure-2.**

The meeting ended with vote of thanks to the Chair.



(Prof. Kh. Tomba Singh)
Registrar
Secretary, Senate
National Institute of Technology Manipur



(Prof. Kh. Manglem Singh)
Director (i/c), NIT Manipur
Ex-Officio Chairman, Senate
National Institute of Technology Manipur



ANNEXURE-1

NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR DEPARTMENT OF CIVIL ENGINEERING PG: Open Elective Course

Annexure 1

The DPPC meeting held on 01/02/2024 resolved to recommend the following courses for inclusion in the institute curriculum to the Senate.

Sl. No.	LTPC	Semester	Course Code	Course Name	PG/UG	Type of Course
1.	3-0-0-6	Odd	CE509	Climate Change Assessment	PG	Open Elective
2.	3-0-0-6	Odd	CE511	Sustainability Analytics and Design	PG	Open Elective
3.	3-0-0-6	Even	CE514	Environmental Management	PG	Open Elective

Details of the course content and recommended textbooks/references are enclosed herewith.

Prof. Bakimchandra Oinam
DPCC Chairperson and Head
Department of Civil Engineering,
NIT Manipur

Dr. A. Azhoni, Associate Professor
Secretary DPPC
Department of Civil Engineering
NIT Manipur



NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR
DEPARTMENT OF CIVIL ENGINEERING
M.Tech.: Open Elective Course

1. Course Title: **CLIMATE CHANGE ASSESMENT**
2. Subject Code: **CE 509**
3. Contact Hours (weekly): **L: 3 T: 0 P: 0** (Total: 36 to 40 hours)
4. Credits: 6
5. Semester: First/Second/Third
6. Pre-requisite: Basic knowledge of atmospheric physics and chemistry.

Syllabus / Course Contents:

(3-0-0-6)

The Climate Challenge:

Weather, climate, and climate change; Coordinate System of the Earth; Anomalies of the Earth's temperature; Climate over the Earth's History; Recent changes in the climate. Context of the Recent Warming; Greenhouse Gases

Radiation and Energy Balance:

Temperature and Energy; Electromagnetic Radiation; Blackbody Radiation; Energy Balance

The Carbon Cycle: Greenhouse Gases and Our Atmosphere's Composition; Atmosphere–Land–Biosphere–Ocean Carbon Exchange; Atmosphere–Rock Exchange; Human Perturbation of the Carbon Cycle; Fate of Carbon Dioxide, Methane and Other Greenhouse Gases.

Projections of Future Climate Change:

The Factors that Control Emissions; Emissions Scenarios; Future Climate; Exponential growth; The Social Cost of Carbon.

Climate Change Impacts and Vulnerability Assessments: Physical and social impacts of climate change; Climate change and water; Observed and projected changes in climate; Indicators & Patterns of Large-Scale Variability. Methods and tools for assessing vulnerability. Identifying key stakeholders and their roles in vulnerability assessments. Case studies on successful vulnerability assessments

Climate change Adaptation:

Developing adaptation strategies and action plans. Mainstreaming climate change adaptation into existing policies and plans. Cost-benefit analysis of adaptation measures. Practical approaches to implementing adaptation measures Role of local communities, governments, and NGOs in adaptation efforts. Monitoring and evaluation of adaptation projects..

Text Books:

1. **Geographical Information Systems in Hydrology (1996)**, Vijay P. Singh and M. Fiorentino, Kluwer Academic Publishers (ISBN 978-90-481-4751-9).
2. **Remote Sensing of the Environment: An Earth Resource Perspective (2000)**, John R. Jensen, Prentice – Hall Series in GIS, New Jersey 07458, USA.
1. **Climate Change and Water (2008)**. Editors: Bryson C. Bates, Zbigniew W. Kundzewicz, Shaohong Wu and Jean Palutikof, Technical Paper of the Intergovernmental Panel on Climate Change, IPCC Secretariat, Geneva, 210 pp.

Reference Books:

1. **Applied Hydrology (1988)** . Ven Te Chow, David R. Maidment, and Larry W. Mays, McGraw-Hill, Inc., USA.
 2. **Manual of Remote Sensing, Vols. 1 to 5 (2003)**. American Society of Photogrammetry and Remote Sensing (ASPRS).
 3. **Remote Sensing and Image Interpretation (2000)**. Lillesand, T.M. and R.W. Kiefer, 4th Ed., John Wiley & Sons.
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NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR
DEPARTMENT OF CIVIL ENGINEERING
M.Tech.: Open Elective Course

1. Course Title: **SUSTAINABILITY ANALYTICS & DESIGN**
2. Subject Code: **CE511**
3. Contact Hours (weekly) : **L: 3 T: 0 P: 0** (Total: 36 to 40 hrs)
4. Credits: 6
5. Semester: First/Second/Third
6. Pre-requisite: Knowledge of undergraduate level physics, mathematics and chemistry.

Syllabus / Course Contents:

(3-0-0-6)

Sustainability in Engineering Design: Problem Solving in Engineering; The Conventional Engineering Design Process; From Conventional to Sustainable Engineering Design Process; Design for Life Guidelines and Strategies; Measuring Sustainability; Sustainable Design through Sustainable Procurement Criteria; Case Studies on Sustainable Engineering Design Process; Sustainable Building Design; Sustainable Product Design in Mechanical; Sustainable Product Design in Electronic Engineering; Sustainable Product Design in Electrical Engineering.

Life Cycle Assessment for Sustainability: Introduction to LCA; The LCA Methodology; The LCA Goal and Scope Definition; Life Cycle Inventory; Life Cycle Impact Assessment; The Iterative Nature of LCA; Methodological Choices; LCI Databases and LCA Software; Strengths and Limitations of LCA; Environmental Life Cycle Costing, Social Life Cycle; Assessment, and Life Cycle Sustainability Assessment; Environmental Life Cycle Costing; Social Life Cycle Assessment; Life Cycle Sustainability Assessment; LCA Applications in Engineering; Environmental Product Declarations and Product Category Rules; Carbon and Water Footprint; Energy Systems; Buildings and the Built Environment; Drinking Water Supply and Wastewater Treatment; Solid Waste Management; Chemicals and Chemical Production; Automotive Industry; Food and Agriculture; Electronics and Information and Communication Technologies (ICT)

Tools for Sustainability Assessment: Procedural Tools; Environmental Management System; Environmental Auditing; Cleaner Production Assessment; Environmental Impact Assessment; Strategic Environmental Assessment; Life Cycle Management; Design for Sustainability; Sustainable Procurement; Stakeholder Engagement; CSR and Sustainability Reporting; Eco-Labeling and Environment Product Declaration; Buildings and Infrastructure Rating Systems; Backcasting; Analytical Tools Based on Physical Metrics; Life Cycle Assessment; Carbon, Water, and Product Environmental Footprints; Material Flow Accounting; Environmental Risk Assessment; Green Infrastructure Valuation Based on Nonphysical Metrics; Stakeholder Analysis; Cost Benefit Analysis; Environmental Life Cycle Costing; Social Life Cycle Assessment; Life Cycle Sustainability Assessment; Multi-criteria Analysis; System Dynamics.

Text Books:

1. **Introduction to Sustainability for Engineers (2020)**, Toolsearam Ramjeawon, CRC Press Taylor & Francis Group, New York. ISBN 978-0-367-25445-2 (Hardback).
2. **Design for Sustainability: A Practical Approach (2007)**, Tracy Bhamra and Vicky Lofthouse. Ashgate Publishing Company, Burlington. ISBN-13: 9780566087042
3. **Engineering for Sustainable Development: Guiding Principles (2005)**, The Royal Academy of Engineering. The Royal Academy of Engineering, London. ISBN: 1-903496-21-7
4. **Sustainable Engineering Principles and Implementation (2019)**, Catherine N. Mulligan. CRC Press Taylor & Francis Group, New York. ISBN - 3: 978-1-498-77458-1



NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR
DEPARTMENT OF CIVIL ENGINEERING
M.Tech.: Open Elective Course

1. Course Title: **ENVIRONMENTAL MANAGEMENT**
2. Subject Code: **CE514**
3. Contact Hours (weekly) : **L: 3 T: 0 P: 0** (Total: 36 to 40 hrs)
4. Credits: 6
5. Semester: First/Second/Third
6. Pre-requisite: Knowledge of undergraduate level physics, mathematics and chemistry.

Syllabus / Course Contents:

(3-0-0-6)

Course Description:

This course is designed to provide postgraduate engineering and technology students with a comprehensive understanding of environmental management principles, practices, and regulations. It aims to equip students with the knowledge and skills necessary to integrate sustainable practices into engineering and technological projects. The course will cover a range of topics, including environmental regulations, impact assessments, sustainable design, and waste management. Through case studies, practical exercises, and industry-focused projects, students will develop the expertise required to navigate the intersection of technology and environmental responsibility.

Week 1-2: Introduction to Environmental Management: Definition and scope of environmental management. Environmental laws and regulations. International frameworks and agreements. Corporate social responsibility in engineering and technology

Week 3-4: Environmental Impact Assessment (EIA): Principles and methods of EIA. Case studies on EIA implementation. Regulatory requirements for EIA in various industries. EIA documentation and reporting

Week 5-6: Sustainable Design and Development: Integrating sustainability into engineering and technological projects. Life cycle assessment (LCA) and eco-design principles. Sustainable materials and manufacturing processes. Design for disassembly and recycling

Week 7-8: Pollution Prevention and Control: Identification and assessment of different types of pollution. Best practices for pollution prevention and control. Pollution control technologies in engineering and industry. Regulatory compliance and reporting.

Week 9-10: Resource Efficiency and Energy Conservation: Efficient use of resources in engineering projects. Energy conservation techniques and technologies. Renewable energy integration in engineering designs. Energy audits and management practices

Week 11-12: Waste Management and Circular Economy: Waste generation and characterization. Waste reduction, reuse, and recycling strategies. Circular economy principles in engineering and technology. Case studies on successful waste management practices

Week 13: Environmental Management Systems (EMS): Introduction to ISO 14001 and other EMS standards. Implementing and maintaining an EMS. Auditing and certification processes. Continuous improvement in environmental performance

Week 14: Industry Applications and Case Studies: Application of environmental management principles in various industries. Analysis of successful environmental management practices

Guest lectures from industry experts
Group projects on real-world environmental challenges in engineering and technology

Recommended Textbooks and References:

1. Environmental Management: Principles and Practice by Stuart Walker and Paul Renwick
2. Environmental Management in Organizations: The IEMA Handbook by John Brady and Alison Ebbage. Published by the Institute of Environmental Management and Assessment (IEMA).
3. Introduction to Environmental Management by David R. Johnson and Frank A. Bunnell.
4. Environmental Management: A Guide for Facility Managers by Joseph G. Allen
5. Environmental Impact Assessment: Theory and Practice by Peter Wathern
6. Sustainable Development and Environmental Management: Experiences and Case Studies by M. A. Quaddus and Mohammad A. T. Abdullah
7. Environmental Management: Systems, Strategy, and Applications" by Ralph W. Tiner.
8. Waste Management Practices: Municipal, Hazardous, and Industrial by John Pichtel
9. ISO 14001 Environmental Systems Handbook by Ken Whitelaw
10. Environmental Management: Readings and Cases by Michael V. Russo and Paul A. Farris



MEMORANDUM OF UNDERSTANDING

Between

NIT, Manipur

AND

AIIMS, Bhopal

PREAMBLE

This Memorandum of Understanding (Hereinafter referred to as 'MOU') is made between

National Institute of Technology, Manipur (hereinafter referred to as 'NIT, Manipur')

AND

The All India Institute of Medical Sciences, Bhopal (hereinafter referred to as 'AIIMS, Bhopal')

WHEREAS NIT, Manipur is an autonomous Institute of National importance administered by the Director of the Institute under the direct supervision of Board of Governors (BOG) headed by The Chairman of the Board of Governors with the objective a) To nurture and develop talented young minds, encouraging creativity with academic excellence b) To encourage faculty and students to conduct research of international standard c) To provide a platform to young entrepreneurs and technocrats to experiment their dreams and aspirations. The Institute being accorded the status of "An Institute of National Importance" aspires to be a knowledge hub for the region.

WHEREAS AIIMS, Bhopal is an autonomous Institute of National Importance (INI) functioning under the PMSSY Division of Ministry of Health and Family Welfare (MoHFW) with the objectives of a) correcting regional imbalances in the availability of affordable and reliable tertiary healthcare services b) augmenting facilities for quality medical education to create a critical mass of healthcare professionals, and c) conducting research in the country relevant to the area. The institute is expected to absorb talent, provide highly trained medical professionals for the country and conduct research on national and regional health problems.

HEREINAFTER jointly referred to as '**PARTIES**' to this MOU,

DESIROUS of intensifying cooperation and collaboration aimed at improving, strengthening and promoting relations between the two respective institutions and of establishing appropriate working arrangements for the satisfactory implementation of this MOU;

HAVE REACHED THE FOLLOWING UNDERSTANDINGS:

ARTICLE I: PURPOSE/OBJECTIVE

Both institutions hereby express their intention to promote cooperation between academic members, students and research groups.

ARTICLE II: SCOPE OF COOPERATION

Within the framework of the fields of common interest, both institutions will abide by the following general principles of consideration:

1. promoting and encouraging the exchange of academic staff, MSc students and PhD Scholars
2. collaborate and resource sharing, including faculty experts to participate in joint consulting and research projects as per the guidelines of both Institutes.
3. exchanging invitations to scholars and students to participate in academic activities such as exhibitions, lectures, conferences, symposium and workshops
4. facilitating the exchange of experiences and opinions for mutual benefit
5. promoting and encouraging activities of joint research in fields of common interest.
6. exchanging research and educational data, where possible, to be used for education and training purposes.
7. facilitating collaboration in joint social initiatives.

ARTICLE III: MODALITIES OF COOPERATION

The precise nature and specific details of the collaboration between the two institutions, including topics of common activities and formalities concerning visits, exchanges, and other forms of cooperation, will be defined by additional stipulations which will be prepared by authorized official representatives of both institutions who wish to collaborate under the overall framework of this agreement.

ARTICLE IV: GOVERNANCE AND MANAGEMENT

The Parties shall establish a Joint Working Group (JWG) with mutual consent, consisting of officials from each institute. The JWG shall convene a meeting at least every 6 months or as required. The sessions may be held alternatively between each institute or as mutually agreed. The expenses related

to, but not limited to, travel, local transportation, boarding and lodging etc. shall be borne by the visiting Party whereas the organizational expenses of the JWG meetings shall be borne by the Host Party. The JWG shall be the final decision-making body of the program and will be responsible for:

- a) Providing an overview and overall direction to the program;
- b) Review of the progress and recommending oversight and support mechanisms to both Parties for the smooth operation of the program;
- c) Identification of common topics of interest of particular strategic importance to the research cooperation between the Parties and shall propose/prioritize topics for joint funding;
- d) Development and running of academic courses on topics of mutual interest

The JWG shall periodically update on the progress made on this MOU to the Institutional Heads of each Party or any other body authorized by them.

ARTICLE V: INTELLECTUAL PROPERTY RIGHTS (IPR), COMMERCIALIZATION AND PUBLICATIONS INCLUDING AUTHORSHIP (IF ANY)

Intellectual Property rights:

- a) The Parties shall ensure the appropriate IPR protection of each other on IPRs generated through activities arising out of mutual cooperation;
- b) In case of research results obtained through joint activities, the grant of IPR will be sought by both the Parties jointly and once granted these rights will jointly be owned by both parties;
- c) the Parties shall not assign any rights and obligations arising out of the IPR generated pursuant to cooperation activities under this MOU to any third party without the prior written consent of the other Party.

Commercialization:

In case of research results obtained through joint activities under this MOU, both Parties shall apply as co-applicants and co-investigators for the protection of IPR subject to exclusive rights of both Parties to commercialize the technology or product(s).

Publications:

- a) Any research publications/ documents and /or any other paper arising out of the joint work conducted by the participants pursuant to this MOU must acknowledge the IIM Indore -AIIMS Bhopal partnership and will be jointly authored by the Parties.

- b) The use of the name, logo and/or any official emblem of the Parties on any publication/document and/or paper pursuant to this MoU shall require prior permission of both the Parties and they should not be used/misused for any commercial activity or marketing of anykind.

ARTICLE VI: CONFIDENTIALITY

- a) During and thereafter the term of this MOU, each Party, their affiliates or employees shall not disclose any confidential information of the other Party on dissemination of the instance of the MoU;
- b) Neither Party shall make any public announcement related to the scientific research outcome, or commercialization for work which has arisen out of the joint activities under this MoU, without the prior written consent of the other Party to protect their intellectual property rights.
- c) All information and documents to be exchanged pursuant to the MOU will be kept confidential by the Parties and will be used subject to terms as each Party may specify.
- d) The Parties will not use the information any research publication/document and/or any other paper for purposes other than that specified without the prior written consent of the other Party
- e) Such information shall not be transmitted or shared with any Third Party unless agreed by both or all Parties.

ARTICLE VII: ETHICAL ISSUES/ TRANSFER OF BIOLOGICAL MATERIAL/DATA SHARING

- a) Both Parties mutually agree on the importance of the protection of human and animal subjects in any health program/research. In recognition of this, both Parties have adopted laws and regulations on the protection of human and animal subjects, including the transfer of biological material and intend to follow the same in accordance with the applicable laws, regulations, and policy of each Party.
- b) Matters related to the transfer of biological material and research projects shall receive prior approval on each side as per the existing rules and regulations of each Party.
- c) Both Parties agree with each other that the investigators in pursuant of the work under this MOU can share their published findings with the relevant institutions articulating how the work informs policy and practice in both the Institutes

- d) The Parties encourage the investigators in pursuant of the work under this MOU to put the data arising from the funded work into open access.

ARTICLE VIII: DISPUTES AND THEIR RESOLUTION

Any dispute arising out of the interpretation or implementation of this MOU shall be settled amicably through consultation and negotiations between the members of JWG as authorized by the Parties. If it fails to settle amicably within JWG after 3 rounds of talks/negotiations, the MOU can be terminated. In disputes related to the IPRs or their commercialization, both parties shall mutually decide the procedure for the appointment of an arbitrator for dispute resolution and the same shall be binding to all the parties. The place of arbitration preferably shall be Bhopal (M.P.) / or any other place agreed by the parties and is subjected to the territorial jurisdiction of District Court Bhopal. The language of the arbitration shall be English and any cost arising out of the arbitration shall be borne by the investigators pursuant to joint research works under this MOU.

ARTICLE IX: EXCLUSIVITY

The Parties understand that this relationship is not exclusive and that entering into this MOU will not prevent either Party from associating with any other Party for the purpose of conducting similar programs.

ARTICLE X: OBLIGATIONS

This MOU is not intended to create a binding, legal or financial obligations between the Parties.

ARTICLE XI: VALIDITY

This MOU is written and signed in English in two copies. The present MOU will come into force as soon as it has been signed by the authorized representatives of the two institutions. It will remain in force for five years from the date of execution and may be renewed for an additional five years upon mutual consent of the parties.

ARTICLE XII: AMENDMENT

Amendments, revisions or modifications to this MOU may be proposed by either Party at any time during the term of the MOU and shall be effective from the date of the written agreement signed by both parties. These amendments shall serve as integral parts of this MOU.

ARTICLE XIII: TERMINATION

The agreement may be terminated by the authorized official representative of either institution by written notice. Such notice must be given at least three months before it becomes effective. Such termination shall not affect the completion of any activity underway at the time or the rights of individuals exchanged under this agreement, prior to the notice of termination.

In Witness thereof, the duly authorized representatives of the Parties have signed this MOU.

This MOU is signed in two originals in English on _____ (Date) in _____ (City, Country)

On behalf of

Name of Party 1

Name of Signing Authority

Designation

Name of Party 1

Date:

Witnesses

1. Name, Designation & Signature

2. Name, Designation & Signature

On behalf of

Name of Party 2

Name of Signing Authority

Designation

Name of Party 2

Date:

Witnesses

1. Name, Designation & Signature

2. Name, Designation & Signatur

Annexure I: Self-Assessment Checklist for contents of MOU/MOA

S. NO.	CONTENT	YES/ NO	CLAUSE/ ARTICLE	PAGE No.
1	The official Logo/emblem of all Parties			
2	Preamble of all Parties is stated			
3	Purpose/Objective of the MOU/MOA is explicitly stated			
4	Scope of Co-operation is mentioned			
5	Modalities of Cooperation are stated			
6	Funding arrangements, if applicable, are mentioned			
7	Mutual topics of collaboration, if any, are identified and stated			
8	Modalities for governing or managing the scope of cooperation are stated			
9	Ownership/ authorship issues related to Intellectual property rights (IPR), commercialization and Publications are carefully worked out and stated			
10	Conditions to use the name, logo and/or official emblem of the other Party			
11	Maintenance of Confidentiality of the Other Party			
12	Terms and conditions related to the Ethical issues/ transfer of biological material/data sharing, if applicable, have been worked out between the Parties and stated in the MOU			
13	Mechanism of dispute resolution is stated			
14	The MOU is not prohibitive on any Party with respect to undertaking/conducting similar programmes/ research/academic activities with any other Institution/organisation			
15	Obligations on each Party have been worked out and stated in the MOU/MOA			
16	Duration of validity is mentioned			
17	Policy of amendment is mentioned			
18	Conditions of termination are mentioned			
19	MOU recognises the authorised signatories			

Annexure II: List of Documents to be submitted with the proposal for Memorandum of Understanding/Agreement (MOU/MOA) with a Private Entity/ Non-Governmental Organization (NGO)

S. NO.	DOCUMENT	YES/ NO	ANNEXURE
1	Company/NGO Registration Certificate		
2	Memorandum Of Association And Bye-Laws		
3	Whether NGO is empanelled with NITI AAYOG or any other Ministry of Central/State Government		
4	Unique ID Number allotted by NITI AAYOG		
5	Work Experience of Last 5 years		
6	Work Experience of last 5 years with any Government organization/department		
7	Details of Annual Financial Statements of the last 5 years		
8	Details regarding the source of funding		
9	Approval letter of Health Ministry's Screening Committee (HMSC), ICMR Headquarters, New Delhi for all biomedical and health research proposals involving foreign assistance and/or collaboration		

Kindly note that this list of documents is tentative and any other document, as the Competent Authority may deem fit, may be asked for.