MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY
JAIPUR-302017

AGENDA FOR THE FORTY-EIGHTH SENATE MEETING

Meeting Number : **48th**

Venue : **Niti Sabhagar, Prabha Bhawan**

Date : **February 10, 2023 (Friday)**

Time : **4.30 PM onwards**

मालवीय राष्ट्रीय प्रौद्योगिकी संस्थान जयपुर
MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

AGENDA FOR THE 48TH MEETING OF THE SENATE TO BE HELD ON 10TH FEBRUARY 2023 (FRIDAY) AT 4.30 PM

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Agenda for the 48th Meeting of the Senate
(to be held on 10th February, 2023 at 4:30 PM in the Niti Sabhagar, Prabha Bhawan, MNIT, Jaipur)

Item No. 48-1.0: To confirm the minutes of the 47th meeting of the Senate held on 26th September, 2022.

The minutes of the 47thmeeting of the Senate held on 26th September, 2022, approved by the Chairperson, Senate were circulated to the members only one comment from Humanities & Social Sciences Department was received regarding criteria for making two sections of the language course of UG First year. The correctness of the minutes checked was after which draft minutes were approved by the Chairman Senate. The minutes may be confirmed.

The minutes are placed before the Senate for confirmation at **Annexure-A (Pg. 01 to 06)**.

Item is placed for confirmation.

Item No. 48-2.0: To note the "Action Taken" on the decisions taken in the 47th meeting of the Senate.

Action Taken on the decisions made in the 47th meeting of the Senate

ACTION TAKEN REPORT (47th Senate Meeting)

Item No.	Particulars	Decision	Action Taken
47-1-0	To confirm the minutes of the 46th meeting of the Senate held on August 17, 2022.	The comments received from three members were discussed, and it was decided to confirm the minutes as circulated.	Noted

47-2-0	To note the Action Taken on the decisions taken in the 46th meetings of the Senate.	The Senate noted the action taken report of **46th** meeting. Regarding the actions for Item No. 46-3.2, 46-3.3 and 46-3.9, it was directed that recommendations of the respective committees may be placed in next Senate meeting.	Regarding Item No. 46.3.2, 46-3.3 & 46-3.9 the recommendations of are placed at agenda items (48-3.5, 48-3.6 & 48-3.8) respectively
47-3.0	Items for consideration		
47-3.1	To consider the list of the students eligible for award of degree in UG, PG and Ph.D. programmes in the forthcoming Convocation.	**Resolution No. Senate-47/2022/01**: The Senate approved the lists of eligible students for the award of. B.Tech./B.Arch./M.Tech./M.Plan./ M.Sc./ MBA and Ph.D. and recommended the same for consideration and approval of BoG. Further, the Senate authorized the Chairman, Senate to approve additional names, if any, of eligible students, who may complete the requirements for award of degree for the forthcoming 16th Convocation, if no Senate meeting takes place before the Convocation.	Noted. The list of students who have completed the requirements for award of UG/PG/PhD degree after 47th Senate meeting is placed at agenda item No. 48-3.1
47-3.2	To consider the names of the students for award of Director's Medals in the respective UG and PG programmes.	**Resolution No. Senate-47/2022/02**: The Senate approved the names of the students for award of Gold Medal who have secured highest CGPA in their respective programs and recommended the same for consideration and approval of BoG. The Senate further resolved to rename the Gold Medals as Director's Gold Medals in UG & PG programmes from 16th Convocation onwards. The Senate also resolved to constitute a committee of the following members to analyze the requirement/possibility of introducing requirement of minimum CGPA and minimum number of students in a programme for award of Director's Gold Medals from the 17th Convocation onwards.	Noted. In the 50th Board of Governors meeting, the Board resolved that the name of UG Gold Medals shall be the Director's Gold Medals and the PG Gold Medals shall be the Board of Governor's Gold Medals.

		(i) Prof. Y. P Mathur, Convener (ii) Prof. A. B. Gupta, Member (iii) Prof. Urmila Brighu, Member	Recommendation of the committee regarding the requirement of minimum CGPA and minimum number of students in a programme for award of Director's Gold Medals and Board of Governor's Gold Medals are placed at Agenda **Item No. 48-3-3.**
47-3.3	To consider institution of awards for graduating students on the basis of overall performance in curricular as well as extracurricular activities.	**Resolution No. Senate-47/2022/03**: The Senate recommended the institution of following two Gold Medals for graduating students on the basis of overall performance in curricular as well as extracurricular activities for consideration and approval of BoG: (1) 'President's Gold Medal' for best overall performance among all Under Graduate students of the graduating batch (2) 'Board of Governors' Gold Medal' for best overall performance among all Post Graduate students of the graduating batch Further, while appreciating the efforts of Convocation committee for Awards and Honors w.r.t. proposing the evaluation matrix, a committee comprising of the following was constituted to relook into the matrix and develop objective criteria and procedure for identifying student for each of the above two Gold Medals: (i) Prof. G. D. Agarwal, Convener (ii) Prof. Kanupriya Sachdev, Member (iii) Dean-SW, Member	The Board appreciated the initiative for instituting the President's Gold Medal for graduating students on the basis of overall performance in curricular as well as extracurricular activities, the Board suggested to work out guidelines for the same to be considered in the next BoG. The decision of the Board was communicated to the committee and the recommendation of the committee are awaited.

		The committee was suggested to look into the criteria and method adopted by other premier Institutes in the country.	
47-3.4	To consider the Convocation Ordinance of MNIT Jaipur.	**Resolution No. Senate-47/2022/04**: The Senate approved and recommended for consideration of the BoG, the Convocation Ordinance of MNIT Jaipur with the inclusion of conferring the two new Gold Medals approved under Item No. 47-3.3 in the Ordinance.	The Item was placed in 50th Board meeting under item No. **50-5.22** the Board appreciated the efforts and approved the Convocation Ordinance as Convocation guidelines.
47-4.0	Items for Ratification		
47-4.1	To ratify nomination of Senate Nominee to the Board of Governors.	The Senate ratified the nomination of following faculty members to the Board of Governors for a period of two years: (1) Prof. Ravindra Nagar, Professor, Department of Civil Engineering. (2) Dr. C. Periasamy, Assistant Professor, Department of Electronics and Communication Engg. Further, a committee comprising of the following was constituted to propose a method of identifying seniority among Assistant Professors at the Institute: (i) Prof. Mahender Choudhary, Convener (ii) Prof. Vijay Laxmi, Member (iii) Registrar, Member	Recommendations of the committee are awaited.
47-5.0	Items for Reporting.		
47-5.1	To note the minutes of 35th meeting of SUGB.	Noted	No action required

47-5.2	To note the minutes of 36th meeting of SUGB.	Noted	No action required
47-5.3	To note the minutes of 53rd meeting of SPGB.	Noted	No action required
47-5.4	To note the minutes of 28th & 29th meeting of Academic Affairs Committee meeting held on 12th August 2022 and 16th September respectively.	Noted	No action required
47-5.5	To note the minutes of meeting of the unfair means committee held on 16th September 2022.	Noted	No action required
47-6.0	Any other items with permission of Chair.		
47-6.1	To consider the recommendations of DPGC of the Department of Management Studies regarding mercy appeals received for relaxation in CGPA requirement for the award of degree.	**Resolution No. Senate-47/2022/05**: The Senate approved the recommendation of SPGB and admitted the mercy appeals of following students of Management Studies for award of degree since presently the institute is following the criteria of minimum 5.5 CGPA for award of PG degree: (1) Daksh Moolchandani (2020PBM5437) CGPA 5.88 after meeting credits requirements for award of degree (2) Amisha Kumawat (2020PBM5457) CGPA 5.65 after meeting credits requirements for award of degree	Implemented vide Office Order No. F4/S-V-1/20-21-Acad (46-Senate)/ 1893 dated 06-10-2022 has been issued.
47-6.2	To consider the recommendations of DPGC of the Department of Management Studies regarding mercy	**Resolution No. Senate-47/2022/06**: The Senate was apprised that due to Covid-19 the semester examinations were overlapped with next semester registration, and students were permitted to register in next semester before the deceleration of result of 1st semester.	Implemented vide Office Order No. F4/S-V-1/20-21-Acad (46-Senate)/ 1894 dated 06-10-2022 has been issued.

	appeals received for relaxation in CGPA requirement for semester promotion.	The Senate resolved that following students may be given an opportunity to re-register in 1st Semester and repeat all the courses. Their eligibility for promotion to next semester will be evaluated on the basis of their performance after re-registration: (1) Madhu Lata (2021PBM5053) (2) Garima Kumawat (2021PBM5054) (3) Anjali Singh (2021PBM5056)	
47-6.3	To consider the recommendations of DPGC of the Department of Mathematics regarding mercy pleas received for relaxation in CGPA requirement for award of degree.	**Resolution No. Senate-47/2022/07**: The Senate approved the recommendation of SPGB and allowed the mercy appeals of following students of Mathematics Department for award of degree since presently the institute is following the criteria of minimum 5.5 CGPA for award of PG degree: (1) Priya Meena (2020PMA5081) CGPA 5.92 after meeting credits requirements for award of degree (2) Lokesh Kumar Meena (2019PMA5690) CGPA 5.85 after meeting credits requirements for award of degree	Implemented vide Office Order No. F4/S-V-1/20-21-Acad (46-Senate)/ 1895 dated 06-10-2022 has been issued.
47-6.4	To consider the recommendations of DPGC of the Department of Mathematics regarding mercy pleas received for relaxation in CGPA requirement for semester promotion.	**Resolution No. Senate-47/2022/08**: The Senate was apprised that due to Covid-19 the semester examinations were overlapped with next semester registration, and students were permitted to register in next semester before the deceleration of result of 1st semester. The Senate resolved that following students may be given an opportunity to re-register in 1st Semester and repeat all the courses. Their eligibility for promotion to next semester will be evaluated on the basis of their performance after re-registration: (1) Hemraj Lamba (2021PMA5574) (2) Prachi Agarwal (2021PMA5559)	Implemented vide Office Order No. F4/S-V-1/20-21-Acad (46-Senate)/ 1896 dated 06-10-2022 has been issued.

		(3) ShivamYadav (2021PMA5577) (4) Manvendra Sharma (2021PMA5554) (5) Naveen Mahawar (2021PMA5590) (6) Neeraj Meena (2021PMA5593)	
47-6.5	To consider the recommendations of the committee constituted to examine the proposal of approval of 03 (three) Institute Scholarships per faculty instead of 02 (two) for the Department of Humanities and Social Sciences, in consistency with the other Departments at MNIT Jaipur.	**Resolution No. Senate-47/2022/09**: The Senate resolved that all departments and centres of the Institute shall have equal slots per faculty with Institute fellowship.	Implemented, vide Office Order No. F4/S-V-1/20-21-Acad (46-Senate)/ 1897 dated 06-10-2022 has been issued.
47-6.6	To consider the Curricular Structure of all under graduate programmes and detailed syllabus of I year B.Tech and B. Arch programmes.	**Resolution No. Senate-47/2022/010:** The Senate approved the Scheme and syllabus of 1st year with following decisions: 1. Physics department will provide alternative names to courses Physics Paper I and Physics Paper II. 2. The criteria, recommended by SUGB, for dividing the students in the courses English Communication Skills (Basic) and English Communication Skills (Advanced) was approved for this year. The same is to be reviewed before admissions in next year.	Implemented from academic year 2022-23

Item No. 48-3.0: Items for consideration.

Item No. 48-3.1 To consider the additional list of the students eligible for award of degree in UG, PG and Ph.D. programmes in the forthcoming Convocation.

The additional list of the students eligible for award of degree in UG, PG and Ph.D. programmes in the forthcoming Convocation was approved in respective meeting of SPGB and SUGB and are placed at **Annexure-B (Pg. 07 to 08).**

Item is placed for consideration and approval.

Item No. 48-3.2 To consider relaxation in percentage of marks/CGPA for admission to Ph.D. programmes for person with disabilities.

As per PG rules & regulation of the Institute the SC/ST candidates are given relaxation in percentage of marks/CGPA in qualifying degree for admission to Ph.D. programmes of the Institute. It was proposed that same relaxation may also be extended to persons with disabilities seeking admission in the institute in Ph.D. programmes.

The matter was discussed in SPGB in its 54th meeting the sub-committee approved and recommended that the same relaxation may also be extended to persons with disabilities seeking admission in the institute in Ph.D. programmes as other IITs and NITs also offer relaxation in qualifying degree for admission to Ph.D. programme to persons with disabilities.

Copy of information brochure (relevant page) of CCMT 2022, NIT's & IIT are placed **at Annexure-C (Pg. 09 to 16)**.

Item is placed for consideration.

Item No. 48-3.3 To consider the recommendation of committee constituted to analyze the requirement/possibility of introducing requirement of minimum CGPA and minimum number of students in a programme for award of Director's Gold Medals and Board of Governors Gold Medals from the 17th Convocation onwards.

A committee was constituted in 47th Senate meeting to analyze the requirement/possibility of introducing requirement of minimum CGPA and minimum number of students in a programme for award of Director's Gold Medals and Board of Governors Gold Medals (as per 50th BoG decision) from the 17th Convocation onwards. The committee discussed the matter and recommended the following:

For Director's Gold Medals for academic toppers of UG programmes:

Minimum CGPA: 9.0
Minimum number of students admitted in the batch: 30

For Board of Governor's Gold Meals for academic toppers of PG programmes:

Minimum CGPA: 8.5
Minimum number of students admitted in the batch: 10

Item is placed for consideration.

Item No. 48-3.4 To consider academic research collaboration between MNITJ-IIT Madras and IIT Delhi.

Proposal have been received from IIT Madras and IIT Delhi for signing MoU with MNITJ for Academic and Research collaboration which shall include:

- Academic and Research collaboration in the areas of mutual interest.
- Exchange of academic information, scholarly information, materials, and publications.
- Exchange of students and faculty.
- Sponsorship of cooperative seminars, workshops, and other academic meetings.

The draft MoU's is placed as **Annexure –D (Pg. 17 to 29).**

Item is placed for consideration.

Item No. 48-3.5 To consider the recommendation of the review committee constituted to review the UG programs.

A committee was constituted, as per the decision of the Senate in its 46th meeting, vide office order No. F4/S-V-1/20-21-Acad (46-Senate)/1772 dated 02-09-2022 to revisit intake of all UG Programs of the Institute and examine possibility of starting new UG Programs. After discussion with the departments/centres of the Institute the committee has recommended for reduction of intake of 3 UG programmes and staring four new UG programmes.

Based on the recommendation of the committee the current and proposed intake for various UG programmes to be offered in the year 2023-24 and reduction in the intake of three UG programmes with detailed recommendation of the committee is placed at **Annexure-E (Pg. 30 to 141).**

Item is placed for consideration.

Item No. 48-3.6 To consider the recommendation of the PG program review committee constituted to review the PG programs.

As per the direction of the Senate in its 46th meeting a committee was constituted vide office order No. F4/S-V-1/20-21-Acad (46-Senate)/1770 dated 02-09-2022 to review the PG Programs of the Institute. Committee after deliberations finalized the following recommendations for PG programs in the current scenario –

1. Maximum number of PG programs that each Department/centre can offer be restricted to 03. The departments/centres which have more than three may choose the best running PG programs or merge to bring the number to three.
2. PG Programs where number of filled seats are less than 07 in last two academic years to go for zero semester for next two academic years. The affected department/centre may offer a new program or have a major revision.
3. Intakes in PG Programs where filled-in seats are less than 75% in last two academic years should be capped either to 15 or 22 (including all type of categories like CCMT, part time, industry sponsored).
4. An exercise to be done at institute level to identify overlapping of courses/programs within the department/centre and also across the various departments or centres.
5. A thought may be given to attach PG programs offered currently at different centres with Department(s) for academic purposes.

The minutes of meeting is placed at **Annexure –F (Pg. 142 to 143)**

Item is placed for consideration.

Item No. 48-3.7 To consider the guidelines & modalities for starting Integrated Master + Ph.D. Dual Degree (MPDD) program.

Following three departments have submitted a proposal of dual degree programme:

1. Department of Architecture and Planning
2. Department of Electronics and Communications

3. Centre for Energy and Environment

A committee was constituted to frame the guidelines and modalities to be adopted by the department for starting Integrated Master + Ph.D. dual degree (MPDD) programmes. The SPGB in its 54th meeting approved and recommended the proposed guidelines and modalities.

The same are placed at **Annexure-G (Pg. 144 to 146).**

Item is placed for consideration and approval.

Item No. 48-3.8 To consider the proposals for creation of (a) Centre for Rural Development, (b) Centre for Cyber Security.

The Department of Civil Engineering has submitted a proposal in the given format for starting a new Centre of Excellence: "Centre for Rural Development"

The Department of Computer Science and Engineering has submitted a proposal in the given format for starting a new Centre of Excellence: "Centre for Cyber Security"

Details of both the proposals are placed at **Annexure-H (Pg. 147 to 194).**

Item is placed for consideration.

Item No. 48-3.9 To consider the equivalence of courses of Old Scheme for UG programmes with courses of New Scheme for UG programmes.

The institute has implemented the new UG scheme from the Academic Year 2022-23. Some students of II/III/IV year have secured FA/FP grade in different courses of 1st year and they want to register for the back papers.

A comparison of the courses of old scheme with the courses of new scheme yields following categories

Category A: Courses of old scheme are continued in the new scheme. The credits of these courses in both the schemes are same. However the course code and/or course title has been modified. The list is given in the table 1 of **Annexure-I (Pg. 195).**

It is proposed that students having back papers in these papers of old scheme may be allowed to register for the courses of the old scheme, but he will attend classes/examination of the courses of the new scheme and the grade earned in the courses of new scheme may be counted against the courses of old scheme.

Category B: Courses of old scheme are continued in the new scheme but the credits of these courses in the new scheme has been reduced by one credit. The course code and/or course title and/or syllabus has/have also been modified. The list is given in the table 2 of **Annexure-I (Pg. 196).**

It is proposed that students having back papers in these papers of old scheme may be allowed to register for the courses of the old scheme, but he will attend classes/examination of the courses of the new scheme. The course coordinator will either give the extra reading material (for self-study) along with extra assignments or the student may be asked to do some mini project. The evaluation of extra work will be carried out separately and will be considered for final evaluation as well as award of grade. The grade earned in the courses of new scheme will be counted against the courses of old scheme.

Category C: Courses of old scheme are continued in the new scheme but the credits of these courses in the new scheme has been reduced by more than one credit. The course code, course title and syllabus have also been modified. The list is given in the table 3 of **Annexure-I (Pg. 196).**

It is proposed that students having back papers in these papers of old scheme may be allowed to register for the courses of the old scheme, but he will attend classes/examination of the courses of the new scheme. In addition the students will be required to complete either a mini project or complete a MOOC course as per the recommendation of the DUGC of the department offering the course. The evaluation of mini project will be carried out separately. Evaluation of mini project or grade/score earned by the student in MOOC course will be considered for final evaluation as well as award of grade. The grade earned in the courses of new scheme will be counted against the courses of old scheme.

Item is placed for consideration.

Item No. 48-3.10 To consider the proposal to start a 2-Year Online Executive MBA program by Department of Management Studies (DMS) in association with Continuing and Digital Education Centre (CDEC), MNIT Jaipur.

A proposal was received from Department of Management Studies to start a 2-Year Online Executive MBA program in association with Continuing and Digital Education Centre (CDEC), MNIT Jaipur. The SPGB in its 54th meeting approved the proposal in principle.

The proposal with scheme is placed at **Annexure –J (Pg. 197 to 201).**

Item is placed for consideration.

Item No. 48-3.11 To consider the Joint Supervision of Ph.D. student Mr. Sandeep Shukla (2020RME9599).

The request of joint supervision was placed in the DPGC meeting dated 27-07-2022 of Mechanical Engineering Department. The DPGC rejected the request of joint supervision of Dr. Rohit Mishra of Engineering College Ajmer as the Engineering College Ajmer as per the previous guidelines for addition of joint supervisor.

Now, as per the new guidelines approved in 46th meeting of the Senate held on 17th August 2022 the DPGC again considered the request and recommended for addition of joint supervision of Dr. Rohit Mishra of Engineering College Ajmer.

It is also be noted that the comprehensive examination of Mr. Sandeep Shukla (2020RME9599) has already been completed on 28-07-2022 and as per the PG RR "addition of joint supervisor will not be encouraged normally after the comprehensive exam and state of the art seminar".

The SPGB in its 54th meeting recommended to allow addition of joint supervisor after comprehensive examination, as a special case.

Item is placed for consideration.

Item No. 48-3.12 To consider the mercy appeal received from students through proper channel for relaxation in CGPA requirement for semester promotion.

With reference to 'mercy policy and mechanism' for the purpose of continuation of semester promotion and award of UG, PG and PhD. degree. The following applications were received through respective programme advisors and DPGCs for mercy appeal for relaxation in CGPA requirement for the semester promotion. The mercy appeal were placed in 54th meeting of SPGB held on 11th January 2023 the recommendation are as follows:

S. No.	Name & ID	Justification, if any and recommendation of DPGC	Recommendation of DPGC	Justification of SPGB	Recommendation of SPGB
1.	Mr. Abhishek Mehar (2022PBM5025)	Due to medical complications related to grandfather	Not recommended	Recommended due to being close to meeting minimum requirement	Recommended

	Full Time, CGPA 5.32				
2.	Mr. Vivekanand Prajapati (2022RME9079) Full Time CGPA 6.5	Due to health issues could not perform well in 1st semester of Ph.D. recommended on medical grounds	Recommended	There is no proper ground of mercy	Not recommended
3.	Mr. Sachin Rolania (2022PPH5559) CPGA 5.0	Graduation in Hindi Medium not able to understand the course in English medium	Recommended	There is no proper ground of mercy	Not recommended
4.	Ms. Megha Kumari (2022PEV5148) CGPA 5.47	Application for mercy chance is forwarded	Recommended	There is no proper ground of mercy. The recommendation of DPGC was not supported with documents and justification for mercy appeal.	Not recommended (DPGC has recently submitted additional justification stating that the student belongs to very poor family and has a minor deficiency of 0.03 for meeting minimum CGPA criteria)

Item is placed for consideration.

Item No. 48-3.13 To consider mercy request of Gaurav Jain (2019UCE1044) regarding waiver of no backlog requirement for going on internship.

As per the internship guidelines for UG students, a student willing to proceed on semester long internship in the 8th semester, must complete all his course work up to 7th semester without any backlogs.

A student Gaurav Jain (2019UCE1044) has been offered an internship at Flipkart (Axxela Research & Analytics Private Limited) from 3rd January 2023. However, the student has one back paper (CET325-Design of Masonry Structures) at the end of his 7th semester. Therefore, the student has not been permitted to go for the internship.

Gaurav Jain has submitted a mercy appeal through program advisor to grant waiver from the condition of 'NO ACTIVE BACKLOG" to proceed for internship in 8th semester. Recommendation of the DUGC and SUGB has been given in the table below

S. No.	Name & ID	Justification of DUGC	Recommendation of DUGC	Justification of SUGB	Recommendation of SUGB
1.	Mr. Gaurav Jain (2019UCE1044)	Due to chicken pox he could not prepare in supplementary examination	Recommended	Waiver is not permitted for the Backlog of VI Semester	Not Recommended

Item is placed for consideration.

Item No. 48-3.14 To consider the mercy request for waiver of minimum attendance requirement of Mr. Viral Achhwan (ID2021UAR1259).

A request was received from Mr. Viral Achhwan (ID2021UAR1259) regarding waiver of minimum attendance requirement. He was regular in Odd Semester but he was on medical leave for 37 days due to jaundice. He submitted a medical certificate from 30/08/2022 to 05/10/2022.

DUGC of Architecture and Planning Department recommended that the current attendance record and performance of the student after joining the department may be considered for mercy appeal. The case was recommended for mercy appeal based on satisfactory attendance record and present performance as reported by concerned course coordinators.

The SUGB in its 38th meeting approved and recommended the case if the attendance of the student is more than 80% after availing medical leave on joining the Institute. The same has been checked from the department it was found that the attendance after joining post medical leave is more than 80%.

Item is placed for consideration.

Item No. 48-3.15 To consider the mercy request of Ph.D. student Mr. Sagar Mal Nitharwal (ID: 2019RCP9147) Department of Computer Science & Engineering.

Mr. Sagar Mal Nitharwal was terminated from Ph.D. program on account of cumulative six Xs in two consecutive semesters i.e. 3rd and 5th (4th Semester being withdrawal) towards progress reports grades. The supervisor and the DPGC of the Department of Computer Science and Engineering recommended to consider his request to continue his Ph.D. work on mercy due to medical issues with the student. SPGB discussed the mercy appeal of Ph.D. student Mr. Sagar Mal Nitharwal (ID: 2019RCP9147) and recommended that since the discontinuity in work has been of significant duration and comprehensive exam has not taken place yet, the student may be allowed to re-register to the Ph.D. programme. The credits earned by the student for the course work completed by him may be counted towards the new registration, after approval of the competent authority.

Item is placed for consideration.

Item No. 48-3.16 To consider the mercy request of Ph.D. student Mr. Umardaraj (2013RME9065) to resume his registration in Ph.D. Programme and give extension-time to complete his remaining Ph.D. work (Department of Mechanical Engineering).

Mr. Umardaraj (2013RME9065) discontinued his Ph.D. research work and not registered after December 2019 due to health issues. The supervisor, DREC and DPGC of Department of Mechanical Engineering recommended to permit extension of at least one year to complete his remaining Ph.D. research work. SPGB discussed the mercy appeal and recommended that since the discontinuity in work has been of significant duration and problem definition is almost 9 year old, and the supervisor himself has declared that it is going to take at least one year, which indicates it may take even more than one year as well, the student may be allowed to re-register to the Ph.D. programme. The credits earned by the student for the course work completed by him may be counted towards the new registration, after approval of the competent authority.

Item is placed for consideration.

Item No. 48-3.17 To consider the mercy request of M.Tech Students, Mr. Mukul Chaudhary (2021 PCV5354), Mr. Hemant Khatri (2021PCV5359) Mr. Chetram Meena (2022PCV5304), Department of Centre for Energy and Environment.

S. No.	Name & ID	Justification of DUGC	Recommendation of DUGC	Justification of SUGB	Recommendation of SUGB
1.	Mr. Mukul Chaudhary (2021PCV5354) CGPA 5.06	To repeat third semester M.Tech. (Renewable Energy)	Recommended	Allowed to repeat the dissertation I course in the current semester and they will register and complete their Dissertation II course in the Odd Semester 2023-24	Recommended
2.	Mr. Hemant Khatri (2021PCV5359) CGPA 5.31	To repeat third semester M.Tech. (Renewable Energy)	Recommended	Allowed to repeat the dissertation I course in the current semester and they will register and complete their Dissertation II course in the Odd Semester 2023-24	Recommended
3.	Mr. Chetram Meena (2022PCV5304) CGPA 3.17	To repeat first semester M.Tech. (Renewable Energy)	Recommended	Due to very poor performance in the 1st semester (CGPA 3.17)	Not Recommended

Item is placed for consideration.

Item No. 48-3.18 To consider the mercy request of M.Tech Students Mr. Roop Singh Meena (2022PES 5280), and Mr. Anirban Chatterjee (2022PSM5255) of Department of Electrical Engineering.

S. No.	Name & ID	Justification of DUGC	Recommendation of DUGC	Justification of SUGB	Recommendation of SUGB
1.	Mr. Roop Singh Meena (2022PES 5280) CGPA-4.00	Medical ground	Recommended	Due to absence of sufficient ground for mercy	Not recommended

2.	Mr. Anirban Chatterjee (2022PSM5255) CGPA-5.17	Medical ground	Recommended	Due to absence of sufficient ground for mercy	Not recommended

Item is placed for consideration.

Item No. 48-3.19 To consider the mercy request of M.Tech student Mr. Vinod Kumar Meena (ID: 2020PCT5315) Department of Civil Engineering.

The DPGC recommended to allow to get M.Tech. Degree with CGPA 5.92 to Mr. Vinod Kumar Meena (ID: 2020PCT5315). SPGB noted that the current requirement is a CGPA of 5.5 for the award of the PG degree, the SPGB recommended the mercy appeal of Mr. Vinod Kumar Meena (ID: 2020PCT5315) for the award of degree with CGPA of 5.92 as has already been done in similar cases under old CGPA requirement for award of degree.

Item is placed for consideration.

Item No. 48-4.0 Items for Ratification

Item No. 48-4.1: To ratify Ph.D. thesis evaluation of Hash Kumar Dixit (2014RME9552).

Harsh Kumar Dixit (2014RME9552) submitted his PhD thesis entitled '***Nonlinear Dynamic Analysis of Vertical Rotor Supported by Tilting Pad Journal Bearing***', on 21/06/2021. The thesis was sent for evaluation to foreign and Indian examiners.

Both examiners sent their reports with category II (c) remarks asking revision in the thesis. In response, the candidate submitted the revised thesis by addressing the queries raised by the examiners.

The Indian examiner reviewed the revised PhD thesis and examined the responses against the points raised by him and the thesis was recommended for the award in its present form (category I (a)) on 17/10/2022.

The revised thesis was also sent to the foreign examiner on 29/09/2022 through email but the email bounced back. Many attempts were made on the said email on 3/10/2022, 19/10/2022, even using different official mail IDs, but all the emails were bounced back. Attempts were also made telephonically to contact the examiner but the phone was not picked up.

With the approval of Chairman Senate the comments of foreign examiner were examined by the Indian examiner.

Item is placed for ratification.

Item No. 48-4.2: To ratify the minor changes in new scheme of B.Tech first semester.

As per the scheme of UG programs the theory courses have only lecture and tutorial components and practical courses have only laboratory component and they are separate. The same policy have been followed in the new UG scheme also approved by the Senate. The Department of Computer Science & Engineering has a programme core "problem solving with C" of 03 credits with LTP 2-0-2 having both theory and practical components in a course.

The department proposed to split the course (approved by Senate) into lecture and practical courses, problem solving with C of 2 credit with LTP 2-0-0 and Problem solving with C Lab of 1 credit with LTP 0-0-2 The same was approved by the Chairman Senate.

Revised scheme is placed at **Annexure –K (Pg. 202 to 204).**

Item is placed for ratification.

Item No. 48-5.0 Items for reporting

Item No. 48-5.1 To note the minutes of 37th and 38th meeting of SUGB.

The 37th meeting of Senate Undergraduate Board was held on 06th October, 2022 and 17th January 2023.

The minutes of both the meeting of SUGB are placed at **Annexure L (Pg. 205 to 213).**

Item is placed for informatiotn.

Item No. 48-5.2 To note the minutes of 54th and 55th meeting of SPGB.

The 54th and 55th meeting of Senate Postgraduate Board was held on 11th January 2023 and 02nd February 2023 respectively.

The minutes of the SPGB are placed at **Annexure-M (Pg. 214 to 222).**

Item is placed for information.

Item No. 48-5.3 To note the minutes of 30th, 31st and 32nd meeting of Academic Affairs Committee meeting held on 11th October, 2022, 23rd November, 2022 and 30th January 2023 respectively.

The 30th, 31st and 32nd meetings of Academic Affairs Committee (AAC) were held on 11th October, 2022, 23rd November, 2022 and 30th January 2023 respectively. Minutes of the meetings are placed at **Annexure N (Pg. 223 to 231).**

Item is placed for information.

Item No. 48-5.4 To note the minutes of meeting of the unfair means committee held on 23rd November 2022.

The minutes of meeting of the unfair means committee held on 23rd November 2022.

The minutes of the unfair means committee are placed at **Annexure -O (Pg. 232 to 233)**

Item is placed for information.

Item No. 48-5.5 To note the total number of students admitted in Undergraduate, Postgraduate and Ph.D. Programme during the Academic Session 2022-23.

The details of the students who have taken admission in **Undergraduate, Postgraduate and Ph.D.** programmes during the academic session 2022-23 in MNIT are as under:-

S. No.	Programme	Selection Agency	No. of students admitted
1.	Undergraduate	CSAB	875
		DASA	13
		MEA	01
		ICCR	04
2.	Post Graduate	CCMT	340
		Sponsored (FT)	10
		ICCR	02
		QIP (Poly)	02
		Part Time	05
		CCMN	116
		MBA	71
3.	Ph.D.	Full Time	98
		Part Time	20

Item is placed for information.

Item No. 48-5.6: To note the award of grades and credits for discipline and extra-curricular activities in new UG Scheme.

It was approved to include the credits of extra-curricular activities and discipline in the new UG scheme i.e. 3+4 credits for B.Tech. 3+5 for B.Arch. and award S and X grades without their inclusion in SPGA/CGPA calculation.

Item is placed for information.

Item No. 48-6.0 Any other items with permission of chair.

Annexures

Malaviya National Institute of Technology Jaipur

(An Institute of National Importance under Ministry of Education, Govt. of India)
JLN Marg, Jaipur-302017 (RAJASTHAN) INDIA

MINUTES OF 47TH MEETING OF SENATE HELD ON 26TH SEPTEMBER 2022

The 47th meeting of Senate was held in hybrid mode on 26th September 2022 from 4:00 PM in Niti Sabhagar, Prabha Bhawan of the Institute. The attendance list is enclosed as Annexure-A.

At the outset, the Chairman Senate in his opening remarks, welcomed all the members attending the meeting.

The agenda items were taken one by one, the resolutions of which are as follows:

Item No. 47.1.0	:	**To confirm the minutes of the 46th meeting of the Senate held on August 17, 2022 .** The comments received from three members were discussed, and it was decided to confirm the minutes as circulated.
Item No. 47.2.0	:	**To note the "Action Taken" on the decisions taken in the 46th meetings of the Senate.** The Senate noted the action taken report of 46th meeting. Regarding the actions for Item No. 46-3.2, 46-3.3 and 46-3.9, it was directed that recommendations of the respective committees may be placed in next Senate meeting.
Item No. 47-3-0	:	**Items for consideration**
Item No. 47-3.1	:	**To consider the list of the students eligible for award of degree in UG, PG and Ph.D. programmes in the forthcoming Convocation.** **Resolution No. Senate-47/2022/01**: The Senate approved the lists of eligible students for the award of. B.Tech./B.Arch./M.Tech./M.Plan./M.Sc./MBA and Ph.D and recommended the same for consideration and approval of BoG. Further, the Senate authorized the Chairman, Senate to approve additional names, if any, of eligible students, who may complete the requirements for award of degree for the forthcoming 16th Convocation, if no Senate meeting takes place before the Convocation.
Item No. 47-3.2	:	**To consider the names of the students for award of Director's Medals in the respective UG and PG programmes.** **Resolution No. Senate-47/2022/02**: The Senate approved the names of the students for award of Gold Medal who have secured highest CGPA in their respective programs and recommended the same for consideration and approval of BoG. The Senate further resolved to rename the Gold Medals as Director's Gold Medals in UG & PG programmes from 16th Convocation onwards. The Senate also resolved to constitute a committee of the following members to analyze the requirement/possibility of introducing requirement of minimum CGPA and minimum number of students in a programme for award of Director's Gold Medals from the 17th Convocation onwards. (i) Prof. Y. P Mathur, Convener (ii) Prof. A. B. Gupta, Member (iii) Prof. Urmila Brighu, Member

Mahendra

Item No. 47-3.3	:	**To consider institution of awards for graduating students on the basis of overall performance in curricular as well as extracurricular activities.** **Resolution No. Senate-47/2022/03**: The Senate recommended the institution of following two Gold Medals for graduating students on the basis of overall performance in curricular as well as extracurricular activities for consideration and approval of BoG: (1) 'President's Gold Medal' for best overall performance among all Under Graduate students of the graduating batch (2) 'Board of Governors' Gold Medal' for best overall performance among all Post Graduate students of the graduating batch Further, while appreciating the efforts of Convocation committee for Awards and Honors w.r.t. proposing the evaluation matrix, a committee comprising of the following was constituted to relook into the matrix and develop objective criteria and procedure for identifying student for each of the above two Gold Medals: (i) Prof. G.D. Agarwal, Convener (ii) Prof. Kanupriya Sachdev, Member (iii) Dean-SW, Member The committee was suggested to look into the criteria and method adopted by other premier Institutes in the country.
Item No. 47-3.4	:	**To consider the Convocation Ordinance of MNIT Jaipur.** **Resolution No. Senate-47/2022/04**: The Senate approved and recommended for consideration of the BoG, the Convocation Ordinance of MNIT Jaipur with the inclusion of conferring the two new Gold Medals approved under Item No. 47-3.3 in the Ordinance.
Item No. 47-4-0	:	**Item for Ratification**
Item No. 47-4.1	:	**To ratify nomination of Senate Nominee to the Board of Governors.** The Senate ratified the nomination of following faculty members to the Board of Governors for a period of two years: (1) Prof. Ravindra Nagar, Professor, Department of Civil Engineering. (2) Dr. C. Periasamy, Assistant Professor, Department of Electronics and Communication Engg. Further, a committee comprising of the following was constituted to propose a method of identifying seniority among Assistant Professors at the Institute: (i) Prof. Mahender Choudhary, Convener (ii) Prof. Vijay Laxmi, Member (iii) Registrar, Member
Item No. 47-5-0	:	**Item for Reporting**
Item No. 47-5.1	:	**To note the minutes of 35th meeting of SUGB.** Noted
Item No. 47-5.2	:	**To note the minutes of 36th meeting of SUGB.** Noted
Item No. 47-5.3	:	**To note the minutes of 53rd meeting of SPGB.** Noted

Item No. 47-5.4	:	**To note the minutes of 28th & 29th meeting of Academic Affairs Committee meeting held on 12th August 2022 and 16th September respectively.** Noted
Item No. 47-5.5	:	**To note the minutes of meeting of the unfair means committee held on 16th September 2022.** Noted
Item No. 47-6.0	:	**Any other items with permission of chair.**
Item No. 47-6.1		**To consider the recommendations of DPGC of the Department of Management Studies regarding mercy appeals received for relaxation in CGPA requirement for the award of degree.** **Resolution No. Senate-47/2022/05**: The Senate approved the recommendation of SPGB and admitted the mercy appeals of following students of Management Studies for award of degree since presently the institute is following the criteria of minimum 5.5 CGPA for award of PG degree: (1) Daksh Moolchandani (2020PBM5437) CGPA 5.88 after meeting credits requirements for award of degree (2) Amisha Kumawat (2020PBM5457) CGPA 5.65 after meeting credits requirements for award of degree
Item No. 47-6.2	:	**To consider the recommendations of DPGC of the Department of Management Studies regarding mercy appeals received for relaxation in CGPA requirement for semester promotion.** **Resolution No. Senate-47/2022/06**: The Senate was apprised that due to Covid-19 the semester examinations were overlapped with next semester registration, and students were permitted to register in next semester before the deceleration of result of 1st semester. The Senate resolved that following students may be given an opportunity to re-register in 1st Semester and repeat all the courses. Their eligibility for promotion to next semester will be evaluated on the basis of their performance after re-registration: (1) Madhu Lata (2021PBM5053) (2) Garima Kumawat (2021PBM5054) (3) Anjali Singh (2021PBM5056)
Item No. 47-6.3	:	**To consider the recommendations of DPGC of the Department of Mathematics regarding mercy pleas received for relaxation in CGPA requirement for award of degree.** **Resolution No. Senate-47/2022/07**: The Senate approved the recommendation of SPGB and allowed the mercy appeals of following students of Mathematics Department for award of degree since presently the institute is following the criteria of minimum 5.5 CGPA for award of PG degree: (1) Priya Meena (2020PMA5081) CGPA 5.92 after meeting credits requirements for award of degree (2) Lokesh Kumar Meena (2019PMA5690) CGPA 5.85 after meeting credits requirements for award of degree

Item No. 47-6.4	:	**To consider the recommendations of DPGC of the Department of Mathematics regarding mercy pleas received for relaxation in CGPA requirement for semester promotion.** **Resolution No. Senate-47/2022/08**: The Senate was apprised that due to Covid-19 the semester examinations were overlapped with next semester registration, and students were permitted to register in next semester before the deceleration of result of 1st semester. The Senate resolved that following students may be given an opportunity to re-register in 1st Semester and repeat all the courses. Their eligibility for promotion to next semester will be evaluated on the basis of their performance after re-registration: (1) Hemraj Lamba (2021PMA5574) (2) Prachi Agarwal (2021PMA5559) (3) ShivamYadav (2021PMA5577) (4) Manvendra Sharma (2021PMA5554) (5) Naveen Mahawar (2021PMA5590) (6) Neeraj Meena (2021PMA5593)
Item No. 47-6.5	:	**To consider the recommendations of the committee constituted to examine the proposal of approval of 03 (three) Institute Scholarships per faculty instead of 02 (two) for the Department of Humanities and Social Sciences, in consistency with the other Departments at MNIT Jaipur.** **Resolution No. Senate-47/2022/09**: The Senate resolved that all departments and centres of the Institute shall have equal slots per faculty with Institute fellowship.
Item No. 47-6.6	:	**To consider the Curricular Structure of all under graduate programmes and detailed syllabus of I year B.Tech and B. Arch programmes.** **Resolution No. Senate-47/2022/010:** The Senate approved the Scheme and syllabus of 1st year with following decisions: 1. Physics department will provide alternative names to courses Physics Paper I and Physics Paper II. 2. The criteria, recommended by SUGB, for dividing the students in the courses English Communication Skills (Basic) and English Communication Skills (Advanced) was approved for this year. The same is to be reviewed before admissions in next year.

The meeting ended with vote of thanks to the Chair.

Mahendra

Registrar & Secretary

27.09.2022

Annexure-A

List of Senate members who attended online/offline 47th Senate meeting:

S. No.	Name
1.	Prof. N. P. Padhy
2.	Prof. Ashok Kumar Pradhan
3.	Prof. Shuchi Srivastava
4.	Prof. A. B. Gupta
5.	Prof. A. K. Vyas
6.	Prof. A.P.S. Rathore
7.	Prof. D. Boolchandani
8.	Prof. Dilip Sharma
9.	Prof. G. S. Dangayach
10.	Prof. Ghanshyam Singh
11.	Prof. Girdhari Singh
12.	Prof. Gunwant Sharma
13.	Prof. Harpal Tiwari
14.	Prof. Himanshu Chaudhary
15.	Prof. Jyotirmay Mathur
16.	Prof. K. K. Sharma
17.	Prof. Kailash Singh
18.	Prof. Kanupriya Sachdev
19.	Prof. M. K. Shrimali
20.	Prof. M. L. Mittal
21.	Prof. M. M. Sharma
22.	Prof. Mahender Choudhary
23.	Prof. Mahesh Kumar Jat
24.	Prof. Manju Singh
25.	Prof. Manoj Fozdar
26.	Prof. Mohammad Salim
27.	Prof. Nupur Tandon
28.	Prof. R. P. Yadav
29.	Prof. Raj Kumar Vyas
30.	Prof. Rajeev Shringi
31.	Prof. Rajendra Kumar Goyal
32.	Prof. Rajive Tiwari
33.	Prof. Rakesh Jain
34.	Prof. Ravindra Nagar
35.	Prof. Rohit Goyal
36.	Prof. R. C. Gupta
37.	Prof. Ragini Gupta
38.	Prof. S. D. Bharti
39.	Prof. S. P. Chaurasia
40.	Prof. Sanjay Mathur
41.	Prof. Suja George
42.	Prof. Sushant Kumar Jana
43.	Prof. Tarush Chandra
44.	Prof. Upendra Pandel
45.	Prof. Urmila Brighu
46.	Prof. Vijay Janyani
47.	Prof. Vijay Laxmi
48.	Prof. Vineet Sahula
49.	Prof. Y.P. Mathur
50.	Dr. Amartya Chowdhury
51.	Dr. Bhagwati Sharma
52.	Dr. Dinesh Gopalani
53.	Dr. Dipti Sharma

54.	Dr. Manish Vashishtha
55.	Dr. Monica Sharma
56.	Dr. Satish Pipralia
57.	Dr. Sumit Khandelwal
58.	Dr. Satish Kumar
59.	Dr. Vatsala Mathur

The list of members who could not attend 47th Senate meeting:

S. No.	Name
1.	Prof. Vipul Rastogi
2.	Prof. Ajay Singh Jethoo
3.	Prof. Alok Gupta
4.	Prof. Alok Ranjan
5.	Prof. B. L. Swami
6.	Prof. G. D. Agarwal
7.	Prof. Jyoti Joshi
8.	Prof. K. R. Niazi
9.	Prof. Lava Bhargava
10.	Prof. NirutpamRohtagi
11.	Prof. Rajesh Kumar
12.	Prof. S. K. Tiwari
13.	Prof. Sudhir Kumar
14.	Prof. Vibhuti Singh Shekhawat

Annexure-B

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

Additional list of UG students pass out after 47th Senate meeting

S No.	Student Id	Student Name	Department	Total Registered Credits	Total Earned Credits	CGPA
1.	2018UCE1156	Nipun Mathur	Civil Engineering	193	193	5.62
2.	2018UCH1536	Abhinav Kumar Singh	Chemical Engineering	195	195	6.72
3.	2018UME1463	Ashok V P	Mechanical Engineering	196	196	5.33
4.	2018UME1726	Narendra Saini	Mechanical Engineering	197	197	6.1
5.	2017UAR1627	Vishal Kumar Singh	Architecture & Planning	229	229	5.39
6.	2018UEE1342	Gaurang Mathur	Electrical Engineering	201	201	7.28

Additional list of PG students pass out after 47th Senate meeting

S. No.	Student ID	Student Name	Specialization	Department	Full Time/ Part Time
1.	2020PBM5330	Sumit Kumar	MBA	Management Studies	Full Time
2.	2020PCT5032	Srashti Agrawal	Transportation Engineering	Civil Engineering	Part Time
3.	2020PCT5250	Palak Kumawat	Transportation Engineering	Civil Engineering	Part Time
4.	2020PCW5625	Chirag Gupta	Water Resources Engineering	Civil Engineering	Part Time
5.	2020PCW5635	Abhishek Kumar Joya	Water Resources Engineering	Civil Engineering	Part Time
6.	2020PEV5544	Jaishree	VLSI Design	Electronics and Communication Engineering	Part Time
7.	2020PPE5265	Rajhans Meena	Production Engineering	Mechanical Engineering	Part Time

Additional list of Ph.D. students pass out after 47th Senate meeting

S No.	Student Id	Student Name	Department	Date of Viva-Voce
1.	2019RAR9007	Shradha Chandan	Architecture and Planning	15-12-2022
2.	2018REN9081	Monika Agrawal	Centre for Energy and Environment	23-12-2022
3.	2016RCH9019	Rohitash Kumar	Chemical Engineering	31-10-2022

4.	2017RCH9034	Tarun Kumar Chaturvedi	Chemical Engineering	30-09-2022
5.	2018RCH9106	Karishma Maheshwari	Chemical Engineering	30-09-2022
6.	2016RCY9514	Manoj Kumar	Chemistry	09-12-2022
7.	2017RCY9025	Priya Yadav	Chemistry	30-11-2022
8.	2017RCY9073	Aakanksha Gurawa	Chemistry	14-12-2022
9.	2016RCE9009	Pankaj Dhemla	Civil Engineering	09-12-2022
10.	2017RCE9036	Santosh Kumar	Civil Engineering	28-11-2022
11.	2017RCE9037	Sonal Saluja	Civil Engineering	09-12-2022
12.	2017RCE9041	Gyanendra Kumar	Civil Engineering	15-11-2022
13.	2018RCE9062	Ram Vilas Meena	Civil Engineering	15-11-2022
14.	2017RCP9005	Mohit Kumar Singh	Computer Science and Engineering	07-12-2022
15.	2016REE9538	Ashish Laddha	Electrical Engineering	12-12-2022
16.	2017REE9077	Rathor Sumitkumar Kallubhai	Electrical Engineering	11-11-2022
17.	2018REC9073	Shobha Sharma	Electronics and Communication Engineering	16-12-2022
18.	2019RBM9185	Kirti Goyal	Management Studies	23-12-2022
19.	2017RMR9085	Smita Howlader	Material Research Center	16-09-2022
20.	2019RMA9071	Sanjay Kumar	Mathematics	30-12-2022
21.	2015RME9037	Tanpure Ganesh Subhash	Mechanical Engineering	29-11-2022
22.	2017RME9033	Digambar Singh	Mechanical Engineering	28-10-2022
23.	2014RPY9518	Sachin Surve	Physics	14-12-2022
24.	2015RPY9054	Karam Chand	Physics	27-12-2022
25.	2016RPY9052	Manish Kumar	Physics	05-12-2022

INFORMATION BROCHURE

For Admission to

Ph.D. Programme: Full-Time & Part-Time

July 2021 Session

NATIONAL INSTITUTE OF TECHNOLOGY

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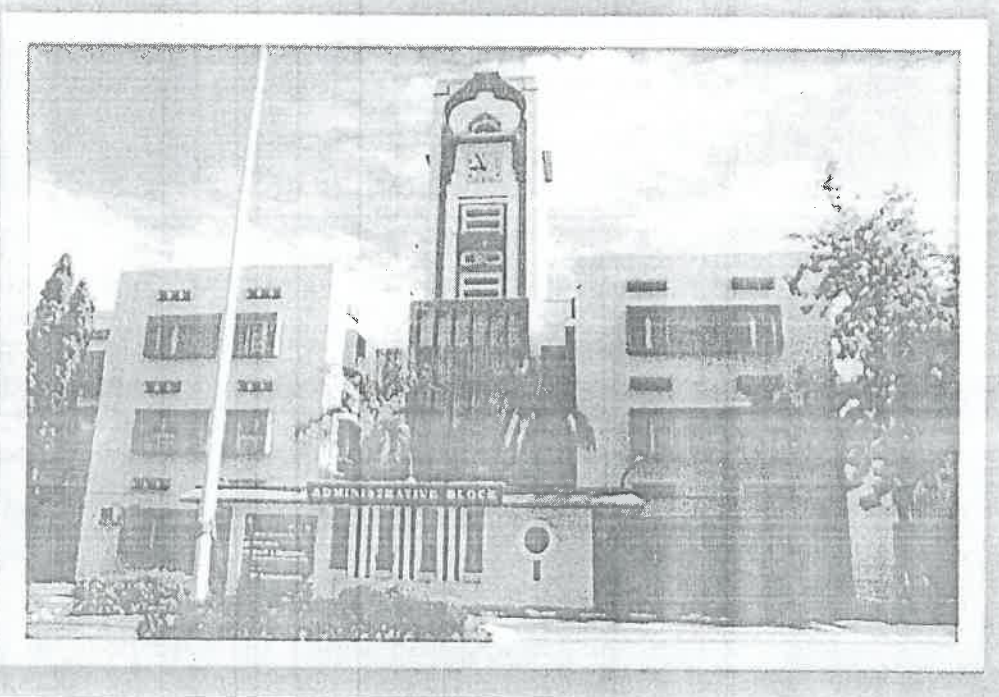

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1. IMPORTANT INFORMATION

Applications are invited for admission to the Ph.D. Programme in the following 4 categories:

(a) Full-Time: **(i)** Half-Time Research Assistantship (HTRA), and **(ii)** Externally Funded

(b) Part-Time: In-Service **(i)** Internal and **(ii)** External

for the session starting July 2021 in all the disciplines of Engineering & Technology, Sciences, Computer Applications, Architecture, Management, and Humanities & Social Sciences.

Admission to the applicants in the reserved category will be done as per the notification of the Government of India.

Applicants must apply through online portal **https://phd.nitt.edu/jul21** only.

Applicants are advised to read this Information Brochure carefully before applying online. A gist of the instructions is as follows.

1. **LATERAL APPLICANTS:** Applicants with masters' degrees (including those currently in their final semester and expecting degrees awarded in 2021) (i) in the OC/OC-EWS/OBC-NCL category must possess 60% or above aggregate marks (equivalently, CGPA at least 6.5/10), and (ii) in the SC/ST/PwD category must possess 55% aggregate or above aggregate marks (equivalently, CGPA at least 6.0/10.0), in both UG and PG degrees for admission to the Ph.D. program. In addition, a qualified GATE, or an equivalent National level test, score, preferably obtained in the last 5 years from the closing date of application form, is mandatory. These applicants are eligible for all 4 categories of Full-Time and Part-Time. However, GATE/equivalent score is not mandatory for applicants from Industry and R & D Labs for admission into Part-Time External category. For more details please see section 3.7, page 10 of this document.

2. **DIRECT APPLICANTS:** Exceptionally outperforming applicants currently in their final semester of their B.E./B.Tech./B.Arch. degree programme, and are expected to get their bachelors' degrees awarded in 2021, (i) in the OC/OC-EWS/OBC-NCL category must possess 80% or above aggregate marks (equivalently, CGPA at least 8.5/10), and (ii) in the SC/ST/PwD category must possess 75% aggregate or above aggregate marks (equivalently, CGPA at least 8.0/10.0) for admission to the Ph.D. program. In addition, a qualified GATE, or an equivalent National level test, score is mandatory. These applicants are eligible for Full-Time HTRA category in the Architecture and Engineering departments only. Selected candidates will be joining a two-degree M.Tech/M.Arch. + Ph.D. programme in Architecture/ Engineering.

3. Selection of candidates will be based on an initial screening of the applications, a written test* and the performance in the interview/counseling to be conducted online for this session of admission

NATIONAL INSTITUTE OF TECHNOLOGY
WARANGAL

Ph.D. ADMISSIONS
JULY 2022 SESSION

BROCHURE

Artificial Intelligence	Computer Vision	Image Processing
Algorithms and Graph Theory	Machine Learning and Soft Computing	Wireless Ad-hoc and Sensor Networks
Cluster and Cloud Computing	Data Mining	Model-Driven Framework-oriented systems
Security and Privacy	Bioinformatics	--

Department of Chemical Engineering	B.Tech/ B.E. or Equivalent degree in Chemical Engineering/ Mechanical Engineering/ Biotechnology/ Petrochemical Engineering/ Petroleum Technology/ Instrumentation and Control Engineering/ EEE/ Electrochemical Engineering/ Electronics & Instrumentation/ Chemical Technology/ Polymer Technology/ Biochemical Engineering/ Energy Engineering/ Environmental Engineering and allied disciplines and M.Tech. or M.E. in Chemical Engineering/ Mechanical Engineering/ Biotechnology/ Petrochemical Engineering/ Petroleum Technology/ Process Control and Instrumentation/ Control Systems/ Polymer Technology/ Biochemical Engineering /Energy Engineering/ Nanotechnology/ Environmental Engineering and allied areas. OR B.Tech/B.E. or Equivalent degree in Chemical Engineering/ Mechanical Engineering/ Biotechnology/ Petrochemical Engineering/ Petroleum Technology/ Instrumentation and Control Engineering/ EEE/ Electrochemical Engineering/ Electronics & Instrumentation/ Chemical Technology/ Polymer Technology/ Biochemical Engineering/ Energy Engineering/ Environmental Engineering and allied disciplines with valid GATE score and at least CGPA of 8.0/10 or 75% of marks under GEN/ OBC-NCL/ GEN-EWS category and at least CGPA of 7.5/10 or 70% for candidates under SC/ ST/ PwD category.
Research Areas	
Biomass Gasification	Fuel Cells
Plate Heat Exchangers	Membrane processes
Bioreactors	Flow batteries
Reactive Distillation	Chemical process scheduling
Micro fluidics	Multiphase flows
Interfacial Science	Chemical reactor analysis and design
Waste water Treatment	Sustainable and energy efficient technologies
Micro Reactors	Process control
Process Intensification	Nonlinear analysis
Nano Materials	Computational Fluid Dynamics
Fluidized Bed Operations	Biofuels
Catalysis	Corrosion Engineering

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

Information Brochure
Ph.D. Admissions
2022-23

issued by the Competent Authority in the prescribed format.

- PwD Certificate, if applicable.
- Sponsorship certificate, if applicable.
- (please upload Sponsorship Certificate, If not available then attach Self-Declarant letter stating that the sponsorship certificate will be given at the time of Interview/ Admission).
- Statement of Purpose (SoP), a sample of writing (if applicable), research proposal (if applicable), as a single file irrespective of the number of disciplines/ specialisations.

8 OBC candidates may note that the limit of annual income is Rs. 8 lakhs for determining the creamy layer among Other Backward Classes (OBCs) candidates.

The OBC-NC certificate issued for the financial year 2022-23 by the Competent Authority in the prescribed format must be uploaded in the ONLINE application form and submitted at the time of admission.

The OBC reservation update Information is available in the public domain http://www.iitb.ac.in/newacadhome/phd.jsp under OBC Reservation Update.

9 Economically Weaker Sections(EWS) candidates may note that the limit of annual income is Rs. 8 lakhs for determining the eligibility for benefit under Economically Weaker Sections(EWS) reservation.

The EWS certificate issued by the Competent Authority in the prescribed format must be uploaded in the ONLINE application form and submitted at the time of admission.

The EWS reservation update Information is available in the public domain http://www.iitb.ac.in/newacadhome/phd.jsp under EWS Reservation Update.

10 PwD candidates will be given extra time, as per GOI rules on request by the candidate. Such requests need to be addressed to Head of the concerned academic units through email/hard copy well in advance.

11 Seats are reserved for Economically Weaker Sections(EWS)/ Other Backward Class Non-Creamy Layer (OBC-NCL)/ Scheduled Caste (SC)/ Scheduled Tribe (ST) and Person with Benchmark Disability (PwD) Categories , as per Government of India rules.

12 You should check the Institute website for results / important announcements.

13 You should check emails sent to the email address provided in your application for all important communications and announcements.

14 Merely fulfilling eligibility criteria doesn't entitle a candidate to be called for the test and/or interview. Admission is based on GATE/Written test/Interview performance in addition to general eligibility criterion, the applicants must also satisfy the eligibility criteria specified for the respective Departments / Centres / Schools / Interdisciplinary Groups.

15 Candidates, if called for written test/interview should show/ bring with them (i) Photo ID Card, (ii) Printed copy of the application submitted online, (iii) Thesis / dissertation / report / publications (iv) copy of certificates and mark-sheets.

16 Candidates having degree from foreign universities should submit equivalence certificate from Association of Indian Universities (AIU), New Delhi for qualifying Exam and proof of having First class or 60% (55% for SC/ST/PwD) marks or equivalent in qualifying examination.

17 Read the Frequently Asked Questions (FAQ) given on Institute website http://www.iitb.ac.in/newacadhome/phd.jsp for more details.

18 Contact Details for - Ph.D. - phd_unit5@iitb.ac.in

19 Students must submit self-attested copies of his/her qualifying degree certificate & final transcripts on or before **30th September, 2022 (admitted in Autumn Semester)/January 30, 2023 (admitted in Spring Semester)**, failing which admission will stand cancelled.

Centralized Counselling for

M.Tech./M.Arch./M.Plan. Admissions (CCMT 2022)

Information Brochure

(Version 4.0)

(Aug 07, 2022)

https://ccmt.admissions.nic.in/

Organized by

Malaviya National Institute of Technology Jaipur

Jaipur, Rajasthan – 302017, India

https://mnit.ac.in/students/mac

2. Eligibility Requirements

A candidate to be eligible for M.Tech./M.Arch./M. Plan. programme:

- Must have a valid GATE score of the year 2020 / 2021 / 2022.
- In qualifying degree, the candidates should have passed and secured at least 6.5 CGPA (on a 10- point scale) or 60% for GEN/GEN-EWS/OBC, whereas 6.0 CGPA (on a 10-point scale) or 55% in case of SC/ST/PwD candidates. **The above mentioned CGPA/Percentage should be awarded by a recognized University/Institute.**
- Only primary mode of evaluation (CGPA or percentage) as mentioned in the qualifying degree certificate/mark sheet shall be considered while verifying eligibility. **In case both CGPA and percentage are mentioned, then only CGPA would be considered.**
- Conversion from CGPA to percentage or vice versa given by an individual Institute/university will not be allowed.
- If CGPA is on a different scale than the 10-point scale, then it would be linearly mapped to a 10-point scale.
- In case, the result of qualifying degree is awaited, provisional admission is permitted to a candidate subject to meeting above minimum qualifying degree requirements latest by **September 30, 2022**. In these cases, all exams should have been completed by **August 15, 2022**. A certificate from the head of the current institute (format given on the CCMT website) to that effect should be submitted during document verification.
- For each programme, eligibility is defined based on certain combinations of degree-disciplines and GATE paper. Please refer to CCMT website https://ccmt.nic.in for the seat matrix and eligibility matrix, which provides the number of seats available under different categories in each programme.
- For certain programmes in few participating Institutes, special eligibility criteria are applicable (given on CCMT website). Eligibility against these special requirements shall not be checked during the registration process but will be verified during online document verification as well as during physical reporting at the finally allotted institute. **Candidates are required to ensure that they fulfill all such special requirements before choosing such programmes during choice filling. Candidates will be solely responsible for their fulfilling of and compliance to these special eligibility requirements. CCMT-2022 will not entertain any claims arising out of the candidate's failure to comply with these special eligibility criteria even at a later stage. Candidates must note that special eligibility would only be checked when that particular seat is allotted and not anytime in earlier rounds. Candidates must specifically note that in case they fail to satisfy special eligibility of the allotted seat at any stage then they may be left without any allotted seat. If any such candidates satisfy all other eligibility criteria, they may be considered for the allotment in further rounds, if any, depending on the remaining vacant seats.**
- The candidates who possess certificates/qualifications from any of the professional societies (such as The Institution of Engineers (India) (IE), The Institution of Civil

Annexure-D

Memorandum of Understanding

Academic and Research Collaboration
between
National Institute of Technology ____, India
and
Indian Institute of Technology Madras, Chennai, India

National Institute of Technology ___ and Indian Institute of Technology Madras have agreed to the following protocols, governing their collaboration on academic and research related activities:

Scope

The scope of collaboration on academic and research activities in this Memorandum of Understanding includes the following categories:

- Academic and Research collaboration in the areas of mutual interest.
- Exchange of academic information, scholarly information, materials, and publications.
- Exchange of students and faculty.
- Sponsorship of cooperative seminars, workshops, and other academic meetings.

Student Exchange

Pursuant to the agreement for academic exchange, National Institute of Technology _____ and Indian Institute of Technology Madras will exchange students according to the terms laid out in Annexure 1. It is desired by both parties that there will be a significant flow of students in both directions.

Research Collaboration

Faculty from both institutions will collaborate in the supervision of exchange students and in joint research in disciplines of mutual interest. All such joint research activities will be governed by the terms laid out in Annexure 2.

Admission of the top 10% of the students of National Institute of Technology _____ to direct PhD at IIT Madras (subjected to availability at IITM)

National Institute of Technology _____ and IIT Madras agree to facilitate the top 10% of students **(subjected to availability at IITM)**, at the end of 6th semester of National Institute of Technology _____ to seek admission to the direct PhD program of IIT Madras, and enable successful candidates to pursue the 7th and 8th semesters of their BTech program at IIT Madras, according to the terms laid out in Annexure 3.

Commencement, renewal, termination, and amendment

This MOU will come into force upon affixing of the signatures of the representatives of the partner institutions and will remain in effect for five years. This MOU may be renewed upon its expiry, with the agreement of both partner institutions.

If either partner institution wishes to terminate the MOU at the end of the five years period, it must notify the other institution not less than six months prior to the expiry of the MOU.

This MOU or its renewal and the actions taken under it may be reviewed at any time. Modifications may be made by mutual agreement and any amendment or extension to the agreement may be formalized by the exchange of letters between the two parties.

Signed:	Signed:
SIGNATURE:	SIGNATURE:
Prof. _____ Director **National Institute of Technology _____, India**	Prof. V. Kamakoti Director **Indian Institute of Technology Madras Chennai, Tamil Nadu 600036, India**
DATE:	DATE:

Annexure 1

1. The institution where the student is admitted to earn a degree is the home institution and the institution to which the student is sent as an exchange student is the host institution.

2. Students under the student exchange program will be classified as special exchange students. Special exchange students will be permitted to take courses on credit/audit, as well as participate in research activities/project work.

3. In any case, the consent of the teacher/project supervisors/research supervisors at the host institution is required. Such consent will take into account among other things whether the student has successfully completed the pre-requisites for the course/project.

4. The Host Institution of students enrolled in this exchange program shall not levy tuition fees. Home Institution may continue to levy fees as applicable.

5. Course credits and grades earned will be determined by the home institution based on the grade report from the host institution.

6. The number of students and time duration will be worked out on a case-by-case basis.

7. Participants may not spend more than one year normally in the exchange program.

8. Participants, when they are in the host institution, will be subject to the rules and regulations of the host institution.

Selection and nomination
The selection and nomination of students is open throughout the academic year. The student nomination should be accompanied by:

- Curriculum vitae, with an official grade card/mark sheet.
- Statement of aptitude from a member of the student's school/faculty.
- A specific outline of the program of study at the host institution and a statement of objectives of the student.

When a nomination is forwarded by the home institution, it is presumed that the sending institution considers the student suitable for the proposed program and consents to send the student if selected by the host institution.

The host institution will evaluate the nomination and determine their suitability for selection under the Student Exchange Program.

Where the exchange student is pursuing a research or implementation project as part of the B.Tech, M.Tech, M.A., MBA, M.S., M.Sc., or PhD (or equivalent) degree program, the host institution will provide a suitable faculty member to jointly mentor (along with the supervisor in the home institution) the exchange student in formulating the research project or jointly supervising the exchange student in the event that a research project has already been identified.

The host institution will inform the home institution of any academic or other problems that may arise during the period of the student's residence in the host institution. The host institution will take appropriate action under its established policy and procedures, in consultation with the home institution to deal with such problems.

Annexure 2

1. Proposals for collaborative research work under this Memorandum will be submitted with the prior approval of the Head of each institution, or their nominee.

2. Each institution will nominate one of its members as its representative in charge of the cooperative program. Individual programs of work under this Memorandum will be jointly planned and conducted by the nominees of both parties.

3. Progress of work of any individual program will be reviewed and approved by designated authorities of both parties.

4. The final approval of any project will depend on the availability of guaranteed support funds.

5. Neither National Institute of Technology _____ nor Indian Institute of Technology Madras will be held responsible for any liability to the other party, and neither party shall be required to purchase any insurance against loss or damage to any property due to activities to which this agreement relates.

Every collaboration will have its own agreement/contract that addresses issues such as IPR, funding pattern, disclosure of information, etc.

****

Annexure 3

Admission of the top 10% of BTech students of National Institute of Technology _____ **to Direct PhD program at IITM (subjected to availability at IITM)**

Extract of Senate Norms for top 10% of BTech students of National Institute of Technology _____ seeking admission to PhD program at IITM.

a) Top 10% of the B. Tech students from other Institutions (which agree to participate in the program) who are in their 3rd year, with a minimum CGPA of 8.0 and without backlog/failures, will be eligible to apply for the Direct PhD (subject to availability at IITM).

b) Selected students will move to IIT Madras in their 4th year.

c) Credits earned during the 7th and 8th semesters at IIT Madras shall have equivalence to the credit needed for the 4th year of the B. Tech program. The credits will be transferred to the student's home institution for the award of the BTech degree.

d) After successfully completing the 7th and 8th semesters with CGPA > 8.0 at IIT Madras, and being selected for admission to the direct PhD program, these students are eligible for HTRA for five years from the date of joining the Direct PhD program. Students from CFTIs having a CGPA of 8 and above, will be eligible for the award of HTRA without the requirement of GATE. Students admitted from non-CFTIs are required to qualify in GATE for becoming eligible for the award of HTRA.

e) The direct PhD students must complete the comprehensive viva within 3 semesters after joining the direct PhD program of IIT Madras.

f) If a student earns a CGPA < 8.0 in the courses in the 7th and 8th semesters at IIT Madras, the student will be transferred back to the home institution along with credits earned.

g) If a student is not found fit to continue in the PhD program by their doctoral committee, they will be allowed to drop out any time after the 1st year of PhD, at which point the B. Tech credits will be transferred to the parent institute.

Specific Operational aspects agreed to by National Institute of Technology ____ and IITM

1. **National Institute of Technology** _____ will make an internal announcement to all the students who are in the top 10% of their class at the end of their 5th semester, with a minimum CGPA of 8.0 and without backlogs/failures, and encourage such students to apply for admission into a Direct PhD program at IIT Madras to those Department(s) in which they meet the eligibility norms for the regular PhD program**(will be subjected to availability at IITM)**, through the

online portal between 1st March and 30th March every year.

2. **National Institute of Technology** _____ will encourage and recommend such students to opt for the summer fellowship of IITM at the end of their 6th semester.

3. **National Institute of Technology** _____ will forward the list of students who are within the top 10% of their class, with a minimum CGPA of 8.0 and without backlogs/failures, along with their contact details, to the Dean (Academic Research), IIT Madras soon after the 6th-semester results are declared.

4. IIT Madras will forward the list of students selected for direct PhD admission to **National Institute of Technology** _____ and also inform the respective students.

5. Selected students of **National Institute of Technology** _____ will move to IIT Madras at the end of 6th Semester and undergo paid summer fellowship at IIT Madras. On successful completion of the summer fellowship and on a favorable recommendation of the Head of Department, they may be permitted to pursue their 7th and 8th semesters at IIT Madras.

6. **National Institute of Technology** _____ will permit these students (selected for direct PhD program based on availability at IITM) to pursue the final year of their B. Tech program (7th and 8th semester) at IIT Madras.

7. **National Institute of Technology** _____ will provide some flexibility in the curriculum for these students to facilitate them to complete the credits to be earned towards the award of the B Tech degree. Detailed planning of the courses to be taken at IIT Madras will be jointly decided by the faculty advisor of the student at **National Institute of Technology** _____ and the guide-designate at IIT Madras

8. These students should earn a minimum CGPA of 8.0 at the end of 8th semester at IIT Madras, to become eligible to continue in the direct PhD program. Otherwise, the student will be transferred back to **National Institute of Technology** _____ along with the credits earned.

9. These students are not eligible for campus placement through IIT Madras at the end of their first year, of study at IIT Madras, which will be the end of their 8th semester.

10. The student will pay the tuition fee to **National Institute of Technology** _____ during their 7th and 8th semesters. After joining as a direct PhD student, the student will pay the tuition fee appropriate for PhD scholars as per regulations of IIT Madras, to IIT Madras.

11. With the concurrence of the guide-designate at IITM and the Doctoral Committee, faculty members from **National Institute of Technology** _____ may serve as co-guides for these students, whenever possible IITM encourages such a practice, but the decision is left to the discretion of the Guide-designate.

12. These students shall come under the purview of the guidelines/regulations for the 7th and 8th semester BTech of **National Institute of Technology** _____ in their 7th and 8th semesters, and under the PhD ordinances and Regulations of IIT Madras once they join the direct PhD.

13. For candidates who fail to complete the Comprehensive viva-voce exam, the option to convert to an MS program as per regulation R.21 in the PhD ordinances and regulations of IIT Madras, will be available.

14. If a student is not found fit to continue in the PhD program by their Doctoral Committee, they will be allowed to drop out any time after the 1st year of the direct PhD, at which point the 7th and 8th semester credits will be transferred to **National Institute of Technology _____** for the award of the B.Tech degree.

MEMORANDUM OF UNDERSTANING

BETWEEN

NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

AND

INDIAN INSTITUTE OF TECHNOLOGY, DELHI

This is a Memorandum of Understanding (MOU) dated .....

between

Malaviya National Institute of Technology Jaipur (MNIT-Jaipur), a premier academic institution of International Repute, incorporated under National Institute of Technology Act, 2007, having its permanent campus and office at JLN Marg Jaipur 302017

and

Indian Institute of Technology Delhi is one of the 23 IITs created to be Centres of Excellence or training, research and development in science, engineering and technology in India and declared as an Institution of National Importance under the "Institutes of Technology Amendment) Act, 1963"having its permanent campus and office at IIT Campus, Hauz Khas,, New Delhi, Delhi 110016

MNIT Jaipur **IIT-Delhi**

Malaviya National Institute of Technology Jaipur (MNIT-Jaipur) and Indian Institute of Technology Delhi (IIT-Delhi) have agreed to the following protocols governing their collaboration on academic activities.

1. Scope

The scope of collaboration on academic and research activities in this Memorandum of Understanding includes the following categories.

(i) Academic and Research collaboration in the areas of mutual interest. It is expected that this collaboration will in due course lead to collaborative research projects, joint supervision of PhD students, joint workshops and seminars, etc.

(ii) Exchange of students and faculty; exchange of academic information, scholarly information, materials and publications;

(iii) Admission of MNIT-Jaipur students for direct PhD entry at IIT-Delhi

2. Research Collaboration

Faculty from both Institutions will collaborate in the supervision of exchange students and injoint research in disciplines of mutual interest. All such joint research activities will be governed by the terms as given below

2.1 Proposals for collaborative research work under this Memorandum will be submitted with the prior approval of the Head of each institution, or his/her nominee.

2.2 Each institution will nominate one of its members as its representative in charge of the cooperative programme. Individual programme of work under this Memorandum will be jointly planned and conducted by the nominees of both parties.

2.3 Progress of work of any individual programme will be reviewed and approved by designated authorities of both parties.

2.4 The final approval of any project will depend on the availability of guaranteed support funds.

MNIT Jaipur **IIT-Delhi**

2.5 Neither MNIT-JAIPUR nor IIT-DELHI will be held responsible for any liability to the party, and neither party shall be required to purchase any insurance against loss ordamage to any property due to activities to which this agreement relates.

2.6 Every collaboration will have its own agreement/contract which addresses issues such as IPR, funding pattern, usage policies of research facilities, disclosure of information etc.

3. Students and faculty Exchange

Pursuant to the agreement for academic exchange, MNIT JAIPUR and IIT-DELHI will exchange B.Tech, M.Tech students, research scholars and faculty according to the terms laid out here. It is desired by both parties that there will be significant flow of students/faculty in both directions.

3.1 Students under the exchange programme will be classified as special exchange students. Special exchange students will be permitted to take courses on credit/audit, as well as participate in research activities/internships/project work.

3.2 In any case, the consent of the teacher/project supervisors/research supervisors is required. Such consent will take into account among other things whether the student has pre-requisites for the course/project.

3.3 Neither institution will require admission or tuition fees of exchange students under this MoU

3.4 Course credits and grades earned will be determined by the home institution based on the grade report from the host institution.

3.5 The number of students and home duration will be worked out on a case to casebasis.

3.6 Participants may not spend more than one year normally in the exchange programme.

3.7 Participants will be subjected to the rules and regulations of the host institution.

3.8 The faculty of MNIT-JAIPUR may also apply for suitable postdoc positions/any other opportunities available at IIT-DELHI subjected to other terms and conditions of MNIT-JAIPUR for relieving the faculty.

Selection and nomination

The selection and nomination of students is open throughout the academic year. The student nomination should be accompanied by

(i) Curriculum vitae
(ii) Statement of aptitude from a member of the student's school/ faculty.
(iii) A specific outline of the programme of study at the host institution and a statement of objectives of the students.

When a nomination is forwarded by the home institution, it is presumed that the sending Institution considers the students suitable for the purposed program and consents to send the students if selected by the host institution.

The host institution will evaluate the nominations and determine their suitability for selection under the student Exchange Programme.

Where the exchange student is pursuing a research or implementation project as part of the B.Tech, M.Tech, M.sc or PhD (or equivalent) degree programme, the host institution will provide a suitable faculty member to jointly assist (along with supervisor in the parent institution) the exchange student in formulating research project or jointly supervising the exchange student in the event that a research project has already been identified.

The host institution will inform the home institution of any academic or other problems thatmay arise during the period of student's residence in the host institution. The host institution with the horde institution will deal with such problems.

4. **Direct Ph.D admission**

Providing an opportunity to the students currently pursuing Bachelor of Technology (B.Tech.) to explore the option to undertake courses in IIT Delhi and be considered for early admission to the PhD programme at IIT Delhi

This scheme is intended to enable meritorious Malaviya National Institute of Technology Jaipur (MNIT JAIPUR) B.Tech students to carry out part of their studies including project work at IIT Delhi and offer an opportunity for direct admission to PhD without the need to qualify GATE or any other national level examination. This will enable "early admission" to PhD for MNIT-JAIPUR B.Tech. Students as early as the end of their 6^{th} semester. It is envisaged that this scheme will also help MNIT JAIPUR students to enhance their chances for qualifying for the PMRF fellowship for PhD at IIT Delhi.

4.1 Under this scheme, MNIT JAIPUR students who have a CGPA of 8.00 at the end of their sixth semester (three years), will be eligible to apply for a project In summer and complete their fourth year (7^{th}' and 8^{th} semesters), at IIT Delhi, and then be considered for an early admission into the PhD program at IIT Delhi.

4.2 All applications will be received through a portal set up for this purpose. They will Submit their transcript, and other academic records and achievements, and documentary evidence of any research or internship experience.

4.3 Upon selection, through a selection committee set up for the purpose, the students will have an offer of admission to the PhD program. The students are expected to demonstrate sufficient merit in coursework, project work and/or research during their 7th and 8th semesters of B.Tech to continue to join the PhD program. If the Performance of the students is not up to the mark as per the guidelines of IIT Delhi, the students will be sent back to MNIT JAIPUR with the credits earned.

4.4 Students will actually join the PhD program only after completion of all graduation requirements at MNIT JAIPUR, which would be typically in the month of July. All shortlisting criteria and admission criteria must be satisfied by the student at thetime of joining as well. Requirement of GATE is waived off, since the student willenter IIT with a minimum CGPA of 8.00.

4.5 During the stay in IIT-DELHI, the student will have the status of Visiting Student, and will enjoy all the privileges of a full-time student in IIT Delhi.

4.6 During the stay in IIT-DELHI, the student may take courses to satisfy the credit requirements for their B. Tech. registration in their parent institution (NIT-TRICHY). IIT-DELHI will certify the completion of the courses and the grades obtained in them including project work done at IIT-DELHI.

4.7 In all academic/Project work undertaken in IIT-DELHI, transcript will be provided with relevant credits, however, consideration of these credits and mapping to the letter grades will be up to MNIT JAIPUR as per their grading system. Students may also undertake additional credits as Pre-Ph. D. courses for their Ph.D. Program during their stay (in a regular semester) at IIT Delhi.

4.8 During their stay in IIT Delhi as a Visiting Student, IIT-DELHI will not be charging any academic fees to the student, except fixed charges as applicable, since these students will be paying their regular academic fees in their parent institution. Being B.Tech degree students, IIT-DELHI will be providing either on-campus or off- campus hostel accommodation during the one-year period. Hostel fees will be charged at regular rates.

4.9 Students coming under this program will not be entitled for participation in the Training & Placement process in IIT Delhi or MNIT JAIPUR, once they register as full-time PhD students. This will be clearly stated in their offer of admission.

5. Commencement, renewal, termination and amendment

This MoU will come into force upon affixing of the signatures of the representatives of the partner institutions and will remain in effect for five (5) years. This MoU may be renewed upon its expiry, with the agreement of both the partner institutions. If either partner institution wishes to terminate the MoU at the end of five years, it must notify the other institution not less than six months prior to the expiry of the MoU.

This MoU or its renewal and the actions taken under it may be reviewed at any time. Modifications may be made by mutual agreement and any amendment or extension to the agreement may be formalized by the exchange of letters between the two parties.

Director
Malaviya National Institute of Technology
Jaipur
(Signature and Seal)

Director
Indian Institute of Technology
Delhi
(Signature and Seal)

Annexure-E

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

STUDENT INTAKE

Undergraduate Programmes 2023-24

Programme name	Approved Intake (Year 2022-23)	Proposed Intake (Year 2023-24)
B. Architecture	77	77
B.Tech. Chemical Engineering	115	115
B.Tech. Civil Engineering	115	90
B.Tech. Computer Science and Engineering	117	117
B.Tech. Electrical Engineering	117	117
B.Tech. Electronics & Communication Engineering	117	117
B.Tech. Mechanical Engineering	116	90
B.Tech. Metallurgical & Materials Engineering	114	90/75
New Programme		
B.Tech. Artificial Intelligence and Data Engineering (Dept. of CSE)	--	30/40
B.Tech. Material Science & Engineering (Material Research Centre)	--	20
B.Tech. Engineering Physics (Dept. of Physics)	--	20
B.Tech. Mathematics & Computing (Dept. of Mathematics)	--	20
BS-MS five years integrated M.Sc. miner in Engineering branch (Dept. of Chemistry)	--	20
	888	923/918

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY, JAIPUR

Recommendation of Senate Sub-Committee

Ref: Agenda 46.3.2 of 46th Senate meeting

18-Jan-2023

The committee formed by the Senate in its 46th Meeting to explore the initiation of new UG programmes met on Friday, 23rd September 2022 and subsequently on 19th December 2022 and 18th January 2023.

Members in presence:
Committee Members- Prof. Kailash Singh, Dean of Faculty Welfare, Dr. Sumit Khandelwal, Assoc. Dean (UG), Prof. Vineet Sahula, convener;
Heads of departments- Dr. Satish Pipralia (Arch), Dr. D. Gopalani (CSE), Prof. Himanshu Chaudhary (Mech), Prof. U. Pandel (Metallurgical & Materials), Prof. R. K. Vyas (Chemical) special invitee, Dr. Bhagwati Verma (MRC), Dr. Vatsala Mathur (Maths), Dr. Bhagwati Verma, MRC; Dr. Dipti Sharma, HSS, Dr. Vatsala Mathur, Mathematics. Various other departments were also represented by Conveners of DUGC.

The members perused the following agenda items.

(i) Reappropriating UG intake
(ii) Initiation of new UG programmes

The convener of the committee presented information about new programmes in niche areas being offered by various IITs/NIT's and those recommended by AICTE. Members expressed their opinion on various aspects- having a series of meetings to raise ideation to a well-compiled proposal, choice of new programmes in areas having industry/placement opportunities, and sufficient time frame to have deliberations in the departments.

The committee met multiple times to review and discuss the proposals sent by the departments. Some departments, viz. HSS, Management, Architecture, and Mechanical have also expressed to initiate new UG programmes. However, they felt there are one or more of these constraints- faculty strength, preparedness to launch the programme, infrastructure for labs etc. and the respective scheme is under preparation.

1: **Reappropriating the intake of UG programmes**

Various departments offered to reduce their total intake to either 90 or 75 per annum from the present respective intake. The following reduction was proposed by the respective departments. The rest of the departments having undergraduate programmes proposed NO change.

S. No.	*Department*	*Present intake*	*Proposed intake*	*Reduction in intake*
1.	Civil Engineering	115	90	25
2.	Mechanical Engineering	116	90	25
3.	Metallurgical & Materials Engineering	115	90 or 75	40
4.			*Total reduction proposed*	90

The following department is willing to re-appropriate the intake (reduction) only when they happen to start a new programme.

S. No.	*Department*	*Present intake*	*Proposed intake*
1.	Architecture		To change if a new programme, **B.Tech. in Planning** is started

18-1-23

18/1/23

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY, JAIPUR

Recommendation of Senate Sub-Committee

Ref: Agenda 46.3.2 of 46th Senate meeting

2: **Initiation of new UG programmes**

S. No.	*Department*	*Proposed intake*	*Proposed UG Prorgamme*
1.	Computer Science & engineering	30/40	**B.Tech.** in one of the following areas • Artificial intelligence and Machine Learning OR • Artificial Intelligence and Data Science
2.	Material Research Centre	20	**B.Tech.** in Material Science & Engineering
3.	Physics	20	**B.Tech. in** Engineering Physics
4.	Mathematics	20	**B.Tech. in** Mathematics & Computing
	Total new seats	***90/100***	

The departments have submitted, (i) new scheme compliance format, (ii) draft scheme of curriculum and (iii) credit structure compliance. Please refer to Annexures for these documents.

3. **Other programmes PG or dual degree**

The other programmes are also being contemplated by departments.

Departments proposed to initiate many other programmes other than for undergraduate, viz. dual degrees, integrated programmes and programmes for executives. They have been submitted to another committee which is formed for revision/restructuring of PG courses.

18/1/23
(Sumit Khandelwal)

18.1.2023
(Kailash Singh)

18 JAN 2023
(Vineet Sahula)

Members of committee

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY, JAIPUR

Recommendation of Senate Sub-Committee

Ref: Agenda 46.3.2 of 46th Senate meeting

Annexure-I

Credit structure fo proposed B.Tech. programmes (4 years)

Table 1: Credit Structure (revised) for the Proposed Scheme

Course type	B. Tech. Only	CSE	Maths & Computing	Engineering Physics	Material Science & Engineering
Total Credits	**178 – 184**	**180**	**179**	**178**	**180**
Institute core	**36#**	**36**	**36**	**36**	**36**
Basic Sciences	*16[a]*	16	16	16	16
Fundamental Engg. (EAS)	*15[b]*	15	15	15	15
Humanities & Social Science	*5[c]*	5	5	5	5
Discipline-specific courses	**121 – 139#**	**132**	**134**	**130**	**135**
Programme core	*109 – 136*	120	120	115	120
Programme elective					
Advance elective					
Project	*3 – 12*	9	11	12	12
Management	*3*	3	3	3	3
Other courses	**9 – 21**	**12**	**9**	**12**	**9**
Open electives	*6*	6	6	6	6
Programme linked EAS/BS	*3 – 15*	6	3	3	3

VINEET SAHULA
18/1/2023

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY, JAIPUR

Recommendation of Senate Sub-Committee

Ref: Agenda 46.3.2 of 46th Senate meeting

Annexure-II

Draft of scheme of proposed B.Tech. programmes (4 years)

Department of Civil Engineering

Minutes of the DFB Meeting

A meeting of the Department Faculty Board was held on Monday, 08 August 2022, at 10.30 AM in the Civil Seminar room. At the outset, The HoD welcomed all the faculty members. The DFB was called to appraise and discuss the following points that were deliberated in Deans & HoDs meeting with the with Honorable Director sir on August 4,2022:

1. All faculty members are required to update their own and their Research scholars details on department website. The department's website and faculty profile should be updated specially for the upcoming NBA visit in the department.
2. Faculty members may explore their network for MoUs with the Department. Faculy may also suggest eminent persons with CV for visiting faculty/Adjunct faculty position.
3. The 1.8 Cr fund is to be utilized to convert existing Laboratories into state of the art labs primarily focused at UG teaching and equipped with latest instruments meeting world class standards. To start with RMT/ Surveying Laboratory are selected for upgradation against current sanction of funds.
4. During the revisit of UG program, it was deliberated and suggested to fix the intake of UG Civil Engineering to 90 for effective utilization of existing infrastructure. The faculty were also asked to propose new course/program with complete detailing for necessary action.
5. Industry supported labs and faculty should be initiated in respective programs. Courses/modules are to be identified that can be taken by industry experts for UG and PG students.
6. The faculty members may also suggest good faculties and research scholars when there is faculty/research scholar opening in the department.
7. The new faculties must collaborate with senior faculty and prepare research proposals for possible RnD from India and Abroad. It is better to form a consortium of departments from within or outside the Institute to submit high value/high impact proposals.
8. Mentorship activity should be immediately initiated as informed via email by the Institute. A record should be maintained for all the activities under this program.

The list of faculty present in the meeting is recorded in the register maintained in the department. The meeting ended with a vote of thanks to the Chair.

Date:08/08/2022

(Mahender Choudhary)
PCE & Head

Malaviya National Institute of Technology Jaipur
Department of Mechanical Engineering

Minutes of Meeting

12-08-2022

DFB meeting of the department was held on August 12, 2022, in Mechanical Seminar Hall at 11.00AM. The agenda items discussed in the meeting and resolution/recommendations of the committee are listed below -

Agenda 1: To discuss regarding reducing the number of sanctioned UG Mechanical seats

Background: All HODsof the Departments/Centers was called upon a meeting on dated 4thAugust, 2022.At the meeting, possibility of surrendering the sanctioned number of engineering seats from their centre/department was discussed. Institute wishing to utilize the surrendered seats from the different disciplines of engineering in opening new departments (Based on current industrial and Market demands) or transferring to Computer Science Engineering. The basic intent of all is to check the low rankers to get admitted in MNIT, Jaipur. In this context, the decision of the department upon this matter has to be submitted to Dean office.

Proposal: The proposal of reducing the UG mechanical Engineering seat to 90 is put up for consideration and discussion. The data of placement and JEE Rank are provided in ***Annexure-A (attached)***.

Decision/Resolution:

The DFB deliberated and discussed details of the sanctioned intake of UG Mechanical Engineering. It is recommended to reduce the number of seats to 90 from around 116, including all admission categories. This size of the batch is more effective in utilizing existing infrastructure and also effective for lecturing.

Agenda 2: To discuss over the issue of vacant seats in PG programs, AY 2022-23

Background: The Dean (Academic) has shared the data of filled and vacant seats in various PG programs with all the Heads of the Departments/Centers of the the institute and highlight an alarming number of vacant seats which significantly harming the NIRF Rank of the Institute. Moreover, it is also not good for accreditation of programs.
In this context, HoDsare requested to conduct meeting of DFB and identify measures for improving the situation in next academic yearand send the suggestions/initiatives latest by 14/08/2022. Options such as revising the number of seats, renaming/restructuring the program, merging two or more programs, or even closing the programs or any other innovative method of addressing the issue can be exercised.

Proposal: As per the inputs of PG conveners, the no changes in the number of seats, the name of the program, merging or closing will take place keeping the following points in mind:

- Recently department has reduce the seats to 20.
- Placements are achieved 100 % (approximately) in all the streams. So, it is expected that the in the upcoming years the issue of vacant seats will not be occurring.
- Schemes and syllabus are recently revised as per current state of art.

Apart from this, department will recommend the institute to provide the hostel facilities to all the M. Tech students. This is so because unavailability of hostel accommodation, resulting in vacant seats.

Decision/Resolution:
The PG schemes have been recently revised, reducing the seats to 20 in each stream. The placements of PG students are also improving. Hence, DFB decided not to recommend any change in the number of seats in the PG programs of the department at present. Apart from this, the department will recommend that the institute provides hostel facilities to all the M. Tech students.

Agenda 3: To finalize the requirement of qualification and specialization for upcoming faculty recruitment

Background: The Institute is going to recruit faculty members in the Departments / Centers. Heads of the Departments/Centers are requested to conduct DFB and send minimum educational qualifications and specialization in the attached format (*Annexure-B*) latest by 12/08/2022.

Proposal: The finalization of qualification and specialization for the upcoming recruitment is put up for consideration and discussion.

Decision/Resolution:

The following qualifications and specializations for the upcoming recruitment are decided as:

B.Tech/B.E. or equivalent in Mechanical Engineering/Production Engineering/Mechanical & Production Engineering/Production & Industrial Engineering/Mechanical & Automation Engineering/Manufacturing Processes and Automation Engineering/Manufacturing Engineering

M.Tech/M.E or equivalent in Design/Industrial/Production/Thermal or any other relevant specialization.

PhD in relevant discipline

Agenda 4: Space creation, allocation and renovation of existing lab in the workshop

Background: There is space the requirement for the developing new approved labs or extension/upgradation of existing labs. Further, many lab in-charges have submitted the proposal for renovating the existing labs citing their bad state or installation of new lab equipment which is under procurement process.

Proposal: To remove Boiler, Wind tunnel and Steam Engine from mechanical workshop to create space. The space created around the boiler and wind tunnel used for developing UG laboratory (Material testing and heat transfer lab,Product Deign and Development lab). Moreover, Renovation of RAC, IC Engine automobile lab with SS ceiling, Kota stone flooring , partition etc as proposed by lab-in charges .

Decision/Resolution:

Steam-engine and Boiler are antique items. Hence they should not be written off. *To vacant the space and make them more visible in the institute, the DFB resolved to relocate the Boiler and Steam Engine from the mechanical workshop to the lawn area in front of the mechanical department. They should be provided a shelter over it along with the laying of interlock tiles around it. The Wind tunnel maybe get repaired and used in the laboratory.*
The matter regarding the renovation of RAC, IC Engine, automobile lab with SS ceiling, Kota stone flooring, partition, etc. is referred to the departmental resource committee.

Head
Department of Mechanical Engineering
12/8/2022

Malaviya National Institute of Technology Jaipur

Department of Metallurgical and Materials Engineering

Minutes of DUGC Meeting

Date: 22/09/2022

DUGC Meeting was held at the HOD's office on 22/09/2022 3:00 p.m.

Attendees:

1. Prof. Dipender Pandel (HoD)
2. Prof. Rajendra Kumar Goyal
3. Dr. Krishna Kumar
4. Dr. Swati Sharma
5. Dr. Vijay Narasimha Nimmakayala (Convener, DUGC)
6. Dr. Jyotirmaya Kar
7. Dr. Rajesh Kumar Rai
8. Dr. Bal Mukund Mandaliya
9. Dr. Abhishek Tripathi
10. Dr. Sreekumar V.M. (Convener, MUGC)

Agenda:

At the outset, the Chairman, DUGC welcomed the members and following agenda was taken for the consideration.

1. To discuss on the student strength of UG programme

As assigned by the Senate in its 16th meeting, all departments were advised to relook on student strength of current UG programme and to explore the intention of new UG Programme for the future. DUGC discussed about the initiatives and recommended the strength to be 75:00 for the UG programme.

The meeting was ended with the vote of thanks to the chair.

Prof. Dipender Pandel (HoD)

Prof. Rajendra Kumar Goyal (Member)

Dr. Krishna Kumar (Member)

Dr. Swati Sharma (Member)

Dr. Jyotirmaya Kar (Member)

Dr. Rajesh Kumar Rai (Member)

Dr. Bal Mukund Mandaliya (Member)

Dr. Abhishek Tripathi (Member)

Dr. Vijay Narasimha Nimmakayala (Convener, DUGC)

Dr. Sreekumar V.M. (Convener, MUGC)

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MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY
Department of Computer Science and Engineering
FILE NO. .....

Note Sheet

Date : 25/11/2022

Subject: The New B.Tech. Program to be started from the session 2023-24.

With reference to the subject, the Department has conducted DFB's on Oct 13, 2022 and Nov 10, 2022 and the minutes for the same are attached herewith for your kind reference. The following recommendations are made by the DFB:

1. There was no unanimous decision in the DFB on title of the new B.Tech. program and it is recommended that the competent authority may take decision on the same and following titles are proposed:
   (a) B.Tech in Artificial Intelligence and Data Science
   (b) B.Tech in Artificial Intelligence and Machine Learning
2. The intake for the new B.Tech. program is proposed as 40.
3. There is no change recommended for the intake of existing B.Tech. (CSE) program.
4. It is recommended that the new scheme to be implemented for the existing B.Tech. I year students and therefore the existing B.Tech. II year students may not be allowed for taking B.Tech Major and Minor courses from July 2023 onwards.
5. The B.Tech. Minor course strength was decided as 30 maximum and the maximum no. of students allowed per branch as 10. CGPA requirement will be as per the institute guidelines and separate sections shall be created for running these courses which will start from July 2024.
6. The B.Tech Major course strength was decided as 15 with minimum CGPA as 8.0. These courses will be run along with M.Tech. course slots.

Submitted for your kind perusal and action.

25/11/2022

(Dinesh Gopalani)
HoD, CSE

PIDAA/139
28/11/2022

Dean, Academics

28/11/22

New Scheme file. Pls send a copy of the note-sheet to Prof. Vineet Sahula

P.T.O.

Convener of the Committee for revision & strength
and for new UG programmes.

Chakraborty
29/11/22

→ UGI/II

Annexure

→ Dean Academics

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

MINUTES OF DEPARTMENTAL FACULTY BOARD MEETING

A meeting of DFB was convened on October 13 (Thursday) at 4:00 PM in the committee room. The following members were present:

1. Dr. Arka Prokash Mazumdar
2. Dr. Ashish Kumar Tripathi
3. Dr. Deepak Ranjan Nayak
4. Dr. Dinesh Gopalani, Head
5. Dr. Emmanuel S Pilli
6. Prof. Girdhari Singh
7. Dr. Jyoti Grover
8. Dr. Lavika Goel
9. Dr. Mahipal Jadeja
10. Dr. Mushtaq Ahmed
11. Dr. Namita Mittals
12. Dr. Neeta Nain (online)
13. Dr. Yogesh Kumar Meena

The following faculty members could not attend the meeting:

1. Dr. Dinesh Kumar Tyagi
2. Dr. Meenakshi Tripathi
3. Dr. Ramesh Babu Battula
4. Dr. Satyendra Singh Chouhan
5. Dr. Smita Naval
6. Prof. Vijay Laxmi

Dr. Dinesh Gopalani, Head and Chairperson DFB welcomed all the faculty members.

The various agenda points were discussed & following decisions were taken:

2021-2022/12.1 Title and intake of the new B.Tech. Program to be started from the session 2023-24

1. The DFB proposed two titles for the new B.Tech program : (a) B.Tech in Artificial Intelligence and Data Science and (b) B.Tech in Artificial Intelligence and Machine Learning.
2. The DFB finalized the intake as 40 for the new B.Tech program.

2021-2022/12.2 Revised intake of the existing B.Tech. (CSE) program

1. The DFB suggested the revised intake to remain unchanged for the existing B.Tech program.

2021-2022/12.3 Proposal of new B.Tech program in Quantum Computing

1. The DFB discussed the possibility of a new B.Tech program in multidisciplinary Quantum Computing.

Recorded by
Dr. Lavika Goel
Assistant Professor

Approved by
Dr. Dinesh Gopalani
Associate Professor and Head

Date: October 13, 2022
Place: Jaipur

Format for submission of proposals for starting any of the following category of programs/entities

(Tick one or more of the following categories)

a) New UG Program
b) New PG Program
c) New Department/ Conversion from Centre to Department
d) New Centre of Excellence

I. BACKGROUND INFORMATION

Information required	Applicable for categories	Detailed Response
Name of proposed program/department/entity	a, b, c, d	B.Tech in AI and Machine Learning/AI and Data Science
Primary contact person from the proposing team for administrative purpose	a, b, c, d	Dinesh Gopalani, Neeta Nain and Satyendra Singh Chouhan
Name of Coordinating Department/Centre	a, b, d	Department of Computer Science and Engineering
Other depts./centres, directly involved through labs, courses, faculty etc.	a, b, c, d	Management, Basic Sciences, Mathematics
Justification and need of the initiative (min 500 words)	a, b, c, d	The importance of Artificial Intelligence, Machine Learning, and Data Science is growing exponentially as these technologies are increasingly used in everyday life to improve products and services and to enhance the decision-making process. Artificial intelligence is the construction of artificial systems that have intelligent behavior. At the same time, machine learning is a more specialized discipline of AI that uses algorithms and statistical models to create computer systems that can learn for themselves to build intelligent systems. Computer Science concerns understanding, designing, implementing, and using computing systems that range in scale and complexity. This mixture of complementary and overlapping aspects make Artificial Intelligence, Machine Learning, and Data Science a good degree combination under the ages of the Department of Computer Science and Engineering

Other prominent institutes in the country offering similar program/running similar entities	a, b, c, d	IIT Delhi, IIIT Hyderabad, IIT Jodhpur, IIT Mandi
Prominent international institutes offering similar program/running similar entities	a, b, c, d	Stanford University, Michigan State University, the University of Edinburgh
Differentiating factor for MNITJ w.r.t. above institutes (min 200 words)	a, b, c, d	We aim to provide a programme of study that combines AI, machine learning, data science, statistics, and mathematics. The motivation is to understand natural intelligence through computer models capable of building systems for intelligent decisions and actions.
Is there any government/national mandate/alignment with National Missions/SDG fulfillment for starting new program	a, b, c, d	NA
Major funding agencies that may be approached for supporting the program/running the entities	a, b, c, d	NA
Name of five prominent national experts operating similar programs/entities	a, b, c, d	1. Prof. P. J. Narayanan, Director IIIT Hyderabad 2. Prof. Shantanu Chowdhary, Director IIT Jodhpur 3. Prof. Subhasis Chaudhuri, Director IIT Bombay 4. Prof. Umesh Bellur, IIT Bombay 5. Prof. Rajeshwari Sridhar, NIT Trichi

II. STRENGTHS

Information required	Applicable for categories	Detailed Response
Team initiating the new program/entity: (Min 4 members for PG program/ 6 for UG program/ 5 for new department, Min 5 members from at least 3 different departments for CoE)	a, b, c, d	Neeta Nain, Namita Mittal, Yogesh kumar Meena, Satyendra Singh Chouhan, Deepak Ranjan Nayak, Ashish Kumar tripathi, Mahipal Jadeja
Existing credit courses taught by team members in relevant area over the past three years	a, b, c, d	1. Machine Learning 2. Computer Vision 3. Pattern Recognition 4. Deep learning 5. Data Science 6. Parallel and Distributed Computing 7. Artificial Neural Networks 8. Information Retrival 9. Natural Langauge Processing
Present SFR of participating departments/centres	a, b, c, d	20.35
Ongoing research projects of team members in relevant area	a, b, c, d	1. Child Face Age Progression and Regression to Trace Missing Children 2. Demand Response Management platform in Smart Grid for Effective Performance 3. Forecasting Significant Social Events by Predictive Analytics over Streaming Open Source Data 4. Detecting Suspicious Users in Social Networks Using Text Analysis 5. Disruptive event Prediction using Continual Machine Learning 6. Prototype Development of Artificial Intelligence based Portable Computer Aided Diagnosis System for Silicosis 7. Automated Glaucoma Detection and Analysis in Retinal Fundus Images using Deep Learning Algorithms 8. Automated Maze Leaf Disease and Weed Detection in Extreme

		Weather Conditions Using Deep Neural Networks 9. Design and development of efficient methods for food quality assessment using computer vision.
Relevant publications by team members in proposed area over past three years	a, b, c, d	1. Praveen Kumar Chandaliya and Neeta Nain, "AW-GAN: face aging and rejuvenation using attention with wavelet GAN" , Neural Computing and Applications Volume :s00521-022 / 1-15 / 2022 2. Gopal Behra and Neeta Nain, "GSO-CRS:Grid Search Optimization For Collaborative Recommendation System" , Sadhana Volume :48 / 1-10 / 2022 3. Praveen Kumar Chandaliya and Neeta Nain, "PlasticGAN: Holistic generative adversarial network on face plastic and aesthetic surgery" , Multimedia Tools and Applications, Springer Volume :2022/4/12 / 1-22 / 2022 4. Praveen Kumar Chandaliya and Neeta Nain, "ChildGAN: Face aging and rejuvenation to find missing children" , Pattern Recognition Volume :129 / 108761 / 2022 5. Gopal Behra, Neeta Nain, "Handling data sparsity via item metadata embedding into deep collaborative recommender system" , Journal of King Saud University-Computer and Information Sciences Volume :2022 / 1-15 / 2022 6. Sandeep Kumar Gupta, Seid Hassan Yusuf, Neeta Nain, "Real-Time Gender Recognition for Juvenile and Adult Faces" , Computational Intelligence and Neuroscience Volume :2022 / 1-15 / 2022 7. Sandeep Kumar Gupta and Neeta Nain, "REVIEW: SINGLE ATTRIBUTE AND MULTI ATTRIBUTE FACIAL

		GENDER AND AGE ESTIMATION" , Multimedia Tools and Applications Volume :80 / 1-20 / 2020 8. Riti Kushwaha and Neeta Nain, "A Texture Feature Based Approach for Person Verification using Footprint Bio-metric" , Artificial Intelligence Review Volume :54 / 1-31 / 2020 9. Vijay Kumar Sharma, Namita Mittal, Ankit Vidyarthi, Deepak Gupta, "Exploring Web-based Translation Resources Applied to Hindi-English Cross-Lingual Information Retrieval" , ACM Transactions on Asian and Low-Resource Language Information Processing Volume :1 / 19 / 2023 10. Kapil Pareek, Arjun Choudhary, Ashish Tripathi, KK Mishra, Namita Mittal, "Hate and Aggression Detection in Social Media Over Hindi English Language" , International Journal of Software Science and Computational Intelligence Volume :14 / 1-20 / 2022 DOI: 10.4018/IJSSCI.30035 11. Vijay Kumar Sharma, Namita Mittal, Ankit Vidyarthi, "Context-based translation for the out of vocabulary words applied to hindi-english cross-lingual information retrieval" , IETE Technical Review Volume :39 / 276-285 / 2022 DOI: https://doi.org/10.1080/02564602.2020.1843553 12. Pawan Lahoti, Namita Mittal, G Singh, "A Survey on NLP resources, tools and techniques for Marathi Language Processing" , Transactions on Asian and Low-Resource Language Information Processing Volume :1 / 1-34 / 2022 DOI: https://doi.org/10.1145/3548457

		13. Shikha Mundra, Namita Mittal, "CMHE-AN: Code mixed hybrid embedding based attention network for aggression identification in hindi english code-mixed text" , Multimedia Tools and Applications, Springer Volume :- / / 2022 DOI: - 14. Shikha Mundra, Namita Mittal, "FA-Net: fused attention-based network for Hindi English code-mixed offensive text classification" , Social Network Analysis and Mining Volume :12 / / 2022 DOI: 10.1007/s13278-022-00929-1 15. ML Joshi, N Mittal, N Joshi, "Improving the Performance of Semantic Graph-Based Keyword Extraction and Text Summarization Using Fuzzy Relations in Hindi Wordnet" , Journal of Intelligent & Fuzzy Systems Volume :1 / 1-18 / 2022 16. Ganpat Singh Chauhan, Yogesh Kumar Meena, Dinesh Gopalani, Ravi Nahta, "A mixed unsupervised method for aspect extraction using BERT" , Multimedia Tools and Applications, Springer Volume :81 / 31881-31906 / 2022 DOI: https://doi.org/10.1007/s11042-022-13023-7 17. Saurabh Ranjan Srivastva, Yogesh Kumar Meena, Girdhari Singh, "Forecasting on Covid-19 infection waves using a rough set filter driven moving average models" , Applied Soft Computing, Elsevier Volume :131 / / 2022 DOI: https://doi.org/10.1016/j.asoc.2022.109750 18. Ritu Sharma, Dinesh Gopalani, Yogesh Kumar Meena, "An anatomization of research paper recommender system: Overview, approaches and challenges" , Engineering Applications of

		Artificial Intelligence Volume :118 / / 2022 DOI: https://doi.org/10.1016/j.engappai.2022.105641 19. Ravi Nahta, Dinesh Gopalani, Yogesh Kumar Meena, Ganpat Singh Chauhan, "Embedding Metadata using Deep Collaborative Filtering to Address the Cold Start Problem for the Rating Prediction Task" , Multimedia Tools and Applications Volume :80(12) / 18553-18581 / 2021 DOI: https://doi.org/10.1007/s11042-021-10529-4 20. Ravi Nahta, Yogesh Kumar Meena, Dinesh Gopalani, Ganpat Singh Chauhan, "Two-step hybrid collaborative filtering using deep variational Bayesian autoencoders" , Information Sciences Volume :562 / 136-154 / 2021 DOI: https://doi.org/10.1016/j.ins.2021.01.083 21. Ravi Nahta, Yogesh Kumar Meena, Dinesh Gopalani, Ganpat Singh Chauhan, "A hybrid neural variational CF-NADE for collaborative filtering using abstraction and generation" , Expert Systems with Applications Volume :179 / 115047 / 2021 DOI: https://doi.org/10.1016/j.eswa.2021.115047 22. Jitendra Parmar, Satyendra Singh Chouhan, Vaskar Raychoudhury, "A machine learning based framework to identify unseen classes in open-world text classification", Information Processing and Management Volume 60, pages 1-18, 2023 (Impact Factor: 6.222) 23. Jitendra Parmar, SS Chouhan, Vaskar Raychoudhury, Santosh S Rathore, "Open-world Machine

		Learning: Applications, Challenges, and Opportunities", ACM Computing Surveys, 2022,1-42, 2022 (Impact factor: 14.34) 24. Santosh Singh Rathore, Satyendra Singh Chouhan, Dixit Kumar Jain, and Aakash Gopal Vachhani, "Generative Oversampling Methods for Handling Imbalanced Data in Software Fault Prediction", IEEE Transactions on Reliability, Volume 71, pages 747 - 762, 2022 (impact factor 5.87). 25. Sanskar Soni, Satyendra Singh Chouhan, Santosh Singh Rathore, "TextConvoNet: A Convolutional Neural Network based Architecture for Text Classification", Applied Intelligence (online fist), pages 1-20, 2022 (Impact factor: 5.09) 26. Satyendra Singh Chouhan and Santosh Singh Rathore. Generative adversarial networks-based imbalance learning in software aging-related bug prediction. IEEE Transactions on Reliability, pages 1-16, volume 70, 2021 (Impact factor 5.87). 27. Monika Choudhary, Satyendra Singh Chouhan, Emmanuel S. Pilli, Santosh Kumar Vipparthi, "BerConvoNet: A deep learning framework for fake news classification", Applied Soft Computing, Vol 110, pages 1-11, 2021 (Impact factor: 6.725) 28. Soumya Ranjan Nayak, Deepak Ranjan Nayak, Utkarsh Sinha, Vaibhav Arora, Ram Bilas Pachori, "An Efficient Deep Learning Method for Detection of COVID-19 Infection using Chest X-ray Images" , Diagnostics Volume :13 / 00-00 / 2023 DOI: 10.3390/diagnostics13010131 29. Himanshu K. Gajera, Deepak Ranjan Nayak, Mukesh A. Zaveri,

		"A Comprehensive Analysis of Dermoscopy Images for Melanoma Detection via Deep CNN Features" , Biomedical Signal Processing and Control, Elsevier Volume :79 / 00-00 / 2022 DOI: https://doi.org/10.1016/j.bspc.2022.104186 30. Amogh M Joshi, Deepak Ranjan Nayak, Dibyasundar Das, Yu-Dong Zhang, "LiMS-Net: A Lightweight Multi-Scale CNN for COVID-19 Detection from Chest CT Scan" , ACM Transactions on Management Information Systems (Accepted) Volume :00 / 00-00 / 2022 31. Amogh M Joshi, Deepak Ranjan Nayak, "MFL-Net: An Efficient Lightweight Multi-Scale Feature Learning CNN for COVID-19 Diagnosis from CT Images" , IEEE Journal of Biomedical and Health Informatics (Formerly known as IEEE Transactions on Information Technology in Biomedicine) Volume :26 / 5355 - 5363 / 2022 DOI: 10.1109/JBHI.2022.3196489 32. Himashu K Gajera, Mukesh A Zaveri, Deepak Ranjan Nayak, "Patch based Local Deep Feature Extraction for Automated Skin Cancer Classification" , International Journal of Imaging Systems and Technology Volume :00 / 00-00 / 2022 33. Vivek Sharma, Ashish KumarTripathi, "A systematic review of meta-heuristic algorithms in IoT based application" , Array Volume :14 / 1-6 / 2022 DOI: https://doi.org/10.1016/j.array.2022.100164 34. Himanshu Mittala, Ashish Kumar Tripathi, Avinash Chandra Pandeyc, Mohammad Dahman Alshehrid, Mukesh Saraswata, Raju

		Pal, "A new intrusion detection method for cyber-physical system in emerging industrial IoT" , Computer Communications Volume :190 / 24-35 / 2022 35. Raju Pal, Ashish Kumar Tripathi, Avinash Chandra Pandey, Mohammad Ayoub Khan, Varun G. Menon, Himanshu Mittal, "A N2CNN-Based Anomaly Detection Method for Cardiovascular Data in Cyber-Physical System" , IEEE Transactions on Network Science and Engineering Volume :EA / 1-10 / 2022 DOI: 10.1109/TNSE.2022.3188881 36. Himanshu Mittal1, Ashish Kumar Tripathi, Avinash Chandra Pandey, P. Venu, Varun G. Menon, Raju Pal, "A novel fuzzy clustering-based method for human activity recognition in cloud-based industrial IoT environment" , Wireless Networks Volume :EA / / 2022 DOI: https://doi.org/10.1007/s11276-022-03011-y 37. Vivek Sharmaa, Ashish KumarTripathi, Himanshu Mittal, "Technological revolutions in smart farming: Current trends, challenges & future directions" , Computers and Electronics in Agriculture Volume :201 / / 2022 DOI: https://doi.org/10.1016/j.compag.2022.107217 38. Avinash Chandra Pandey, Ankur Kulhari, Himanshu Mittal, Ashish Kumar Tripathi, Raju Pal, "Improved exponential cuckoo search method for sentiment analysis" , Multimedia Tools and Applications, Springer Volume :Accepted / / 2022 DOI: https://doi.org/10.1007/s11042-022-14229-5

		39. Vivek Sharma, Ashish Kumar Tripathi, Himanshu Mittal, Abhishek Parmar, Ashutosh Soni, Rahul Amarwal, "WeedGan: a novel generative adversarial network for cotton weed identification" , The Visual Computer Volume :Accepted / / 2022 DOI: https://doi.org/10.1007/s00371-022-02742-5
Ongoing national/international collaborations in the relevant area	a, b, c, d	1. Collaborative Research on Evaluating Smart-Phone Based Fingerprint Recognition Technologies for Rural Population, Bill and Melinda Gates Foundation through MSU, USA 2. Open world Machine learning, Miami University, USA
Ongoing industry engagements in the relevant area	a, b, c, d	1. NVIDIA GPU Grant, Titan V 2. Doremon Labs
Existing infrastructure/facilities/IP available with the proposing team created through their previous grant/institutional support/research that will be useful for the proposed program/entity	a, b, c, d	Department of CSE's existing Labs and Lecture theaters can be used

III. REQUIREMENTS

Information required	Applicable for categories	Detailed Response
Does the entity require separate/additional space: Yes/no	a, b, c, d	Yes
If answer to above question is yes, give breakup of space requirement with justification	a, b, c, d	We need space for 1. 3 Lecture theaters in VLTC 2. 6 well-established labs (initially we will use Dept CSE and Computer center labs) 3. 6 Faculty rooms in the first year which will gradually increase every year.
Does the program/entity require financial support from the Institute: Yes/no	a, b, c, d	Yes for developing UG Labs

If answer to above question is yes, give financial requirement with justification over next 5 years	a, b, c, d	1. I yr we will use Central Computer labs 2. II yr onwards Approx. 2 cr for 3 new UG labs (1 additional lab per yr) with 60 systems each (@Rs 50k) and office infrastructure.
Does the program/entity require additional faculty/guest faculty/staff/technicians/infrastructure: Yes/No	a, b, c, d	Yes
If answer to above question is yes, please give specific (faculty/guest faculty/technician/staff) requirement with justification	a, b, c, d	1. I yr 4 + 2 (Faculty + Guest faculty) (15:1 as per rules) 2. II yr (120 students) 5 new faculty required (9 faculty by II yr) 3. Along with the above, we need nine more guest faculty by the third/ fourth year.
Central facilities required	a, b, c, d	Central Labs (6) and Lecture Theatres (3)
Additional teaching load created to float the proposed program	a, b	
Proposed student Intake of program	a, b	40
Nature of program: Full time/ Part time/ Online/any other	a, b	Full Time
Is the program to be run under SFS mode (Yes/no)	a,b	No
If answer to the above question is yes, proposed fee structure for the program	a, b	-
Curriculum details (preferably through curriculum dev. workshop) in the relevant area	a, b	Scheme and DFB minutes are Attached
Proposed admission Process: for example JEE/CCMT/own test…	a, b	JEE

IV. PROJECTED OUTCOMES FOR FUTURE EVALUATION

Information required	Applicable for categories	Detailed Response
Expected placement for graduating students (names of at least 10 companies/organizations as potential recruiters)	a, b	1. Google 2. Facebook 3. Amazon 4. TCS 5. Infosys 6. HCL

		7. Wipro 8. Tech Mahindra Ltd 9. Deshaw 10. Arcesium
Expected revenue generation (IRG)	a, b, c, d	Institute Fees as any other B.Tech program
Target mean graduating student feedback score indicating achievement on all defined outcomes on scale 1 to 10	a, b	8
Expected yearly research output from the entity over next 5 years	c, d	NA
Expected yearly consultancy/funding output from the program over next 5 years	c, d	NA
Expected other outcomes, including social outreach, from the entity over the next 5 years	c, d	NA
Does the entity plan to start any new UG/PG program over next five years: Yes/No	c, d	NA
If answer to above question is yes, please give the plans/need with justification	c, d	NA

Guidelines for filling the form:

1. Complete details are be provided in the space provided, expanding it as needed or as annexures.
2. All relevant cells for any category are to be filled.
3. The projections submitted through this form will also be used for evaluating the performance of the new program/department/Centre in subsequent years, at least once after three years and five years.

13/01/2023

(Head, CSE)

Department of Computer Science and Engineering

B.Tech in Artificial Intelligence and Machine Learning / AI and Data Science (Proposed)

First Year

S.	Code	Subject	L-T-P	Credi	Sub.	
		Institute Core Subjects		*18*	*IC*	
		Problem Solving using C/ Fundamentals of CS	2-0-2	3	PC	7 Departmental Credits
		Discrete Mathematics	3-0-0	3	PC	
		Programming with Python			IC	
				24		

S.	Code	Subject	L-T-P	Credi	Sub.	
		Institute Core Subjects		*18*	*IC*	
		Data Structures	3-0-0	3	PC	7 Departmental Credits
		Foundations of Learning	2-0-0	2	PC	
		Data Structures Lab	0-0-3	2	PC	
		Programming with Python			IC	
				25		

Second Year

Third Semester

S.	Code	Subject	L-T-P	Credi		
		Digital systems and C A	3-1-0	4	PC	25 Departmental Credits
		DAA	3-0-0	3	PC	
		AI	3-0-0	3	PC	
		Foundations of data science	3-1-0.	4	PC	
		Social Sciences and Professional Ethics	3-0-0	3	EAS	
		TOC	3-0-0	3	PC	
		DS Lab	0-0-3	2	PC	
		DAA Lab	0-0-3	2	PC	
		AI Lab	0-0-3	2	PC	
				26		

Fourth Semester

S.	Code	Subject	L-T-P	Credi		
		ANN	3-0-0	3	PC	25 Departmental Credits
		OS	3-0-0	3	PC	
		Compiler	3-0-0	3	PC	
		Machine Learning	3-0-0	3	PC	
		DBMS	3-0-0	3	PC	
		Software Engineering	3-0-0	3	PC	
		Technical Writing	1-0-2	2	PC	
		ML Lab	0-0-3	2	PC	
		DBMS Lab	0-0-3	2	PC	
		System Programming Lab	0-0-3	2	PC	
				26		

Possible Subject Types

Institute Core	IC	36
Program Core, Program Electives, Advance Electives	PC, PE, and AE	120
Program linked BS and EAS		6
Mangement		3
Open elective	OE	6
Projects		9
		180

Note:
Among all the departmental credits in 8 semester, at least 3 to 15 credits are to be assigned to EAS/BS subjects

19/01/2023
(Head, CSE)

Third Year

Fifth Semester						
S.	Code	Subject	L-T-P	Credi	Sub.	
		Management	3-0-0	3	Mgt	21 Departmental Credits
		DATA Analytics	3-0-0	3	PC	
		DIP	3-0-0	3	PC	
		CN	3-0-0	3	PC	
		Program Elective-1	3-0-0	3	PE	
		CN Lab	0-0-3	2	PC	
		DIP Lab	0-0-3	2	PC	
		Data Analytics lab	0-0-3	2	PC	
				21		
Honors						
		Bio Medical Engineering		3		6 Credit
		Surveillance and Video		3		
				6		
Minor CSE						
						6 Credit

Sixth Semester						
S.	Code	Subject	L-T-P	Credi	Sub.	
		Deep Learning	3-0-0	3	PC	21 Departmental Credits
		NLP	3-0-0	3	PC	
	Mech	OR/Industry 4.0	3-0-0	3	EAS	
		Program Elective-2	3-0-0	3	PE	
		IOT and Robotics	3-0-0	3	PC	
		Deep Learning Lab	0-0-3	2	PC	
		NLP Lab	0-0-3	2	PC	
		IOT and Robotics Lab	0-0-3	2	PC	
				21		
Honors						
		HE-1		3		6 Credit
		HE-2		3		
				6		
Minor CSE						
						6 Credit

Note:
Among all the departmental credits in 8 semester, at least 3 to 15 credits are to be assigned to EAS/BS subjects

Fourth Year

Seventh Semester						
S.	Code	Subject	L-T-P	Credi		
1		Open Elective - 1		3	OE	18 Departmental Credits
2		Minor Project		3		
		Training Seminar		2		
		Advance Elective-1	3-0-3	5	AE	
		Advance Elective-2	3-0-3	5	AE	
				18		
Honors						
		HE-3		3		3 Credit
				3		
Minor CSE						
						3 Credit

Eighth Semester					
S.	Code	Subject	L-T-P	Credi	
1		Open Elective - 2	3-0-0	3	OE
2		Major Project		6	
		Advance Elective-3	3-0-3	5	AE
		Advance Elective-4	3-0-3	5	AE
				19	
Honors					
		HE-4		3	
				3	
Minor CSE					

18 Departmental Credits

3 Credit

3 Credit

(Mech, CSE) 15/01/2023

Malaviya National Institute of Technology Jaipur

Materials Research Centre

J.L.N. MARG, JAIPUR-302017

Minutes of the Meeting of Department Faculty Board held on 21st December 2022 at 4:30 PM in the office of Head, MRC and via online mode.

The meeting of the Department Faculty Board was held on 21st December 2022 at 4:30 PM in hybrid mode in the office of Head, MRC, MNIT Jaipur, and via Google meet, chaired by Dr. Bhagwati Sharma, Head, Materials Research Centre, MNIT Jaipur. The following members were present:

1.	Dr. Bhagwati Sharma	Chairperson
2.	Prof. Kanupriya Sachdev	Member (present online)
3.	Prof. Ragini Gupta	Member
4.	Dr. Nisha Verma	Member
5.	Dr. Kamakshi Pandey	Member
6.	Dr. Himmat Singh Kushwaha	Secretary

The Chairperson welcomed everyone in the meeting and subsequently agenda items were discussed:

1. Scheme of B. Tech program in Materials Engineering

Dr. Nisha Verma presented the final scheme prepared by the centre for the B. Tech program in Materials Engineering. The committee deliberated the scheme and finalized the scheme as given in Annexure-I.

2. Intake in the B. Tech Program in Materials Science and Engineering

The DFB deliberated on the required intake for the B. Tech program and it was agreed that initially the program should be started with an intake of 25 students.

3. Renaming the M. Tech Program in Materials Science and Engineering to Materials Engineering

The admissions in the M. Tech program run by the centre have been low for the last couple of years. Therefore, it was decided that there should be modifications in the content of the program and the program should be renamed as Materials Engineering.

4. Modifications in the Scheme and courses for M. Tech Program in Materials Engineering

As the admissions in the M. Tech program of the centre has been low since the last two years, it was felt that there should be substantial modifications in the curriculum. The DFB deliberated the matter and

Malaviya National Institute of Technology Jaipur
Materials Research Centre

Course Structure of B. Tech. (Materials Science and Engineering)

Semester I (24)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.		Mathematics I	IC	3-1-0	4
2.		Basics of Electrical and Electronics Engineering	IC	3-0-0	3
3.		Technical Communication skills	IC	2-0-0	2
4.		Physics	IC	2-1-0	3
5.		Electronics Engineering Lab	IC	0-0-2	1
6.		Electrical Engineering Lab	IC	0-0-2	1
7.		Language lab	IC	0-0-2	1
8.		Physics Lab	IC	0-0-2	1
		Total			16
9.		Fundamentals of Engineering Materials	PC	3-1-0	4
10.		Thermodynamics for Materials	PC	3-1-0	4
		Total			24

Semester II (26)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.		Mathematics II	IC	3-1-0	4
2.		Computer Science & Programming	IC	2-0-0	2
3.		Engineering Drawing & Sketching	IC	1-0-2	2
4.		Environmental Science and Ecology	IC	2-0-0	2
5.		Chemistry	IC	2-1-0	3
6.		Basic Economics	IC	2-0-0	2
7.		Introduction to Mechanical Systems	IC	2-0-0	2
8.		Programming Lab	IC	0-0-2	1
9.		Chemistry Lab	IC	0-0-2	1
10.		Product Realization through Manufacturing	IC	0-0-2	1
11.		Properties of materials	PC	3-0-0	3
12.		Physics of Materials	PC	3-0-0	3
		TOTAL			26

Semester III (27)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.		Materials Selection and Design	PC	3-0-0	3
2.		Electronic Materials	PC	3-0-0	3
3.		Phase Equilibrium and transformation	PC	3-1-0	4
4.		Synthesis of Materials	PC	3-1-0	4
5.		Microscopic Characterization of materials	PC	3-1-0	4
6.		Spectroscopic Characterisation of Materials	PC	3-1-0	4
7.		Instrumentation of Techniques (Electronics Components)	PC	2-0-0	2
8.		Electronic Materials Lab	PC	0-0-6	3
		Total			**27**

Semester IV (25)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.		Nanostructured Materials	PC	3-0- 0	3
2.		Structure of Materials	PC	3-1- 0	4
3.		Introduction to Ceramics and glasses	PC	3-0-0	3
4.		Process Design and Economics	PC	3-0-0	3
5.		Computational Materials Engineering	PC	3- 1- 2	5
6.		Introduction to polymer technology	PC	3-0-0	3
7.		Computational Methods Lab	PC	0-0-4	2
8.		Synthesis and characterization of materials Lab-2	PC	0-0-4	2
		Total			**25**

B Sharma

Semester V (22)

S. No..	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.		Biomaterials	PC	3-0- 0	3
2.		Materials for structural applications	PC	3-0-0	3
3.		Program Elective-1	PE	3-0-0	3
4.		Defects in materials	PC	3-1- 0	4
5.		Materials Processing and Manufacturing	PC	3-0-0	3
6.		Synthesis and characterization of materials Lab-3	PC	0-0-4	2
7.		Mechanical Testing Lab	PC	0-0-4	2
8.		Instrumentation of Techniques (Vacuum Technology)	PC	2-0-0	2
		Total			**22**
7.	M/H	MINOR / HONOURS COURSE 1			3
8.	M/H	MINOR / HONOURS COURSE 2			3

Semester VI (21)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.		Semiconductor materials and Devices	PC	3-0-0	3
2.		Degradation of Materials	PC	3-0-0	3
3.		Introduction to Composite Materials	PC	3-0-0	3
4.		Thin Films, Interfaces & Multilayer	PC	3-0-0	3
5.		Scientific Writing and presentation	PC	1-0-2	2
6.		Program Elective-2	PE	3-0-0	3
7.		Thin film Lab	PC	0-0-4	2
8.		Molecular Modelling of devices	PC	0-0-4	2
		Total			**21**
9.	M/H	MINOR / HONOURS COURSE 3			3
10.	M/H	MINOR / HONOURS COURSE 4			3

Semester VII (17)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.		Program Elective-3	PE	3-0-0	3
2.		Program Elective-4	PE	3-0-0	3
3.		Program Elective-5	PE	3-0-0	3
4.		Open Elective-1	OE	3-0-0	3
5.		Training Seminar	PC	0-0-4	2
6.		Minor Project	PC	0-0-6	3
		Total			**17**
7.	**M/H**	**MINOR / HONOURS COURSE 5**		3	3

Semester VIII (18)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.		Program Elective-6	PE	3-0-0	3
2.		Program Elective-7	PE	3-0-0	3
3.		Open Elective-2	OE	3-0-0	3
4.		Major Project (optional)	PC	0-0-18	9
		Total			18
5.	**M/H**	**MINOR / HONOURS COURSE 6**		3	3

B Ravi

List of Program Electives

S. No	Course Name	Category	Credit	"Contact Hrs/Week
1	Structure and Properties of Ceramic Materials	PE	3	3-0-0
2	Advanced Refractory	PE	3	3-0-0
3	Electro-ceramics	PE	3	3-0-0
5	Pollution Control in Ceramic Industries	PE	3	3-0-0
6	Glass Technology & Application/	PE	3	3-0-0
7	Advanced Ceramic Processing	PE	3	3-0-0
8	Ceramics for Biomedical Applications	PE	3	3-0-0
9	Battery Materials	PE	3	3-0-0
10	Carbon Materials for Energy Applications	PE	3	3-0-0
11	Thermoelectric materials and its application	PE	3	3-0-0
12	Energy Harvesting Technologies	PE	3	3-0-0
13	Hydrogen Generation and Storage	PE	3	3-0-0
14	Electrochemical Techniques and Applications	PE	3	3-0-0
15	Polymers for industrial applications	PE	3	3-0-0
16	Advanced polymers	PE	3	3-0-0
17	Polymer Recycling and Waste Management	PE	3	3-0-0
18	Polymers for packaging applications	PE	3	3-0-0
19	Polymer Blends and Alloys	PE	3	3-0-0
20	Rubber Technology	PE	3	3-0-0
21	Paints and coatings	PE	3	3-0-0
22	Finite Element Methods (Offered by ME)	PE	3	3-0-0
23	Characterization of Electronic Materials and Devices	PE	3	3-0-0
24	Processing of Electronic Materials and Devices	PE	3	3-0-0
25	Sensors and Devices	PE	3	3-0-0
26	Next Generation Electronic Materials and Applications	PE	3	3-0-0

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

MATERIALS RESEARCH CENTRE

Components of the Curriculum

B. Tech in Materials Science and Engineering

Course Component	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total Number of credits
Basic Science	9	18	16
Engineering Science	8	18	15
Humanities and social science	3	6	5
Program Core	57	121	105
Program Elective	12	21	21
Open Elective	3	6	6
Projects	7	24	12
Internship/Seminar	1	4	2
Total	**100**	**216**	**180**

Format for submission of proposals for starting any of the following category of programs/entities

(Tick one or more of the following categories)

a) **New UG Program** ☑
b) **New PG Program**
c) **New Department/ Conversion from Centre to Department**
d) **New Centre of Excellence**

I. BACKGROUND INFORMATION

Information required	Applicable for categories	Detailed Response
Name of proposed program/department/entity	a, b, c, d	B.Tech in Materials Science and Engineering
Primary contact person from the proposing team for administrative purpose	a, b, c, d	Dr. Bhagwati Sharma/Dr. Nisha Verma
Name of Coordinating Department/Centre	a, b, d	Materials Research Centre
Other depts./centres, directly involved through labs, courses, faculty etc.	a, b, c, d	NA
Justification and need of the initiative (min 500 words)	a, b, c, d	New materials are the pathway to improve the quality of human life since the very beginning. It is considered among the greatest achievement as it bring with it evolution and privileged circumstances. Material Scientist and Engineers trained in multidisciplinary environment can contribute in new technologies in various engineering branches i.e civil, chemical, construction, nuclear, aeronautical, agriculture, mechanical, biomedical and electrical engineering. Academic field pertaining to the materials science and technology crystalize from the fact that application specific materials project would require designing, processing and characterisation, demanding a trained human resource. Any property, either mechanical strength or electrical or resistance to heat or corrosion, they all are intimately related to materials structure at all

		levels, starting from the atom selection, bonding between atoms, how atoms are arranged in the materials. With this branch of science and technology, students will be able to appropriately engineer these structures to create material with desired properties through an appropriate processing technique. Materials Engineering syndicates engineering, physics and chemistry fundamentals to solve real-world problems associated with nanotechnology, biotechnology, information technology, energy, manufacturing and other major engineering disciplines. The techniques students gain from this course would help in employability
Other prominent institutes in the country offering similar program/running similar entities	a, b, c, d	NIT Calicut/ NIT Hamirpur/IIT Kanpur/ IIT Delhi/ IIT Gandhinagar/ IIT Jodhpur/ IIT BHU/IIT Jammu
Prominent international institutes offering similar program/running similar entities	a, b, c, d	UC Santa Barbara/ Stanford University/Massachusetts Institute of Technology/Northwestern University
Differentiating factor for MNITJ w.r.t. above institutes (min 200 words)	a, b, c, d	MNIT Jaipur has a unique Materials Characterisation Centre, which is not existing in many of the NITs and new IITs. This facility adds additional value to the B.Tech degree in Materials Engineering as this helps student gain practical knowledge, highly valued at industries.
Is there any government/national mandate/alignment with National Missions/SDG fulfillment for starting new program	a, b, c, d	Nano Mission/ Materials for energy Storage/ India semiconductor mission/Make in India/ Clean Energy Materials
Major funding agencies that may be approached for supporting the program/running the entities	a, b, c, d	NA
Name of five prominent national experts operating similar programs/entities	a, b, c, d	IIT Kanpur/ IIT Delhi/ IIT Gandhinagar/ IIT Jodhpur/ IIT BHU/NIT Calicut

II. STRENGTHS

Information required	Applicable for categories	Detailed Response
Team initiating the new program/entity: (Min 4 members for PG program/ 6 for UG program/ 5 for new department, Min 5 members from at least 3 different departments for CoE)	a, b, c, d	6 faculties for UG course: Dr. Bhagwati Sharma Dr. Nisha Verma Dr. Kamakshi Dr. Himmat Singh Khushwaha Prof. Kanupriya Sachdev Prof. Ragini Gupta
Existing credit courses taught by team members in relevant area over the past three years	a, b, c, d	All the above mentioned faculties are teaching credit courses for M.Tech titled "Materials Science and Engineering"
Present SFR of participating departments/centres	a, b, c, d	Currently, there is no UG program in Materials Research Centre, hence it is Not applicable.
Ongoing research projects of team members in relevant area	a, b, c, d	1. Development of Optoelectrochemical sensor for detection of Ions and Pesticides in Drinking & Irrigation Water 2. Solar Redox Flow Batteries 3. Phase stability of immiscible systems under irradiation-a case study for CuTa alloy 4. In-situ Synthesis of TiC-Ti_5SiC_2 super hard and tough Nanocomposite for Cutting Tool Applications and Its Evaluation.
Relevant publications by team members in proposed area over past three years	a, b, c, d	Annexure A
Ongoing national/international collaborations in the relevant area	a, b, c, d	1. Prof Vikram Jayaram, IISc Bangalore 2. Prof Robert Averbeck, UIUC, USA 3. Dr. Tridib Kumar Sarma, IIT Indore 4. Dr. Rahul Vaish, IIT Mandi 5. Sebastien Royer, University de Lille 6. Dr. Tarun Sharda, Technos Instrument, Jaipur
Ongoing industry engagements in the relevant area	a, b, c, d	
Existing infrastructure/facilities/IP available with the proposing team created through their previous grant/institutional support/research that will be useful for the proposed program/entity	a, b, c, d	Materials Research Centre

III. REQUIREMENTS

<table>
<tr><th>Information required</th><th>Applicable for categories</th><th>Detailed Response</th></tr>
<tr><td>Does the entity require separate/additional space: Yes/no</td><td>a, b, c, d</td><td>Yes</td></tr>
<tr><td>If answer to above question is yes, give breakup of space requirement with justification</td><td>a, b, c, d</td><td>1. B.Tech Labs – 3
(Capacity of 30 each)
2. Lecture classrooms – 4
3. Tutorial rooms - 4</td></tr>
<tr><td>Does the program/entity require financial support from the Institute: Yes/no</td><td>a, b, c, d</td><td>Yes</td></tr>
<tr><td>If answer to above question is yes, give financial requirement with justification over next 5 years</td><td>a, b, c, d</td><td>Financial support from the institute will be required for recruitment of additional faculty, staff and development of B.Tech labs and classrooms</td></tr>
<tr><td>Does the program/entity require additional faculty/guest faculty/staff/technicians/infrastructure: Yes/No</td><td>a, b, c, d</td><td>Yes</td></tr>
<tr><td>If answer to above question is yes, please give specific (faculty/guest faculty/technician/staff) requirement with justification</td><td>a, b, c, d</td><td>Faculty requirement:
<table>
<tr><th>Year</th><th>Faculty</th><th>Courses</th></tr>
<tr><td>2023-24</td><td>2</td><td>1-1</td></tr>
<tr><td>2024-25</td><td>5</td><td>7-8</td></tr>
<tr><td>2025-26</td><td>5</td><td>12-13</td></tr>
<tr><td>2026-27</td><td>7</td><td>14-15</td></tr>
</table>
Lab Technician – 4
Attendant - 2</td></tr>
<tr><td>Central facilities required</td><td>a, b, c, d</td><td>1. MRC
2. Central library
2. ICT facilities</td></tr>
<tr><td>Additional teaching load created to float the proposed program</td><td>a, b</td><td></td></tr>
<tr><td>Proposed student Intake of program</td><td>a, b</td><td>30</td></tr>
<tr><td>Nature of program: Full time/ Part time/ Online/any other</td><td>a, b</td><td>Full time</td></tr>
<tr><td>Is the program to be run under SFS mode (Yes/no)</td><td>a,b</td><td>No</td></tr>
<tr><td>If answer to the above question is yes, proposed fee structure for the program</td><td>a, b</td><td></td></tr>
<tr><td>Curriculum details (preferably through curriculum dev. workshop) in the relevant area</td><td>a, b</td><td>Annexure B</td></tr>
<tr><td>Proposed admission Process: for example JEE/CCMT/own test…</td><td>a, b</td><td>CSAB/JOSAA</td></tr>
</table>

IV. PROJECTED OUTCOMES FOR FUTURE EVALUATION

Information required	Applicable for categories	Detailed Response
Expected placement for graduating students (names of atleast 10 companies/organizations as potential recruiters)	a, b	1. Bajaj 2. Saint-Gobain 3. Asian Paints 4. Solvay 5. Applied Mat. 6. Sterlite Tech 7. Unilever 8. Pidilite 9. 3M 10.Tata Steel 11.Jindal Steel 12.Sabic 13.Aditya Birla
Expected revenue generation (IRG)	a, b, c, d	Fees
Target mean graduating student feedback score indicating achievement on all defined outcomes on scale 1 to 10	a, b	7
Expected yearly research output from the entity over next 5 years	c, d	
Expected yearly consultancy/funding output from the program over next 5 years	c, d	
Expected other outcomes, including social outreach, from the entity over the next 5 years	c, d	
Does the entity plan to start any new UG/PG program over next five years: Yes/No	c, d	
If answer to above question is yes, please give the plans/need with justification	c, d	

Guidelines for filling the form:

1. Complete details are be provided in the space provided, expanding it as needed or as annexures.
2. All relevant cells for any category are to be filled.
3. The projections submitted through this form will also be used for evaluating the performance of the new program/department/Centre in subsequent years, atleast once after three years and five years.

Annexure-A

List of Publications in Relevant Areas by MRC Faculty Members

Dr. Bhagwati Sharma

- Heena Sammi, Manish Mohanta, Bhagwati Sharma, Neha Sardana, "Coalescence of Au nanoparticles in silica aerogel under electron beam irradiation", **Current Nanoscience** Volume :20 / / 2023 DOI: http://dx.doi.org/10.2174/1573413719666221122123805
- Siddarth Jain, Amrita Chakraborty, Bhagwati Sharma, Tridib K Sarma, "Cu2+ Ion Doping-Induced Self-Assembled ZnO-CuxO Nanostructures for Electrochemical Sensing of Hydrogen Peroxide and p-Nitrophenol" , **ACS Applied Nano Materials** Volume :5 / 11973 / 2022 DOI: https://doi.org/10.1021/acsanm.2c03073
- Siddarth Jain, Bhagwati Sharma, Neha Thakur, Suryakant Mishra, Tridib K. Sarma, "Copper Pyrovanadate Nanoribbons as Efficient Multi-Enzyme Mimicking Nanozyme for Biosensing Applications" , **ACS Applied Nano Materials** Volume :3 / 7917-7929 / 2020
- Bhagwati Sharma, Swati Tanwar and Tapasi Sen, "One Pot Green Synthesis of Si Quantum Dots and Catalytic Au Nanoparticle–Si Quantum Dot Nanocomposite" , **ACS Sustainable Chemistry & Engineering** Volume :7 / 3309-3318 / 2019
- Trupthi Devaiah C., Bhagwati Sharma, Jayashree Nagesh, Abhishek Shibu, Shyamashis Das, Kommula Bramhaiah, Nasani Rajendar, Neena S. John, Pralay K. Santra, "Originof Luminescence-BasedDetectionof MetalIons byMn–DopedZnS QuantumDots" , **Chemistry Select** Volume :4 / 13551 / 2019
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MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MATHEMATICS

Date: 06.01.2023

Minutes of Meeting

A Meeting of the Departmental Faculty Board was conducted on 05-01-2023 at 01.00 PM in the Departmental meeting room R-204 to discuss various matters. Following faculty members were present:

Dr. Vatsala Mathur (HOD)	Dr. Sanjay Bhatter	Dr. Varun Jindal
Dr. Ritu Agarwal	Dr. Kushal Sharma	Dr. Om P. Suthar
Dr. Priyanka Harjule	Dr. Anubha Jindal	Dr. S. Chaudhary
Dr. G. Chattopadhyay	Dr. K. Palpandi	

Following faculty members were absent:
Dr. R.C. Soni

The minutes of the meeting, as per the agenda, are as follows:

Item 1.	**Approval of the minutes of the meeting held on 11/11/2022.**
	The minutes were read, corrected and confirmed.
Item 2.	**Action taken report.**
	A. Brochure content of M.Sc. Mathematics program: It was informed to the DFB that the Brochure content of M.Sc. Mathematics program was sent to the web-master for necessary action.
Item 3.	**Recommendation for ebooks to be procured at the central Library**
	The DFB approved the list of e-books recommended by the faculty members of the Department.
Item 4.	**Discussion regarding the proposed B.Tech. (Mathematics and Computing) program.**
	The DFB approved the proposed scheme of the B.Tech. (Mathematics and Computing) program.
Item 5.	**Any other matter with the permission of the Chair.**
	NIL.

The meeting ended with a vote of thanks.

06/01/23
DFB Secretary

HOD

Prof Vineet Sahula
→ Dean Academics

Format for submission of proposals for starting any of the following category of programs/entities

(Tick one or more of the following categories)

a) New UG Program ✓
b) New PG Program
c) New Department/ Conversion from Centre to Department
d) New Centre of Excellence

I. BACKGROUND INFORMATION

Information required	Applicable for categories	Detailed Response
Name of proposed program/department/entity	a, b, c, d	B. Tech. in Mathematics and computing
Primary contact person from the proposing team for administrative purpose	a, b, c, d	HOD, Department of Mathematics DUGC, Department of Mathematics
Name of Coordinating Department/Centre	a, b, d	Department of Mathematics
Other depts./centres, directly involved through labs, courses, faculty etc.	a, b, c, d	Department of Computer science, Departments of humanities and social sciences, ECE, EE, Physics and Chemistry
Justification and need of the initiative (min 500 words)	a, b, c, d	The Department of Mathematics proposes four year "Bachelor of Technology in Mathematics and Computing" which is an amalgamation of Pure & Applied Mathematics, Statistics & Operations Research and Computer Science. This programme is of utmost value to the aspiring engineers as it covers the major areas in demand today. The programme would provide students with comprehensive theoretical knowledge and also practical training in computer science and numerical computing. This programme is proposed to be introduced due to the need for sophisticated Mathematics for modern scientific investigations and technological developments. Whilst Mathematics comprises of a trail of abstract concepts and ideas, computing is the result of more concrete and basic concepts. Graduates often enter research, management and strategic planning, working in banks, finance and insurance

		companies, computer enterprises. At the same time, the field of computer science is experiencing exceptional growth and career opportunities can be found in a variety of areas including programming, systems analysis & design and the management of computer resources. The courses in this program are aimed at training the students to handle problems in the industry and research laboratories through the combined use of Mathematical and Computational Techniques. Therefore, a bachelor course in Technology in Mathematics and Computing is a much-needed intense stream with a substantial course load.
Other prominent institutes in the country offering similar program/running similar entities	a, b, c, d	The 4-year B.Tech./BS Mathematics and Computing programme is currently being offered in several IITs including IIT Delhi, IIT Kanpur, IIT Bombay, IIT Hyderabad, IIT Guwahati and IIT BHU. This program is considered to be among the best programs offered by the above-mentioned IITs as can be seen that the top rankers (i.e., closing rank for IIT Delhi is 401 and IIT Guwahati is 1041 for the year 2022) of JEE (Advanced) are giving preference to this programme.
Prominent international institutes offering similar program/running similar entities	a, b, c, d	--
Differentiating factor for MNITJ w.r.t. above institutes (min 200 words)	a, b, c, d	The Department of Mathematics has a vibrant research atmosphere backed up by adequate infrastructural facilities. Modern computing demands growth and requisites of variety of thorough and careful mathematical techniques ranging from enhancing the solutions of complicated differential equations to statistical analysis of large-scale data. This can, however, be achieved only if one has a strong background and command in both the aspects that is Mathematics and Computing. This is the basis for the introduction of the course at MNIT Jaipur.
Is there any government/national mandate/alignment with National Missions/SDG fulfillment for starting new program	a, b, c, d	1. SDG no. 9 Industry, innovation and infrastructure 2. Employment generation
Major funding agencies that may be approached for supporting the program/running the entities	a, b, c, d	DRDO, ISRO, DST, DBT, DOIT Government of Rajasthan
Name of five prominent national experts operating similar programs/entities	a, b, c, d	IIT Delhi, IIT Bombay, IISc Bangalore, IIT Ropar and IIT Guwahati

II. STRENGTHS

Information required	Applicable for categories	Detailed Response
Team initiating the new program/entity: (Min 4 members for PG program/ 6 for UG program/ 5 for new department, Min 5 members from at least 3 different departments for CoE)	a, b, c, d	1. Dr. Vatsala Mathur, HOD Mathematics 2. Dr. Santosh Chaudhary, DUGC Convener 3. Dr. Ritu Agarwal 4. Dr. Sanjay Bhatter 5. Dr. Varun Jindal 6. Dr. Om P. Suthar 7. Dr. K. Palpandi 8. Dr. Kushal Sharma, 9. Dr. Priyanka Harjule 10. Dr. Geetanjali Chattopadhyay 11. Dr. Anubha Jindal
Existing credit courses taught by team members in relevant area over the past three years	a, b, c, d	1. Linear Algebra (21MAT502) 2. Ordinary Differential Equations (21MAT504) 3. Partial Differential equations (21MAT511) 4. Operations Research (MAT922) 5. Multivariable calculus (21MAT506) 6. Abstract Algebra (21MAT503) 7. Measure and Integration (21MAT814) 8. Numerical Analysis (21MAT510) 9. Computer lab (21MAP501) 10. Computational statistics for data science (CST401) 11. Probability and Statistics (21MAT512) 12. Real Analysis (21MAT505) 13. Complex Analysis (21MAT509) 14. Functional Analysis(21MAT602) 15. Numerical Linear Algebra(21MAT822) 16. Discrete Mathematics(21MAT804)
Present SFR of participating departments/centres	a, b, c, d	Currently, there is no UG program in the department of Mathematics, hence it is difficult to calculate the SFR.
Ongoing research projects of team members in relevant area	a, b, c, d	1. Identifying and Quantifying Interventions for Prevention from Silicosis Funded by Directorate of Specially abled People, Govt. of Rajasthan. 2. Study impact on members of self-help groups (SHGs) in Rajasthan through survey and MIS data with applications of data analytics techniques, Funded by Rajasthan Grameen Vikas Ajeevika, Govt. of Rajasthan.
Relevant publications by team members in proposed area over past three years	a, b, c, d	Annexure I
Ongoing national/international	a, b, c, d	1. Joint research publications with the

collaborations in the relevant area		Department of School of computing, Mathematics and computing, Charles Sturt University, Australia. 2. Joint research with the Department of organizational sciences, University of Belgrade, Serbia. 3. Joint research publications with the department of information technology, Fanshware College London, ON, CANADA. 4. Joint research publications with the Department of Mathematical Sciences, Federal University of Technology, Akure. 5. Joint research publications with Faculty of Military Science, Stellenbosch University, 7395, South Africa.
Ongoing industry engagements in the relevant area	a, b, c, d	Joint workshops and lecture series with Mathworks.inc on applications of multivariable calculus to data science and machine learning
Existing infrastructure/facilities/IP available with the proposing team created through their previous grant/institutional support/research that will be useful for the proposed program/entity	a, b, c, d	---

III. REQUIREMENTS

Information required	**Applicable for categories**	**Detailed Response**
Does the entity require separate/additional space: Yes/no	a, b, c, d	Yes
If answer to above question is yes, give breakup of space requirement with justification	a, b, c, d	1. Computer Labs – 2 **(Capacity of 40 each)** 2. Lecture classrooms – 4 3. Tutorial rooms - 4 4. Seminar hall – 1 The above requirement is for a total of 40 students
Does the program/entity require financial support from the Institute: Yes/no	a, b, c, d	Yes
If answer to above question is yes, give financial requirement with justification	a, b, c, d	Financial support from the institute will be required for recruitment of additional faculty, staff and

<table>
<tr><td>over next 5 years</td><td></td><td>development of computer labs and seminar hall</td></tr>
<tr><td>Does the program/entity require additional faculty/guest faculty/staff/technicians/infrastructure: Yes/No</td><td>a, b, c, d</td><td>Yes</td></tr>
<tr><td>If answer to above question is yes, please give specific (faculty/guest faculty/technician/staff) requirement with justification</td><td>a, b, c, d</td><td>Faculty requirement:
<table><tr><th>Year</th><th>Number of Faculties</th><th>Courses</th></tr><tr><td>2023 - 24</td><td>1</td><td>2 - 2</td></tr><tr><td>2024 - 25</td><td>4</td><td>7 - 8</td></tr><tr><td>2025 - 26</td><td>5</td><td>12 – 13</td></tr><tr><td>2026 - 27</td><td>7</td><td>14 - 15</td></tr></table>Lab Technician – 2
Attendant - 1</td></tr>
<tr><td>Central facilities required</td><td>a, b, c, d</td><td>1. Central library
2. ICT facilities</td></tr>
<tr><td>Additional teaching load created to float the proposed program</td><td>a, b</td><td></td></tr>
<tr><td>Proposed student Intake of program</td><td>a, b</td><td>40</td></tr>
<tr><td>Nature of program: Full time/ Part time/ Online/any other</td><td>a, b</td><td>Full time</td></tr>
<tr><td>Is the program to be run under SFS mode (Yes/no)</td><td>a,b</td><td>No</td></tr>
<tr><td>If answer to the above question is yes, proposed fee structure for the program</td><td>a, b</td><td>--</td></tr>
<tr><td>Curriculum details (preferably through curriculum dev. workshop) in the relevant area</td><td>a, b</td><td>ANNEXURE - II</td></tr>
<tr><td>Proposed admission Process: for example JEE/CCMT/own test...</td><td>a, b</td><td>JOSAA/CCMT</td></tr>
</table>

IV. PROJECTED OUTCOMES FOR FUTURE EVALUATION

Information required	Applicable for categories	Detailed Response
Expected placement for graduating students (names of atleast 10 companies/organizations as potential	a, b	Mathematics and Computing has a very bright future. On successful completion of the course, students can find a job in

recruiters)		software industries, financial institutions and government organizations. The employment areas also cover Consulting Engineering firms, Pharmaceutical Industry, Telecom industry, Banks and Insurance companies and Government organizations as well. Top recruiters include companies like Microsoft, Mphasis, Amazon India, L & T Ltd., Avacor. The MnC students from the IITs who are running similar programs are offered lucrative packages from reputed companies, some notable among them being Microsoft, Epic Systems (US), Visa, Walmart, NetApp, Zynga Arista Networks, Qualcomm, Open Sol, SISO, Citrix R&D and Whizdom Edu etc. Also, if students are aiming for higher studies, they can explore the deep insights into mathematics and computing. The curriculum offers a perfect blend of mathematics and computing, which can be put to use in many research projects. Some of them include Soft Computing, Data Mining, Data Science and Big Data (Hadoop, Python, R and the map-reduce framework), Stochastic Processes, Machine Learning and Recommender Systems, Computer Graphics, etc. The MnC programme also gives a chance to branch out either into Applied Mathematics research or into Computer Science.
Expected revenue generation (IRG)	a, b, c, d	Fees
Target mean graduating student feedback score indicating achievement on all defined outcomes on scale 1 to 10	a, b	7
Expected yearly research output from the entity over next 5 years	c, d	
Expected yearly consultancy/funding output from the program over next 5 years	c, d	
Expected other outcomes, including social outreach, from the entity over the next 5 years	c, d	
Does the entity plan to start any new UG/PG program over next five years: Yes/No	c, d	
If answer to above question is yes,	c, d	

please give the plans/need with justification		

Guidelines for filling the form:

1. Complete details are be provided in the space provided, expanding it as needed or as annexures.
2. All relevant cells for any category are to be filled.
3. The projections submitted through this form will also be used for evaluating the performance of the new program/department/Centre in subsequent years, atleast once after three years and five years.

ANNEXURE – I (Publications of team members in last three years)
ANNEXURE – II (scheme)

*Proposed Scheme for the B. Tech. Programme in Mathematics and Computing

First Year

1st Semester

SN	Code	Subject	L	T	P	Credits
1	MAT-	Engineering Mathematics-I	3	1	0	4
2	IC	Other Institute core subjects				14
3	MAT-	Programming in C	2	0	0	2
4	MAP-	Programming in C Lab	0	0	2	1
5	MAT	Discrete Mathematical Structures	3	1	0	4
		Total Credits				25

2nd Semester

SN	Code	Subject	L	T	P	Credits
1	MAT-	Engineering Mathematics-II	3	1	0	4
2	IC	Other Institute core subjects				14
3	MCT-	Data Structures and Algorithms	3	0	0	3
4	MCP	Data Structures and Algorithms Lab	0	0	2	1
5	MAT-	Linear Algebra and Applications	3	1	0	4
		Total Credits				26

Second Year

3rd Semester

SN	Code	Subject	L	T	P	Credits
1	MAT-	Abstract Algebra	3	1	0	4
2	MAT-	Real Analysis	3	1	0	4
3	MAT	Ordinary Differential Equations	3	1	0	4
4	MMT	Industrial Management	3	0	0	3
5	MCT	Logic System Design	2	0	0	2
6	MCP	Logic System Design Lab	0	0	2	1
7	MCT	Analysis and Design of Algorithms	3	0	0	3
8	MCP	Analysis and Design of Algorithms Lab	0	0	3	2
		Total Credits				23

4th Semester

SN	Code	Subject	L	T	P	Credits
1	MAT	Probability & Stochastic process	3	1	0	4
2	MAT-	Complex Analysis	3	1	0	4
3	MAT	Partial Differential Equations	3	1	0	4
4	MAT-	Numerical methods and computations	3	0	0	3
5	MAP-	Numerical Computation Lab	0	0	2	1
6	MCT	Computer Organization and Architecture	3	0	0	3
7	MCT	DBMS	3	0	0	3
8	MCP	DBMS LAB	0	0	3	2
		Total Credits				24

Proposed Scheme for the B. Tech. Programme in Mathematics and Computing

Third Year

5th Semester

SN	Code	Subject	L	T	P	Credits
1	MAT-	Graph Theory	3	1	0	4
2	MAT-	Computational Methods for Differential Equations	3	0	0	3
3	MAP	Computational Methods for Differential Equations lab	0	0	2	1
4	MAT-	Statistical Methods	3	0	0	3
5	MAP	Statistical methods lab	0	0	2	1
6	MCT	Theory of Computation	3	1	0	4
7	MCT	Operating Systems	3	0	0	3
8	MCP	Operating Systems Lab	0	0	3	2
		Total Credits				21

6th Semester

SN	Code	Subject	L	T	P	Credits
1	MAT	Optimization methods and Applications	3	1	0	4
2	MAT-	Advanced Elective	3	1	0	4
3	MAT-	Advanced Elective	3	1	0	4
4	MCT	Machine Learning	3	0	0	3
5	MCP	Machine Learning Lab	0	0	3	2
6	MCT	Computer Networks	3	0	0	3
7	MCP	Computer Networks Lab	0	0	3	2
		Total Credits				22

Fourth Year

7th Semester

SN	Code	Subject	L	T	P	Credits
1	MAT-	Minor Project				3
2	MAT-	Advanced Elective	3/3	1/0	0/2	4
3	MAT-	Advanced Elective	3/3	1/0	0/2	4
4	OE	Open Elective I	3	0	0	3
5	MAT-	Training Seminar	0	0	3	2
6		EAS Course (Soft Skills)	3	0	0	3
		Total Credits				19

8th Semester

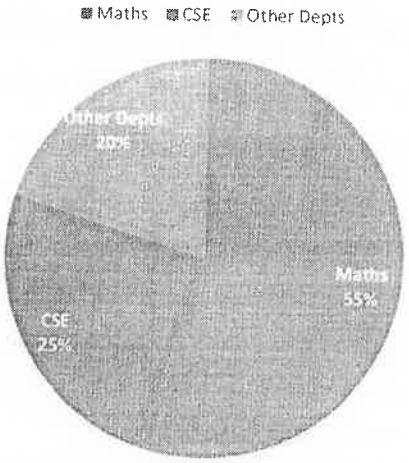
SN	Code	Subject	L	T	P	Credits
1	MAT-	Major Project				8
2	MAT-	Advanced Elective	3/3	1/0	0/2	4
3	MAT-	Advanced Elective	3/3	1/0	0/2	4
4	OE	Open Elective II	3	0	0	3
		Total Credits				19

Semester Wise Credits								
Semester	1st	2nd	3rd	4th	5th	6th	7th	8th	Total
Credits	25	26	23	24	21	22	19	19	179

$Mathematics + CSE + others = 100 + 45 + 34 = 179\ Credits$

Proposed Scheme for the B. Tech. Programme in Mathematics and Computing

CREDITS DETAILS



मालवीय राष्ट्रीय प्रौद्योगिकी संस्थान जयपुर
MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

पंजिका संख्या/ File No.....

टैनंदिनी संख्या MNIT Diary NO.

पृष्ठ संख्या Page No

कार्यालय टिपण्णी

Note Sheet

27th December 2022

Please find enclosed the tentative course structure, for a proposed new course (B.Tech. Engineering Physics), in the Department of Physics. The departmental course structure committee has deliberated the course structure multiple times, under the guidance of departmental undergraduate committee. The course structure has been duly approved by Department Faculty Board. It has tried to adhere to all the laid down basic requirements of the institute for an undergraduate course. The proposed course structure and format are attached for your kind perusal. To initiate the program, the student intake has been kept at 30. This may be placed in front of an appropriate forum for further discussion and kind approval.

Submitted for further necessary action.

N. Srinivasa Rao 27/12/2022
(Dr. Srinivasa Rao Nelamarri)
Convenor, DUGC

Please find the tentative course structure for the proposed new B.Tech. Engg. Physics program attached. Submitted for further necessary action please.

HOD/Physics

28/12/22

Prof. Vineet Sahula
(Convener, Committee for new UG programs)

37
28/12/2022

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Please find ~~the~~ Annexure A (showing compliance of the new scheme to the ~~proposed~~ credit structure approved by Senate) as attachment along with the format & the complete scheme.

03
18/01/2022

Prof V. Sahula

18/01/22

→ Dean Academic

Malaviya National Institute of Technology Jaipur
Department of Physics

Proposed Course Structure of B. Tech. (Engineering Physics)

Semester I (24)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.	MAT101	Mathematics I	IC	3-1-0	4
2.	ECT101	Basics of Electrical and Electronics Engineering	IC	3-0-0	3
3.	HST101	English Communication skills	IC	2-0-0	2
4.	PHT101	Modern Physics	IC	2-1-0	3
5.	ECP102	Electronics Engineering Lab	IC	0-0-2	1
6.	EEP102	Electrical Engineering Lab	IC	0-0-2	1
7.	HSP103	Communication Skills lab	IC	0-0-2	1
8.	PHP102	Modern Physics Lab	IC	0-0-2	1
9.	PHT112	Introduction to Thermodynamics	DC	3-1-0	4
10.	PHT113	Waves & Oscillations	DC	3-1-0	4
		Total			24

Semester II (24)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.	MAT102	Mathematics II	IC	3-1-0	4
2.	CPT101	Computer Science & Programming	IC	2-0-0	2
3.	CET101	Engineering Drawing & Sketching	IC	1-0-2	2
4.	CET102	Environmental Science and Ecology	IC	2-0-0	2
5.	CYT101	Chemistry	IC	2-1-0	3
6.	HST102	Basic Economics	IC	2-0-0	2
7.	MET101	Introduction to Mechanical Systems	IC	2-0-0	2
8.	CPP102	Programming Lab	IC	0-0-2	1
9.	CYP102	Chemistry Lab	IC	0-0-2	1
10.	MEP102	Product Realization through Manufacturing	IC	0-0-2	1
11.	PHT121	Mechanics & Relativity	DC	3-1-0	4
		TOTAL			24

Semester III (28)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.	PHT211	Mathematical Physics-I	DC	3-1-0	4
2.	PHT212	Data Analysis & Interpretation	DC	3-1-0	4
3.	PHT213	Electricity & Magnetism	DC	3-1-0	4
4.	PHT214	Atomic & molecular spectroscopy	DC	3-1-0	4
5.	PHT215	Analog Electronics	DC	3-1-0	4
6.	PHT216	Astronomy & Astrophysics	DC	3-1-0	4
7.	PHP217	Analog Electronics Lab	DC	0-0-4	2
8.	PHP218	Electricity & Magnetism Lab	DC	0-0-4	2
		Total			**28**

Semester IV (28)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.	PHT221	Mathematical Physics-II	DC	3-1-0	4
2.	PHT222	Electrodynamics	DC	3-1-0	4
3.	PHT223	Nuclear and Particle Physics	DC	3-1-0	4
4.	PHT224	Digital Electronics	DC	3-1-0	4
5.	PHT225	Laser Physics	DC	3-1-0	4
6.	PHT226	Optoelectronics	DC	3-1-0	4
7.	PHP227	Digital electronics lab	DC	0-0-4	2
8.	PHP228	Laser and Optoelectronics Lab	DC	0-0-4	2
		Total			**28**

Semester V (20)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.	PHT311	Quantum Mechanics	DC	3-1-0	4
2.	PHT312	Condensed Matter Physics	DC	3-1-0	4
3.	PHT313	Statistical Mechanics	DC	3-1-0	4
4.	PHT314	Vacuum Science and Thin Film Technology	DC	3-1-0	4
5.	PHP315	Solid State Physics lab	DC	0-0-4	2
6.	PHP316	Nuclear and Spectroscopy Lab	DC	0-0-4	2
		Total			**20**
7.	M/H	MINOR / HONOURS COURSE 1			3
8.	M/H	MINOR / HONOURS COURSE 2			3

Semester VI (18)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.	PHT321	Electrical and Electronic materials	DC	3-0-0	3
2.	PHT322	Physics of Nanomaterials	DC	3-1-0	4
3.	PHT323	Numerical Physics & Computer Programming	DC	2-1-2	4
4.	PHT324	Instrumentation Physics	DC	3-0-0	3
5.	PHP325	Materials Fabrication & Characterization Lab	DC	0-0-4	2
6.	PHP326	Advanced Physics and Instrumentation Lab	DC	0-0-4	2
		Total			**18**
7.	M/H	MINOR / HONOURS COURSE 3			3
8.	M/H	MINOR / HONOURS COURSE 4			3

Semester VII (18)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.	PHT411	Solar Energy and Application	DC	3-0-0	3
2.	PHT412	Semiconductor Physics and Devices	DC	3-0-0	3
3.	BMT499	Basic Management	MM	3-0-0	3
4.	PHT	Program Elective 01	PE	3-0-0	3
5.	OE	Open Elective 01	OE	3-0-0	3
6.	PHT	Minor Project	DC	0-0-6	3
		Total		**15-0-6**	**18**
7.	M/H	MINOR / HONOURS COURSE 5		3	3

Semester VIII (18)

S. No.	Course Code	Title of the course	Subject Area	L-T-P	Credits
1.		Program Elective 02	PE	3-0-0	3
2.		Program Elective 03	PE	3-0-0	3
3.		Open Elective 02	OE	3-0-0	3
4.		Major Project	DC	0-0-18	9
		Total		**9-0-18**	**18**
5.	M/H	MINOR / HONOURS COURSE 6		3	3

List of Program Elective Courses (Credits: 3)

S. No.	Name of the course
1.	Advanced Techniques for Materials Characterization
2.	Introduction to Monte Carlo Simulation
3.	Introduction To Quantum Field Theory
4.	Nanostructured Materials and Applications
5.	Nanotechnology for Energy Applications
6.	Advanced Quantum Mechanics
7.	Surface Science
8.	Materials Science and Engineering
9.	Plasma Physics
10.	Introduction to theory of relativity and cosmology
11.	Solar Energy and Physics of Photovoltaics
12.	Organic Electronics Material and Devices
13.	Basic LabVIEW Programming
14.	Membrane Technology for Energy Applications
15.	Experimental Techniques in High Energy Physics
16.	Introduction to Machine Learning in Particle Physics
17.	Physics at Low Dimensions
18.	Spintronics: Physics and Technology
19.	Soft Materials
20.	Bio-inspired and bio-mimetic materials
21.	Introduction to Biophysics
22.	Magnetic Memory Devices

N. Srinivasa Rao

Format for submission of proposals for starting any of the following category of programs/entities

(Tick one or more of the following categories)

a) **New UG Program** ✓
b) **New PG Program**
c) **New Department/ Conversion from Centre to Department**
d) **New Centre of Excellence**

I. BACKGROUND INFORMATION

Information required	Applicable for categories	Detailed Response
Name of proposed program/department/entity	a	Engineering Physics
Primary contact person from the proposing team for administrative purpose	a	HoD Physics
Name of Coordinating Department/Centre	a	Physics
Other depts./centres, directly involved through labs, courses, faculty etc.	a	
Justification and need of the initiative (min 500 words)	a	The fundamental difference between Engineering Physics and other Engineering majors is that in Engineering Physics students study the same advanced physics topics as physics majors -- in particular, at least two quarters of quantum mechanics and at least one quarter of statistical mechanics. Most engineering students (other than engineering physics students) would take these courses only as graduate students (or not at all). An Engineering Physics degree prepares students to work in the private sector or in national laboratories at the very forefront of technology, or to pursue an advanced degree in engineering. An Engineering Physics degree also prepares students to pursue an advanced degree in physics; other engineering majors do not. Industries that need people with very strong scientific backgrounds recognize the Engineering Physics major and what it stands for. Whereas typical engineering programs (undergraduate) generally focus on the application of established methods to the design and analysis of engineering solutions

		in defined fields (e.g. the traditional domains of civil or mechanical engineering), the engineering science programs (undergraduate) focus on the creation and use of more advanced experimental or computational techniques where standard approaches are inadequate (i.e., development of engineering solutions to contemporary problems in the physical and life sciences by applying fundamental principles). Unlike traditional engineering disciplines, engineering science/physics is not necessarily confined to a particular branch of science, engineering or physics. Instead, engineering science/physics is meant to provide a more thorough grounding in applied physics for a selected specialty such as optics, quantum physics, materials science, applied mechanics, electronics, nanotechnology, microfabrication, microelectronics, computing, photonics, mechanical engineering, electrical engineering, nuclear engineering, biophysics, control theory, aerodynamics, energy, solid-state physics, etc. It is the discipline devoted to creating and optimizing engineering solutions through enhanced understanding and integrated application of mathematical, scientific, statistical, and engineering principles. The discipline is also meant for cross-functionality and bridges the gap between theoretical science and practical engineering with emphasis in research and development, design, and analysis. It is notable that in many languages the term for "engineering physics" would be directly translated into English as "technical physics". In some countries, both what would be translated as "engineering physics" and what would be translated as "technical physics" are disciplines leading to academic degrees, with the former specializing in nuclear power research, and the latter closer to engineering physics. In some institutions, an engineering (or applied) physics major is a discipline or specialization within the scope of engineering science, or applied science. In many universities, engineering science programs may be offered at the levels of

		B.Tech., B.Sc., M.Sc. and Ph.D. Usually, a core of basic and advanced courses in mathematics, physics, chemistry, and biology forms the foundation of the curriculum, while typical elective areas may include fluid dynamics, quantum physics, economics, plasma physics, relativity, solid mechanics, operations research, quantitative finance, information technology and engineering, dynamical systems, bioengineering, environmental engineering, computational engineering, engineering mathematics and statistics, solid-state devices, materials science, electromagnetism, nanoscience, nanotechnology, energy, and optics.
Other prominent institutes in the country offering similar program/running similar entities	a	• IIT Bombay - 42 Seats • IIT Delhi - 60 Seats • IIT Hyderabad- 20 seats • IIT Madras - 30 seats • IIT Roorkee - 30 seats • IIT Dhanbad- 22 seats • IIT Guwahati - 50 seats • NIT Calicut – 30 seats
Prominent international institutes offering similar program/running similar entities	a	University of Saskatchewan, Canada University of Pittsburgh, USA Stanford University, USA Kings College London, UK
Differentiating factor for MNITJ w.r.t. above institutes (min 200 words)	a	Only one or two NITs have started Engineering Physics in their curriculum. We shall be the first engineering institute to run this course, if approved, in western part of India. As of now, undergraduate Engineering Physics stream has very less number of openings in the country, a ball park figure of 300. This interdisciplinary stream needs more seats in India.
Is there any government/national mandate/alignment with National Missions/SDG fulfillment for starting new program	a	Engineering Physics graduates can innovate at leading edge of scientific industrial complex. In this regard this course is supposed to be beneficial for Make in India Initiative. Qualified engineering physicists, with a degree in Engineering Physics, can work

		professionally as engineers and/or physicists in the technology intensive industries and beyond, becoming domain experts in multiple engineering and scientific fields.
Major funding agencies that may be approached for supporting the program/running the entities	a	----------
Name of five prominent national experts operating similar programs/entities	a	----------

II. STRENGTHS

Information required	Applicable for categories	Detailed Response
Team initiating the new program/entity: (Min 4 members for PG program/ 6 for UG program/ 5 for new department, Min 5 members from at least 3 different departments for CoE)	a	HoD, DUGC convenor, First Year coordinators Theory & Lab. Other Faculty members are assisting. Different curriculum committees have been formed.
Existing credit courses taught by team members in relevant area over the past three years	a	B.Tech. Physics [credit points 7 core / 6 (max) elective] M.Sc. Physics [credit points 79]
Present SFR of participating departments/centres	a	NA
Ongoing research projects of team members in relevant area	a	Annual report section # projects
Relevant publications by team members in proposed area over past three years	a	Annual report section #Publication
Ongoing national/international collaborations in the relevant area	a	Belle & Belle II @ KEK Japan Electron Ion Collider @ BNL, USA Gwangju Institute of Science and Technology, South Korea Hiroshima University, Japan, Jeonbuk National University, South Korea Leibniz Institute of Polymer research Dresden, Germany, Technical university of Berlin, Germany University of Connecticut, USA, University of Southern Denmark, Denmark, University of Texas at Austin, USA.
Ongoing industry engagements in the relevant area	a	NA
Existing infrastructure/facilities/IP available with the proposing team created through their previous grant/institutional support/research that will be useful for the proposed program/entity	a	Annual report section #FIST. Computers & Workstations bought from the grant may be used here as dual purposes. MSC. Labs can also be repurposed for this, every alternate semester.

III. REQUIREMENTS

Information required	Applicable for categories	Detailed Response
Does the entity require separate/additional space: Yes/no	a	Yes

If answer to above question is yes, give breakup of space requirement with justification	a	Three Classrooms + Three Laboratories
Does the program/entity require financial support from the Institute: Yes/no	a	Laboratory set up requires some up front expenditure, in regards to equipment & furniture, set-up, etc. Rest are periodic consumables that put no significant burden.
If answer to above question is yes, give financial requirement with justification over next 5 years	a	1st 50 Lakh 2nd 50 Lakh 3rd 50 Lakh 4th 15 Lakh 5th 15 Lakh
Does the program/entity require additional faculty/guest faculty/staff/technicians/infrastructure: Yes/No	a	Yes Faculty – 3 Technicians – 4 Office Staff - 1
If answer to above question is yes, please give specific (faculty/guest faculty/technician/staff) requirement with justification	a	Our Workload is 60 hours for B.Tech. & 48 hours of M.Sc. The load will increase to 150% post introduction.
Central facilities required	a	CC/MRC/Library
Additional teaching load created to float the proposed program	a	30 hours (Theory) + 24 Hours (Laboratory) per week in a semester. From the course structure the total may be 60 hours at max.
Proposed student Intake of program	a	30
Nature of program: Full time/ Part time/ Online/any other	a	Full Time
Is the program to be run under SFS mode (Yes/no)	a	No
If answer to the above question is yes, proposed fee structure for the program	a	NA
Curriculum details (preferably through curriculum dev. workshop) in the relevant area	a	To be held soon.
Proposed admission Process: for example JEE/CCMT/own test…	a	JEE

IV. PROJECTED OUTCOMES FOR FUTURE EVALUATION

Information required	Applicable for categories	Detailed Response
Expected placement for graduating students (names of atleast 10 companies/organizations as potential recruiters)	a	CSIR/ISRO/DRDO/IUAC/IUCAA/NCRA/IIST/IPR & other national centers could be catered by graduates of our flagship program.
Expected revenue generation (IRG)	a	To be decided by the institute, as per norms.
Target mean graduating student feedback score indicating achievement on all defined outcomes on scale 1 to 10	a	9
Expected yearly research output from the entity over next 5 years	c, d	NA
Expected yearly consultancy/funding output from the program over next 5 years	c, d	NA
Expected other outcomes, including social outreach, from the entity over the next 5 years	c, d	NA
Does the entity plan to start any new UG/PG program over next five years: Yes/No	c, d	NA
If answer to above question is yes, please give the plans/need with justification	c, d	NA

Guidelines for filling the form:

1. Complete details are be provided in the space provided, expanding it as needed or as annexures.
2. All relevant cells for any category are to be filled.
3. The projections submitted through this form will also be used for evaluating the performance of the new program/department/Centre in subsequent years, atleast once after three years and five years.

Annexure A

Malaviya National Institute of Technology Jaipur
Department of Physics

Credit structure for the proposed B.Tech. Engineering Physics scheme

Course Type	B. Tech. Only	B.Tech. with minor specialization
Total Credits	**178**	
Institute core	**36**	Same as B.Tech. only program
Basic Sciences	16	
Fundamental Engg. (EAS)	15	
Humanities & Social Sciences	5	
Discipline Specific Courses	**136**	
Program Core	121	Same as B.Tech. only program
Programme Elective		
Advance Elective		
Project	12	
Management	3	
Other Courses	**6**	As per detail of minor program
Open Elective	6	
Programme linked EAS/BS	0	

Relevant Publications over past three years:

(Department of Physics)

2023

Sanjay Kumar, Shiv Dutta Lawaniya, Sonalika Agarwal, Yeon-TaeYu, Srinivasa Rao Nelamarri, Manoj Kumar, Yogendra KumarMishra, Kamlendra Awasthi, "**Optimization of Pt nanoparticles loading in ZnO for highly selective and stable hydrogen gas sensor at reduced working temperature**" , Sensors and Actuators B: Chemical Volume :375 / 132943 / 2023

Mohammed Saquib Khan, Boddepalli SanthiBhushan, Kailash Chandra Bhamu, Sung Gu Kang, Himmat Singh Kushwaha, Atul Sharma, Rajnish Dhiman, Ragini Gupta, Malay Kumar Banerjee, Kanupriya Sachdev, "**Polymer hydrogel based quasi-solid-state sodium-ion supercapacitor with 2.5 V wide operating potential window and high energy density**" , Applied Surface Science Volume :607 / 154990 / 2023

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Nishel Saini, Kamlendra Awasthi, "**Insights into the progress of polymeric nano-composite membranes for hydrogen separation and purification in the direction of sustainable energy resources**" , Separation and Purification Technology Volume :282 / 120029 / 2022

Jyoti Yadav, M. D. Anoop, Rini Singh, Nisha Yadav, N. Srinivasa Rao, Fouran Singh, Ankur Jain, Takayuki Ichikawa, Kamlendra Awasthi, Manoj Kumar, "**A reversible tuning of Fermi level in BiSbTe3 thin films through ion implantation**" , Materials Letters Volume :306 / 130923 / 2022

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Prashant Sharma, Rini Singh, Rishi Sharma, Ravindra Mukhiya, Kamlendra Awasthi, Manoj Kumar, "**Bismuth Oxide Extended-Gate Field-Effect Transistor as pH Sensor**" , Journal of Electronic Materials Volume :51 / 2673-2681 / 2022

Priyanka Aggarwal, Debasish Sarkar, Kamlendra Awasthi, Prashanth W. Menezes, "**Boosting electrochemical hydrogen evolution activity of MoS2 nanosheets via facile decoration of Au overlayer**" , International Journal of Hydrogen Energy Volume :00 / / 2022

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Hem Kanwar Rathore, Muruganandham Harirama, Mukhesh K.Ganesha, Ashutosh K.Singh, Debanjan Das, Manoj Kumar, Kamlendra Awasthi, Debasish Sarkar, **"Charge storage mechanism in vanadium telluride/carbon nanobelts as electroactive material in an aqueous asymmetric supercapacitor"** , Journal of Colloid and Interface Science Volume :621 / 110-118 / 2022

Mohammed Saquib Khan, Preeti Shakya, Nikita Bhardwaj, Deependra Jhankal, Atul Kumar Sharma, Malay Kumar Banerjee, Kanupriya Sachdev, **"Chemical vapor deposited graphene-based quasi-solid-state ultrathin and flexible sodium-ion supercapacitor"** , Journal of Electrochemical Science and Engineering Volume :12(4) / 799-813 / 2022

Sandeep Gupta, Anoop Mampazhasseri Divakaran, Kamlendra Awasthi, Manoj Kumar , **"CO2 gas sensing properties of Na3BiO4-Bi2O3 mixed oxide nanostructures"** , Environmental Science and Pollution Research Volume :00 / / 2022

Ruhani Sharma, Ankush Agrawal, Ankita Sharma, Sanjay Kumar, Pravesh Kumar Sharma, Kumud Kant Awasthi, Kamakshi Pandey, Anjali Awasthi, **"Effect of biosynthesized ZnO nanoparticles on wheat seedlings"** , Materials Today: Proceedings Volume :01 / / 2022

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Debashish Pal, Dipanjan Maity, Ayan Sarkar, Debasish Sarkar, Gobinda Gopal Khan, **"Effect of defect-rich Co-CeOx OER cocatalyst on the photocarrier dynamics and electronic structure of Sb-doped TiO2 nanorods photoanode"** , Journal of Colloid and Interface Science Volume :620 / 209-220 / 2022

Shiv Dutta Lawaniya Nisha Meena Sanjay Kumar Yeontae Yu Kamlendra Awasthi , **"Effect of MWCNTs incorporation into polypyrrole (PPy) on ammonia sensing at room temperature"** , IEEE Sensors Volume :0 / 1 / 2022

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Sarika Kashyap, Garima Agarwal, Manoj Kumar, Kumud Kant Awasthi, "**Extraction of Bioactive Compounds from Withania somnifera using Hydrothermal Technique**" , Materials Today: Proceedings (Elsevier) Volume :00 / --- / 2022

P. Aggarwal, Debasish Sarkar, K. Awasthi, P. W. Menezes, "**Functional role of single-atom catalysts in electrocatalytic hydrogen evolution: Current developments and future challenges**" , Coordination Chemistry Reviews Volume :452 / 214289 / 2022

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Yogita Dahiya, Muruganandham Hariram, Manoj Kumar, Ankur Jain, Debasish Sarkar, "**Modified transition metal chalcogenides for high performance supercapacitors: Current trends and emerging opportunities**" , Coordination Chemistry Reviews Volume :451 / 214265 / 2022

M.Rathore, R.Dhayal and K.K.Venkataratnam, "**Nonclassicality of two-mode quantum optical states of an oscillatory quantized massive scalar field in the FRW Universe.**" , General Relativity and Gravitation Volume :54(6) / 1-51 / 2022

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Sapna Yadav, Jyoti Yadav, Manoj Kumar, Kalawati Saini, "**Synthesis and characterization of nickel oxide/cobalt oxide nanocomposite for effective degradation of methylene blue and their comparative electrochemical study**" , International Journal of Hydrogen Energy Volume :xx / --- / 2022

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Sangita Bhowmick, Chetan Saini, Saif Khan, Mukul Gupta, Rahul Singhal, Raja Sen, Aloke Kanjilal, **"Unfolding the temperature induced dual bandgap in TiO2 nanotubes with improved photocatalytic application"** , Bulletin of the American Physical Society Volume :65 / 1 / 2020

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Rajesh Kumar, Kamakshi, Manoj Kumar and Kamlendra Awasthi, **"UV-irradiation assisted functionalization and binding of Pd nanoparticles in polycarbonate membranes for hydrogen separation"** , Environmental Science and Pollution Research Volume :00 / 1-10 / 2020

Electronics Dept.

Ongoing Research Projects:

(Department of Physics)

S. No.	Name of the Project	Principal Investigator	Sponsoring Agency	Type of funding agency (R&D/ academic/ Industry/PSU/Govt./Specify if any other.)	Outlay (in Lacs of Rs.)
1.	SHI induced modifications of carbon based nanocomposite	Dr. Rahul Singhal	IUAC New Delhi	R&D	11.50
2.	Effect of low energy ion implantation on the structural and optical properties of $K_xNa_{1-x}NbO_3$ thin films	Dr. Srinivasa Rao Nelamarri	IUAC, New Delhi	Govt.	10.00
3.	Track etched membrane based bimetallic nanowires for hydrogen sensing	Dr. Kamlendra Awsathi	IUAC-UGC, New Delhi	Govt.	10
4.	Radiation Transport Calculation for Radiation Dose in Space Environment	Dr. Kavita Lalwani	DRDO	Govt.	9.96
5.	Kinetic enhancement of MgH_2 by the use of ternary oxides and its implementation as for Li ion battery	Dr. Manoj Kumar	INSPIRE-Fellow, DST, New Delhi	Govt.	20
6.	High Pressure and Magneto transport studies on magnetically doped 3D Topological Insulators for spintronics device applications	Dr. Manoj Kumar	WOS-A DST, New Delhi	Govt.	22.5
7.	Tuning the properties of topological insulators by ion implantation	Dr. Manoj Kumar	IUAC, New Delhi	Govt.	6.7
8	Development of high pressure cells for magneto-transport studies at UGC-DAE CSR, Indore.	Dr. Manoj Kumar	UGC DAE CSR, Indore	Govt.	7.5

9.	Low energy ion irradiation induced medications of metal-fullerene nanocomposite	Dr. Rahul Singhal	IUAC New Delhi	R&D	11.50
10.	X-ray Absorption spectroscopy of single atom (Pt and Pt-group) based electrocatalysts	Dr. Kamlendra Awsathi	UGC-DAE, Indore	Govt.	1.35
11.	Nanostructured Carbon Electrodes for High-Voltage Hybrid Ion Supercapacitors	Dr. Debasish Sarkar	ISRO RAC-S	Govt.	30.17
12.	In-situ and Operando X-ray Absorption Spectroscopy of the MoS_2 Electrode to Reveal Its Charge Storage Mechanism in a Supercapacitor Cell	Dr. Debasish Sarkar	UGC-DAE CSR Indore	Govt.	7.30
13.	X-ray absorption spectroscopy of single atom (Pt and Pt-group) based electrocatalysts	Dr. Kamlendra Awasthi	UGC-DAE CSR Indore	Govt.	1.35

Malaviya National Institute of Technology Jaipur

Department of Chemistry

To
The Dean, Academics
Malaviya National institute of Technology Jaipur
JLN Marg, Jaipur-30217 (Rajasthan)

139/27.01.2023/Chemistry

Date: 27.01.2023

Subject: Regarding Submission of Proposal for starting a new UG-PG Programme.

Dear Sir,

With reference to the above subject matter as required, please find attached herewith the following documents (As enclosures 01-03) for BS-MS five year integrated M.sc. minor in Engineering branch in Department of Chemistry.

1. Minutes of the DFB approval (enclosure-01)
2. Propose plan of Courses (enclosure-02)
3. Format for submission of proposal for starting the new UG-PG programme (enclosure-03)

Thanks and regards,

Jyoti Joshi 27.01.2023

Prof. Jyoti Joshi
(HoD)

Copy to:

1. Prof. Vineet Sahula, Department of ECE
2. Dr. Suman Rathore, Deputy Registrar (Academics)

Enclosure - 1.

Malaviya National Institute of Technology Jaipur
Department of Chemistry
DFB Meeting

Minutes of the Meeting

Dated 27.01.2023

A DFB meeting was held in the office of the HoD on 27.01.2023 at 12:30 PM.

At the onset of the meeting, the HoD welcomed the faculty members.

All the faculty members were present in the meeting except Prof. Dr. Ragini Gupta and Dr. Raj Kumar Joshi.

The curriculum for the proposed 5-Year Integrated BS-MS program was taken up for discussion. The proposed curriculum was unanimously accepted by all the members present.

Jyoti Joshi
27.01.2023
HoD

DFB - Meeting. 27/1/23.

Attendance.

	Signature.
(1) Abbas Raja - N	[signature]
(2) Pradeep Kumar	[signature]
(3) Simit K. Sonkar	[signature]
(4) Meena Memimal	[signature]
(5) Pawan Rekha	PRekha
6 Mukesh Jha	[signature]
7 Biman Bandyopadhyay	[signature]
8. Sudhir Kashyap	[signature]
9. Sumanta Kumar Meher	[signature]
10. Barun Jana	Barun
11. Jyoti Joshi	Jyoti Joshi
12. Mannri Rani	Manni

Jyoti Joshi
(HOD)
27.01.2023

Enclosure - 2

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR
DEPARTMENT OF CHEMISTRY
BS-MS 5 Year Integrated M.Sc., with Minor in Engineering Branch
Proposed Plan of Courses

Semester 1	CREDITS (L-T-P)	COURSE CODE
Chemistry I	4 (3-1-0)	23CYT101
Chemistry II	4 (3-1-0)	23CYT102
Physics I	4 (3-1-0)	PHT 101
Math I	4 (3-1-0)	MAT101
ECE + EE	3 (3-0-0)	ECT 101
Communication Skills Basic/Advanced	2 (2-0-0)	22HST102/103
EE lab	1 (0-0-2)	EEP 102
ECE lab	1 (0-0-2)	ECP 102
Communication Skills lab	1 (0-0-2)	22HSP104
Physics lab	1 (0-0-2)	PHP102
Total Credits:	**25**	

Semester 2	CREDITS (L-T-P)	COURSE CODE
Chemistry III	4 (3-1-0)	23CYT103
Chemistry IV	4 (3-1-0)	23CYT104
Physics II	4 (3-1-0)	PHT 102
Math II	4 (3-1-0)	MAT102
Computer Science and Programming	2 (2-0-0)	CPT 101
Programming lab	1 (0-0-2)	CPP 102
Basic Economics	2 (2-0-0)	HST 102
Engineering Drawing	2 (2-0-0)	CET101
Mechanical Workshop	1 (0-0-2)	MEP10X
Biology for Chemists	2 (2-0-0)	23CYT103
Total Credits:	**26**	

Semester 3	CREDITS	COURSE CODE
Inorganic Chemistry I	4 (3-1-0)	23CYT201
Organic Chemistry I	4 (3-1-0)	23CYT202
Physical Chemistry I	4 (3-1-0)	23CYT203
Program Elective I	3 (3-0-0)	21CYT801-21CYT829
Open Elective I	3 (3-0-0)	-
General Chemistry Lab I	2 (0-0-4)	23CYP701
Total Credits:	**20**	

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Semester 4	CREDITS	COURSE CODE
Inorganic Chemistry II	4 (3-1-0)	23CYT204
Organic Chemistry II	4 (3-1-0)	23CYT205
Physical Chemistry II	4 (3-1-0)	23CYT206
Program Elective II	3 (3-0-0)	21CYT801-21CYT829
Open Elective II	3 (3-0-0)	-
General Chemistry Lab II	2 (0-0-4)	23CYP702
Total Credits:	**20**	

Semester 5	CREDITS	COURSE CODE
Advanced Inorganic Chemistry	4 (3-1-0)	21CYT505
Analytical Chemistry	4 (3-1-0)	21CYT506
Organic Chemistry	4 (3-1-0)	21CYT507
Quantum Chemistry	4 (3-1-0)	21CYT508
Inorganic Chemistry Lab I	2 (0-0-4)	21CYP501
Organic Chemistry Lab I	2 (0-0-4)	21CYP502
Total Credits:	**20**	

Semester 6	CREDITS	COURSE CODE
Advanced Organic Chemistry	4 (3-1-0)	21CYT513
Bonding in Main Group Elements and Transition Metal Organometallic Chemistry	4 (3-1-0)	21CYT514
Classical and Statistical Thermodynamics	4 (3-1-0)	21CYT515
Spectroscopy and its Applications	4 (3-1-0)	21CYT516
Physical Chemistry Lab I	2 (0-0-4)	21CYP503
Analytical Chemistry Lab I	2 (0-0-4)	21CYP504
Total Credits:	**20**	

Semester 7	CREDITS	COURSE CODE
Program Elective III	3 (3-0-0)	21CYT801-21CYT829
Program Elective IV	3 (3-0-0)	21CYT801-21CYT829
Program Elective V	3 (3-0-0)	21CYT801-21CYT829
Open Elective III	3 (3-0-0)	-
Inorganic Chemistry Lab II	2 (0-0-4)	21CYP509
Organic Chemistry Lab-II	2 (0-0-4)	21CYP510
Minor Project I	6 (0-0-12)	23CYD701
Total Credits:	**22**	

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MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR
DEPARTMENT OF CHEMISTRY

Semester 8	CREDITS	COURSE CODE
Program Elective VI	3 (3-0-0)	21CYT801-21CYT829
Open Elective IV	3 (3-0-0)	21CYT801-21CYT829
Physical Chemistry Lab II	2 (0-0-4)	21CYP511
Analytical Chemistry Lab II	2 (0-0-4)	21CYP512
Minor Project II	6 (0-0-5)	23CYD702
Seminar I	2 (2-0-0)	23CYS701
Total Credits:	18	

Semester 9	CREDITS	COURSE CODE
Major Project I	16 (0-0-16)	23CYD801
Total Credits:	16	

Semester 10	CREDITS	COURSE CODE
Major Project II	16 (0-0-16)	23CYD802
Total Credits:	16	

List of Program/Open Electives				
Sl. No	Code	Program Electives	L-T-P	Credits
1	21CYT801	Chemistry for Renewable Energy	3-0-0	3
2	21CYT802	Environmental Chemistry	3-0-0	3
3	21CYT803	Introduction to Density Functional Theory	3-0-0	3
4	21CYT804	Atmospheric Chemistry	3-0-0	3
5	21CYT805	Introduction to Astrochemistry	3-0-0	3
6	21CYT806	Electrochemical Energy Storage Systems	3-0-0	3
7	21CYT807	Photo-Inorganic Chemistry	3-0-0	3
8	21CYT808	Organometallics and Catalysis	3-0-0	3
9	21CYT809	Supramolecular Chemistry	3-0-0	3
10	21CYT810	Polymer Chemistry	3-0-0	3
11	21CYT811	Organometallic Chemistry of Main Group Elements	3-0-0	3
12	21CYT812	Bio-Inorganic Chemistry	3-0-0	3
13	21CYT813	Symmetry and Group Theory	3-0-0	3
14	21CYT814	Organic Synthesis	3-0-0	3
15	21CYT815	Applied Biocatalysis (Enzymes)	3-0-0	3
16	21CYT816	Heterocyclic Chemistry	3-0-0	3
17	21CYT817	Chemistry of Natural Products	3-0-0	3

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18	21CYT818	Pharmaceutical Chemistry	3-0-0	3
19	21CYT819	Cell Structure & Biomolecules	3-0-0	3
20	21CYT820	Biochemistry	3-0-0	3
21	21CYT821	Physical Organic Chemistry	3-0-0	3
22	21CYT822	Electrochemistry: Ionics and Electrodics	3-0-0	3
23	21CYT823	Solid State Chemistry - Fundamentals and Applications	3-0-0	3
24	21CYT824	Laser Spectroscopy: Theory and Applications	3-0-0	3
25	21CYT825	Advanced Analytical Chemistry	3-0-0	3
26	21CYT826	Dyes and Pigments	3-0-0	3
27	21CYT827	Molecular Spectroscopy	3-0-0	3
28	21CYT828	Concepts in Chemical Kinetics and Dynamics	3-0-0	3
29	21CYT829	Green and Industrial Organic Chemistry	3-0-0	3

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Enclosure- 3

Format for submission of proposals for starting any of the following category of programs/entities

(Tick one or more of the following categories)

a) New UG-PG Program ✓
b) New PG Program
c) New Department/ Conversion from Centre to Department
d) New Centre of Excellence

I. BACKGROUND INFORMATION

Information required	Applicable for categories	Detailed Response
Name of proposed program/department/entity	a	BS-MS in Chemical Sciences with minor in Engineering Sciences
Primary contact person from the proposing team for administrative purpose	a	HoD Chemistry
Name of Coordinating Department/Centre	a	Chemistry
Other depts./centres, directly involved through labs, courses, faculty etc.	a	NA
Justification and need of the initiative (min 500 words)	a	The fundamental difference between the proposed BS-MS program and similar programs run bother CFTIs is that, over and above the basic engineering courses offered as core courses in the first year, the students can choose more advanced level courses (N number having M credit points over P semesters) from any of the engineering streams of her/his choice and earn an BS-MS degree in chemistry with MINOR in an engineering stream. What must not be overlooked is that a student who wishes to continue only in pure science can choose program electives floated by the Chemistry department and earn a pure BS-MS degree in chemistry, similar to the ones given by other CFTIs. The program would provide the students to choose any of the two abovementioned options after the completion of first two semesters, and not at the beginning, which would allow them to make a more informed decision. This program would prepare student to pursue their carrier in a varied array of academic and professional fields, starting from continuing higher studies (MTech and/or PhD) to work in the public and private sectors. It will allow

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		students to pursue an advanced degree in both chemistry as well as an engineering stream of their choice, that s/he might not have had a chance to register based on her/his JEE ranking. Industries requiring skilled and highly educated personnel with very strong scientific background along with good understanding of certain technical knowledge would be a good choice for the pass outs. We can point out an example here like minor in computer science will be a good choice for people joining pharmaceutical and drug designing industries as they would require an in depth knowledge of chemistry along with molecular modelling and coding. An attractive facet of this proposed program is the multiple exit options after 3rd and 4th years in addition to the normal termination after the 5th years. Therefore, a student who is interested in joining a job and/or start her/his start-up early and continue higher education at a later stage can use this flexible exit option to her/his great advantage. The flexibility in choosing a minor and exiting the program at multiple stages are in accordance with the newly implemented NEP that emphasizes the interdisciplinary nature of programs as per the need of modern time and change in the trend of job profiles. 1. As compared to existing B.Sc. & M.Sc. courses exposure to stream is not provided. 2. As per the guidelines NEP, interdisciplline courses should be introduce as per the need of modern time (trend in education), industry as well as general needs of society or to contribute to socio economic development. 3. It will expand the opportunity of both in number & in diversified areas of job opportunities. The proposal course has added advantage of having flexible exit options. The exit option is after 3rd, 4th & 5th year of the course. The design of the program gives the students a benefit if he gets an opportunity to rejuvenate his career option.

Jyoti Bala

Other prominent institutes in the country offering similar program/running similar entities	a	• IIT Bombay • IIT Roorkee • IISER Pune • IISER Berhampur • IISER Kolkata • IISER Thiruvananthapuram • IISER Bhopal • IISER Mohali • IISER Tirupati • IIT Dharwad • NIT Surat • NIT Rourkela
Prominent international institutes offering similar program/running similar entities	a	• University of Utah • UChicago Chemistry • Stony Brook University • Georgia State University • Drexel University • Central Washington University • Illinois Institute of Technology
Differentiating factor for MNITJ w.r.t. above institutes (min 200 words)	a	BS-MS courses have been running in various CFTIs for a long time, most of which are IITs, IISERs, and with only two NITs (NIT Surat and NIT Rourkela) offer this program. There are two major advantages of the proposed program over the ones already running in other CFTIs. Firstly, this would allow students to choose a minor in an engineering stream of her/his choice and secondly, it would provide one extra exit options over and above the existing courses. The above two flexibility would allow students to earn a higher degree in an engineering stream more easily, as there is an exit options after 3 years with diploma and register for B.Tech. or after 5th year and register for M.Tech. This would be the very first course run by an NIT (and most possibly any CFTI) that would award an integrated BS-MS in Chemical Sciences with an optional minor in engineering discipline.
Is there any government/national mandate/alignment with National Missions/SDG fulfillment for starting new program	a	This program will create human resource with the knowledge of Chemical Sciences and Engineering Sciences. Such resources with interdisciplinary expertise will be required to propel the National Make in India Mission. This program is also in line with the New Education Policy 2020.

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Major funding agencies that may be approached for supporting the program/running the entities	a	Ministry of Education, Government of India.
Name of five prominent national experts operating similar programs/entities	a	NA

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STRENGTHS

Information required	Applicable for categories	Detailed Response
Team initiating the new program/entity: (Min 4 members for PG program/6 for UG program/5 for new department, Min 5 members from at least 3 different departments for CoE)	a	HoD, DUGC convenor, DPGC convener, Program advisors of B.Teh. and M.Sc. programs, members of DUGC and DPGC.
Existing credit courses taught by team members in relevant area over the past three years	a	B.Tech. : Engineering Chemistry [credits: 3 (core); 1 (practical); 3 (open elective] M.Sc. Chemistry: Credits 85
Present SFR of participating departments/centers	a	NA
Ongoing research projects of team members in relevant area	a	Annual report section # projects
Relevant publications by team members in proposed area over past three years	a	Annual report section #Publication
Ongoing national/international collaborations in the relevant area	a	Chalmers University of Technology, Sweden; IIT Indore; University of Rajasthan; NIT Kurukshetra; Central University, Gujrat; Allahabad University; University of Cape Town, South Africa; A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Russian Federation; NIPER Raebareli
Ongoing industry engagements in the relevant area	a	Tata Steel Jamshedpur
Existing infrastructure/facilities/IP available with the proposing team created through their previous grant/institutional support/research that will be useful for the proposed program/entity	a	Well-equipped research laboratories in all the proposed disciplines; M.Sc. practical laboratories; Computer workstations

II. REQUIREMENTS

Information required	Applicable for categories	Detailed Response
Does the entity require separate/additional space: Yes/no	a	Yes
If answer to above question is yes, give breakup of space requirement with justification	a	Four Classrooms + Four Practical Laboratories

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Does the program/entity require financial support from the Institute: Yes/no	a	Yes Laboratory set up requires some up front expenditure, in regards to equipment & furniture, set-up, etc. Rest are periodic consumables that put no significant burden.
If answer to above question is yes, give financial requirement with justification over next 5 years	a	1st year : 130 Lakhs 2nd year : 60 Lakhs 3rd year : 60 Lakhs 4th year : 60 Lakhs 5th year : 60 Lakhs
Does the program/entity require additional faculty/guest faculty/staff/technicians/infrastructure: Yes/No	a	Yes Faculty – 6 Technicians – 5 Office Staff - 2
If answer to above question is yes, please give specific (faculty/guest faculty/technician/staff) requirement with justification	a	Our workload is 60 hours for B.Tech. & 60 hours of M.Sc. The load will increase to 160% post introduction of the program.
Central facilities required	a	CC/MRC/Library
Additional teaching load created to float the proposed program	a	74 hours (Theory + Laboratory) per week in a semester.
Proposed student Intake of program	a	40
Nature of program: Full time/ Part time/ Online/any other	a	Full Time
Is the program to be run under SFS mode (Yes/no)	a	No
If answer to the above question is yes, proposed fee structure for the program	a	NA
Curriculum details (preferably through curriculum dev. workshop) in the relevant area	a	To be conducted soon
Proposed admission Process: for example JEE/CCMT/own test…	a	JEE

Jyoti Joshi

III. PROJECTED OUTCOMES FOR FUTURE EVALUATION

Information required	Applicable for categories	Detailed Response
Expected placement for graduating students (names of at least 10 companies/organizations as potential recruiters)	a	CSIR/ISRO/DRDO/IUAC/IUCAA/NCRA/IIST/IPR & other national centers could be catered by graduates of our flagship program.
Expected revenue generation (IRG)	a	To be decided by the institute, as per norms.
Target mean graduating student feedback score indicating achievement on all defined outcomes on scale 1 to 10	a	9
Expected yearly research output from the entity over next 5 years	c, d	NA
Expected yearly consultancy/funding output from the program over next 5 years	c, d	NA
Expected other outcomes, including social outreach, from the entity over the next 5 years	c, d	NA
Does the entity plan to start any new UG/PG program over next five years: Yes/No	c, d	NA
If answer to above question is yes, please give the plans/need with justification	c, d	NA

Guidelines for filling the form:

1. Complete details are be provided in the space provided, expanding it as needed or as annexures.
2. All relevant cells for any category are to be filled.
3. The projections submitted through this form will also be used for evaluating the performance of the new program/department/Centre in subsequent years, at least once after three years and five years.

Jyoti Joshi

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

December 30, 2022

Recommendations of the PG Review Committee

As per the direction of the Senate in its46th meeting a committee was constituted vide office order No. F4/S-V-1/20-21-Acad (46-Senate)/1770 dated 02-09-2022 to review the PG Programs of the Institute. The Committee first met on 19.10.2022 and observed that in the following 14 PG programs the filled-in seats are below 75% in the last two years:

(i) Renewable Energy
(ii) Chemical Engineering
(iii) Civil Engineering in Disaster Assessment & Mitigation
(iv) Earthquake Engineering
(v) Environmental Engineering
(vi) Water Resources Engineering
(vii) Computer Science & Engineering
(viii) Power Systems
(ix) Electronics & Communication Engineering
(x) VLSI Design
(xi) Wireless & Optical Communication
(xii) Industrial Engineering
(xiii) Production Engineering
(xiv) Power Systems Management

As per the mandate of the Senate, the concerned departments/Centers were advised to suggest measures to improve the status of filled-in seats and bring it to more than 75%. The measures could include (but not limited to) major revision of PG programs, reducing the intake, merging the programs (inter or intra-departmental), or starting of altogether new PG programs. It is also pertinent to see if two or more programs in or across the department are overlapping.

Committee asked the departments/Centres of above-mentioned programs to review and suggest measures to improve the status of filled-in seats and bring it to more than 75%. After two reminders, responses from following four department/centres were received by the committee

1. Department of Mechanical Engineering
2. Department of Electrical Engineering Department
3. Department of Chemical Engineering
4. Materials Research Centre

Committee again met on December 29, 2022 at 12.00 noon at Meeting Hall No 2, Prabha Bhawan to finalise the recommendations after reviewing the comments/suggestions received from the departments/centres. Committee members found that suggestions given by the departments/centres were not concrete and objective in nature. Committee after deliberations finalised the following recommendations forPG programs in the current scenario -

1. Maximum number of PG programs that each Department/centre can offer be restricted to 03. The departments/centres which have more than three may choose the

best running PG programs or merge the existing programs to bring the number to three.

2. PG Programs where number of filled seats are less than 07 in last two academic years to go for zero semester for the next two academic years. The affected department/centre may offer a new program or have a major revision.
3. Intakes in PG Programs where filled-in seats are less than 75% in last two academic years should be capped either to 15 or 22 (including all type of categories like CCMT, part time, industry sponsored).
4. An exercise to be done at institute level to identify overlapping of courses/programs within the department/centre and also across the various departments or centres.
5. A thought may be given to attach PG programs offered currently at different centres with Department(s) for academic purposes.

Above recommendations are placed for the consideration of Senate.

(Prof. Kanupriya Sachdev)
Convener

(Prof. Rajesh Kumar)
Member

(Dr. Satish Kumar)
Member

Dean A.A

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

MTech + PhD Dual Degree (MPDD) Program

I. Genesis:

a) The program has been designed for bright MTech students having an inclination and aptitude for research. The program aims to attract the best of those students and attract them early towards research. Once these students complete their MTech coursework, they will start their research and earn both MTech and PhD degrees - at the end of the program. The two distinct aspects of the MPDD are as below:

   i. Provide an avenue to students to earn both degrees in a far lesser duration as compared to if these two programs were registered for sequentially.

   ii. Attract bright students by awarding them a fellowship equivalent to that of doctoral students from the date of their joining the program.

b) Once the candidate gets admission into the MPDD program, the requirements of the program will be as per the PhD program in vogue, except for the features indicated below.

II. Eligibility:

a) The students who are admitted to MTech Programme with a GATE scholarship at MNIT Jaipur are eligible to register for this program, provided they have an overall CGPA $\geq$ 6.5 up to second semester of the MTech program. This is applicable for all categories of students.

b) They can convert themselves to the MTech + Ph.D. dual degree (MPDD) Programme of the concerned academic unit where they have registered for MTech program.

c) The student will be given an option to register for MPDD program any time after the declaration of the second-semester results.

d) Minimum CGPA for PhD candidacy is 7.5 and above; for the courses registered after admission to MPDD program.

III. Admission process:

a) The willing candidate must apply to the institute for the MPDD program through regular PhD admission process every semester.

b) A separate category of PhD admissions may be approved by the Senate.

c) The candidate must appear for a personal Interview in front of the Departmental Selection Committee (DSC), during the routine PhD admissions.

d) The number of candidates admitted through MPDD program will be counted towards overall PhD scholars (slots) a faculty can supervise and overall seats available for scholarship.

IV. Program Duration:

a) The total duration of the proposed MPDD program will be minimum 4 (1+3) and maximum of 7 (2+5) years from the date of MTech admission at the institute.

V. Program Assistantship:

a) The candidate becomes eligible for scholarship for regular PhD scholars. However, for the scholars admitted through MPDD program, MTech Assistantship would continue till the successful clearing of Comprehensive Exam.

b) Once the candidate successfully clears the Comprehensive Exam, the difference of eligible assistantship amount since 3rd semester onwards till the date of the Comprehensive Exam will be credited to the candidate in equal instalments. After that normal PhD Assistantship will be continued. The assistantship can be provided for a maximum period of 5 years from the date of registration in MPDD program, as per the current PhD assistantship norms.

VI. Course requirements:

a) The enrolled candidate for MPDD program can register for the following courses to fulfil a credit requirement of 63 credits for dual degree program during PhD registration period, which includes 36 credits from the courses during MTech program.

Sem 1	**Sem 2**
Seminar: 3 Cr	Dissertation: 14 Cr
Research Methodology-I: 2 Cr	Research Methodology-II: 2 Cr
Taught Course I: 3 Cr	
Taught Course II: 3 Cr	
Total Credits: 11 Cr	**Total Credits: 16 Cr**

This will help him/her to fulfil the minimum credit requirement for the award of MTech degree, in case the student quits the program with an MTech degree alone.

b) In 5th semester, the candidate must register for a minimum of 9 credit courses as per current PhD regulations, including the mandatory courses on Research Methodology.

c) Comprehensive Exam is to be conducted by the end of the 5th semester, as per current PhD regulations.

d) The nomination of supervisor for the candidate registering for MPDD program will be done afresh, during the time of departmental interview. The supervisor may be different form the one appointed for the MTech program.

VII. Award of degree and Exit options:

a) After successful completion of the Viva Voce relating to his/her PhD works, the student concerned will be awarded the MPDD together. The MTech degree will be retroactive from the date of the completion of his/her fulfilment of minimum credit requirement for any MTech program/Comprehensive Examination.

b) If the candidate intends to leave the program any time after four semesters or is unsuccessful in the Comprehensive Exam, then the candidate will be entitled to only an MTech degree.

------End------

Annexure-H

Format for Submission of Agenda for the Senate meeting

1 Meeting	SENATE
2 Department	(Civil Engineering)
3 Agenda Item No	Serial no. as per the agenda item of the department for eg. (2022/SENATE/CE/1)
4 Agenda	Proposal for starting a New Centre of Excellence
5 Background of the Agenda	Provided in the proposal attached
6 Justification of the Agenda	Provided in the proposal attached
Enclosures	Supporting Documents 1. DFB Minutes of Civil Department dated-25/08/2022 item no 6 and 2. 2 CRD proposal)

Signature Mahender 16/12/22

Name: Mahender Choudhary

Designation: Head, Civil Engineering

Date: 16/12/2022

1519
16/12/22 Dean Academics

Department of Civil Engineering

Minutes of the DFB Meeting

A meeting of the Department Faculty Board was held on Monday, 25 July 2022, at 3.30 pm in the Civil Seminar room. At the outset, The HoD welcomed all the faculty members. The DFB discussed the following agendas:

1. The department's requirement for additional computers for faculty, laboratories and research scholars was discussed. The department needed 76 new terminals for different users as per details provided in the format supplied by Dy. Registrar, S&P.
2. Some faculty raised the issue of furniture shortage, for which the office of Civil Engineering Department is directed to collect the requirement from all labs and faculty. The office will then send it to the store for procurement.
3. The intake capacity of M.Tech students in each of the five M.Tech Disciplines was discussed, and most faculty agreed to reduce the intake through GATE to 15 while keeping the other intakes undisturbed. It was further suggested that the faculty of each stream would let the HoD know whether they wanted to continue with the same numbers till 26 July. No such request is received, so it is confirmed to reduce the intake for all M.Tech. branches.
4. DFB would further like to request the senate to increase the number of Ph.D. scholars on institute assistantship from 3 to 4 per faculty member.
5. As reported by the security office, there was a theft attempt in the department (AC unit). The safety and security issues within the department were discussed. It was decided that the CCTV cameras at various key locations, labs and corridors should be installed urgently and further necessary measures are taken to curb any future incidents.
6. The establishment of a "Center for Rural Development" as an inter-departmental venture was discussed. It was decided that the proposal is accepted and faculty from other departments be invited to join/give their views on the same. It was agreed to move the proposal further for necessary approvals.
7. A new UG Scheme for Civil Engineering was put up for discussion. It was decided that the faculty will send their suggestions for the same over email by 26 July 2022. The scheme shall be sent to the academic section after considering the comments from the faculty.
8. The application of Dr. Shantanu Sarkar for adjunct faculty was discussed in the DFB, and there was a mixed response on his potential contribution to the academics of the department. However, looking at his very bright academic career, the application is forwarded to Dean of Faculty Affairs for consideration.
9. The requirement of space was raised by many faculty members, and concern was raised on the pendency of works for additional space requirements for RMT lab, Soil lab, and pending civil work in the WRE lab. It was resolved to again send the above requirements to Dean P&D along with a proposal to raise on the floor above the existing building of the Civil Engineering Department. It was also proposed to provide a proper ambience to the research scholars.

The list of faculty present in the meeting is recorded in the register maintained in the department. The meeting ended with a vote of thanks to the Chair.

Date:27/07/2022

(Mahender Choudhary)
PCE & Head

FORMAT FOR SUBMISSION OF PROPOSALS FOR STARTING ANY OF THE FOLLOWING CATEGORY OF PROGRAMS/ENTITIES

(Tick one or more of the following categories)

A. New UG Program
B. New PG Program
C. New Department/ Conversion from Centre to Department
D. New Centre of Excellence

I. BACKGROUND INFORMATION

Name of proposed program/department/entity
Centre for Rural Development (CRD)
Primary contact person from the proposing team for administrative purpose
Prof. Mahender Choudhary (HOD, Civil)
Name of Coordinating Department/Centre
Civil Engineering Department
Other depts./centers, directly involved through labs, courses, faculty etc.
Electrical dept., Architecture and planning dept., Management studies dept., Mechanical engineering dept., Metallurgical & Materials Engineering dept., Centre for Energy and Environment, Chemical Engineering
Justification and need of the initiative (min 500 words)
India is a rural dominated economy with about 70% population living in a rural area, contributing about 30% to the GDP. Traditionally, agriculture has been the key source of income and employment in rural area, but that place is being taken by the non-farm sector over a period. To become a 5 trillion $ economy, 'Rural Revitalization' is essential and the contribution from rural areas to GDP must increase. This underscores the need for the development of people residing in rural areas. One of the ways to imbibe growth in rural economy is by making technological interventions in their traditional engagements. Knowledge-based technology applications and

validation of tradition-based systems can help to integrate traditional knowledge with modern technology, thus allowing sustainable growth of rural areas.

As per the Census 2011, rural population of Rajasthan is about 75% of the state's total population. Rural development would not only benefit the people residing in rural areas but is also beneficial for the economic growth of the nation. Equitable growth of urban and rural areas is necessary to minimize migration to urban areas and provide equitable livelihood opportunities for rural areas. Providing rural areas with better access to technology and innovations could help to enhance the skill sets of rural youth. The primary focus with reference to rural development should focus on the maximum agricultural return and sustainable livelihood growth.

Existing research and development efforts mainly focus on urban areas as compared to the development of rural areas. This bias towards urban area needs to be changed. The establishment of a focused center on rural development can help to enhance/adapt/improvise these technologies, and the impact of technology transfer can be significantly high. The benefit of these technological interventions can subsequently trickle down to rural regions.

Most of the innovation and development that takes place in the rural area are not location centric, and usually, one policy and approach is adopted for the entire nation. It should rather be location-centric; therefore, it is essential first to understand the problem of the specific rural location and accordingly make policy for the development of the targeted rural area. The challenges in the rural area of Rajasthan may differ from those in other parts of India. Therefore, the approach and idea of establishing the Centre in different parts of the country will help to understand the challenges associated with local communities and provide an appropriate solution for rural development. Moreover, the paying capacity of rural folks is limited, hampering their ability to invest in technology and innovation. Thus, the establishment of CRD would generate opportunities for the people of rural areas and ensure that the technology is financially affordable so that their livelihood can be uplifted.

There is also a mismatch between organizations with perception and people with useful resource for rural technology improvement. As a result, different centers and organizations that have resources do not have any perception of the needs and demands of the rural population. Alternatively, the grass-root NGOs who have the belief of their challenges do not have the technological resources to solve them. A dedicated rural development Centre can fill this gap.

Other prominent institutes in the country offering similar program/running similar entities
IIT Delhi, IIT Bombay, IIT Indore, IIT Kharagpur, IIT Hyderabad, NITTTR Chandigarh
Prominent international institutes offering similar program/running similar entities
Lativia University, University of Reading, UK; Utah State University, USA; Humboldt University Berlin, Mississippi State University, USA;New castle University, UK; University of Kent, UK; University of the Highlands and Islands, UK
Differentiating factor for MNITJ w.r.t. above institutes (min 200 words)
As opposed to the growth of rural areas, current research and development activities mostly concentrate on metropolitan areas. It's necessary to change this preference towards urban areas. The creation of a centre specifically dedicated to rural development can aid in enhancing, adapting, and improving these technologies, and technology transfer can have a very positive effect. The advantages of these technology interventions can then spread to rural areas. Most of the innovation and development that occurs in rural areas is not site-specific, and typically one strategy or policy is chosen for the entire country. It should instead be location-centric, so it is imperative to first comprehend the issue in the rural location before making policies for the development of the intended rural area. Rural Rajasthan may face different difficulties than other regions of India. Therefore, the strategy and concept of opening the centre in various locations across the nation will aid in understanding the problems faced by local communities and in offering a suitable remedy for rural development. Additionally, rural residents' limited purchasing power limits their ability to make investments in technology and innovation. Therefore, the creation of CRD would provide chances for those living in rural areas and ensuring that the technology is financially accessible to enable them to improve their standard of living. At the moment, these Centers, which go by many names, are well-established in nearby states at IIT Delhi, IIT Bombay, IIT Indore, IIT Kharagpur, IIT Hyderabad, and NIITR Chandigarh and are helping to solve the difficulties in rural areas. Furthermore, to accomplish the aforementioned goals, a dedicated centre for rural development at MNIT Jaipur is realistically required given the western region of the country, particularly the desert of Rajasthan. This centre will address the issues faced by Rajasthan's rural areas. There are significant research gaps that need to be considered since the demographic issues and assets have not been sufficiently explored and understood. MNIT Jaipur will cater to the issues of the desert rural population residing in Rajasthan which no other Institute is focused on. Moreover, no other institute is working on Food-Energy-Water Nexus, and enhancement of livelihood for the desert people.

Is there any government/national mandate/alignment with National Missions/SDG fulfillment for starting new program
SDG 7, 13, 15. NAPCC 4 missions will match, Phase II of Swachh Bharat Mission, Tap Water to every household (Har Ghar Jal Mission). National Water Mission
Major funding agencies that may be approached for supporting the program/running the entities
RD department/ Ministry of Center and State, Child and women Empowerment, Min. of Jal Shakti, EPCH (export promotion council for handicraft), Atmanirbhar panchayat, Corporate CSR
Name of five prominent national experts operating similar programs/entities
Prof Anand Rao, IIT Bombay; Prof. Subir K Shah, IIT Delhi; Prof Sandeep Choudhary, IIT Indore Prof Santosh Satya, IIT Delhi

II. STRENGTHS

Team initiating the new program/entity: (Min 4 members for PG program/ 6 for UG program/ 5 for new department, Min 5 members from at least 3 different departments for CoE)
Prof. Mahender Choudhary, Civil Engineering Prof. A.B. Gupta, Civil Engineering Prof. B.L. Swami, Civil Engineering Prof. Sudhir Kumar, Civil Engineering Dr. Rohit Bhakar, Electrical Engineering Dr. Ravita Lamba, Electrical Engineering Dr. Nand Kumar, Architecture and Planning Dr. Satish Pipralia, Archi. and Planning Dr. Satish kumar, Management Studies Prof. Dilip Sharma, Mechanical Engineering Prof. Upendra pandel, Metallurgical & Materials Engineering Prof. Himanshu Choudhary, Mechanical Engineering

Prof. Mahesh Kumar Jat, Civil Engineering Dr. M. L. Meena, Mechanical Engineering Dr. Virendra Saharan, Chemical engineering Dr. Rohidas Bhoi, Chemical Engineering Dr. Sunanda Sinha, CEE Dr. Parul Mathuria, CEE
Existing credit courses taught by team members in relevant area over the past three years
WRE, Energy & Environment, Climate Variability and Adaptation, Energy management, solar photovoltaic tech, energy resource utilization, ergonomics, life cycle assessment, design of machines, mechanical design of process equipment, process piping and design, introduction to planning
Present SFR of participating departments/centres
Architecture & Planning-22, CEE-9.0, Civil Engg.-15.4, Chemical Engg-15.8, Electrical Engg.-17.55, Mechanical Engg.-16.3, Metallurgical & Materials Engg.-30.8
Ongoing research projects of team members in relevant area
Please refer the Annexure-I
Relevant publications by team members in proposed area over past three years
Please refer the Annexure-I
Ongoing national/international collaborations in the relevant area
Collaboration with State Watershed Department for capacity enhancement and technical guidance on Watershed development, MoU with CRRI New Delhi to undertake RnD in the field of Road infrastructure including Rural Roads.
Ongoing industry engagements in the relevant area
None
Existing infrastructure/facilities/IP available with the proposing team created through their previous grant/institutional support/research that will be useful for the proposed program/entity
All the participating departments have multiple facilities which have utility in fulfilling the proposed Centre objectives.

III. REQUIREMENTS

Does the entity require separate/additional space: Yes/no
No
If answer to above question is yes, give breakup of space requirement with justification
NA
Does the program/entity require financial support from the Institute: Yes/no
NO
If answer to above question is yes, give financial requirement with justification over next 5 years
NA
Does the program/entity require additional faculty/guest faculty/ staff/ technicians/ infrastructure: Yes/No
No
If answer to above question is yes, please give specific (faculty/guest faculty/ technician/ staff) requirement with justification
NA
Central facilities required
Yes
Additional teaching load created to float the proposed program
no
Proposed student Intake of program
Yes (PhD)-20 number
Nature of program: Full time/ Part time/ Online/any other
PhD-Full time/ Part time
Is the program to be run under SFS mode (Yes/no)
NA
If answer to the above question is yes, proposed fee structure for the program
NA
Curriculum details (preferably through curriculum dev. workshop) in the relevant area
NA

Proposed admission Process: for example JEE/CCMT/own test…
Institute admission process

IV. PROJECTED OUTCOMES FOR FUTURE EVALUATION

Expected placement for graduating students (names of atleast 10 companies/organizations as potential recruiters)
NGOs, Faculty position, Industry working in farm machinery & manufacturing (M&M, Jain Irrigation, Finolex pipes,) sprinklers and drip irrigation
Expected revenue generation (IRG)
NA
Target mean graduating student feedback score indicating achievement on all defined outcomes on scale 1 to 10
9
Expected yearly research output from the entity over next 5 years
20 paper, 2 patent, 2 conference, Technology development
Expected yearly consultancy/funding output from the program over next 5 years
50 lakh
Expected other outcomes, including social outreach, from the entity over the next 5 years
10 events at village level
Does the entity plan to start any new UG/PG program over next five years: Yes/No
No
If answer to above question is yes, please give the plans/need with justification
NA

Guidelines for filling the form:

1. Complete details are be provided in the space provided, expanding it as needed or as annexures.
2. All relevant cells for any category are to be filled.
3. The projections submitted through this form will also be used for evaluating the performance of the new program/department/Centre in subsequent years, atleast once after three years and five years.

ANNEXURE-I

Publication in last 3 years

1. Khan, A.; Bhoi, R.; Saharan, V. K.; George, S. "Green calcium-based photocatalyst derived from waste marble powder for environmental sustainability: A review on synthesis and application in photocatalysis," *Environ Sci Pollut Res Int* , 2022, doi: 10.1007/s11356-022-20941-4.
2. Suja George, RohidasBhoi, Virendra Kumar Saharan, "Green biomaterial hydroxyapatite derived from waste marble powder for applications in water defluoridation: Comparative study on materials synthesized by different processing routes," Materials Today: Proceedings volume :57 / 157-64 / 2022 DOI: 10.1016/j.matpr.2022.01.331
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5. Khursheed B. Ansari, SaeikhZaffar Hassan, RohidasBhoi, Ejaz Ahmad, "Co-pyrolysis of Biomass and Plastic Wastes: A Review on Reactants Synergy, Catalyst Impact, Process Parameter, Hydrocarbon Fuel Potential, COVID-19 Waste Management," *Journal of Environmental Chemical Engineering*, volume:9/106436/2021 DOI: 10.1016/j.jece.2021. 106436
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10. N. R. N. V. Gowripathi Rao, Himanshu Chaudhary, A. K. Sharma, "Optimal design and analysis of oscillatory mechanism for agricultural tillage operation," *SN-Applied Sciences*, volume :1 / 1-5 / 2019
11. N R N V Gowripathi Rao, Himanshu Chaudhary, and A.K. Sharma, "Design and development of vibratory cultivator using optimization algorithms," *SN-Applied Sciences*, volume :1 / 1 / 2019

12. Raina, G., Sinha, S., "A holistic review approach of design considerations, modelling, challenges and future applications for bifacial photovoltaics," *Energy Conversion & Management*, 2022 (Accepted).
13. Sharma, S., Sinha, S., Raina, G., Malik, P., Katoch SS., "Investigation and performance analysis of active solar still in colder Indian Himalayan region," *Groundwater for Sustainable Development*, 2022 (Accepted).
14. Raina, G., Sharma, S., Sinha, S., "Analyzing the impact of dust accumulation on power generation and bifacial gain," *IEEE Transactions on Industrial Applications*, volume 58 (5), 2022, Pages 6529-6535
15. Vishwakarma, A., Sinha, S., "Box type solar cooker with thermal storage: an overview," *Energy Systems*, 2022 (Accepted).
16. Raina, G., Mathur, S., Sinha, S., "Behavior of bifacial and monofacial photovoltaic modules under partial shading scenarios," *International Journal of Energy Research*, volume 46, 2022, Pages 12837–12853.
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20. Malik, P., Awasthi, M., Sinha, S. "A technoeconomic investigation of grid integrated hybrid renewable energy systems," *Sustainable Energy Technologies and Assessments*, Volume 51, 2022, Pages 101976
21. Sinha, S., Chandel, S.S., Malik, P., "Investigation of a building integrated solar photovoltaic wind battery hybrid energy system: A case study," *International Journal of Energy Research*, 2021;1-6. doi:10.1002/er.7184
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23. Malik, P., Awasthi, M., Sinha, S. "Technoeconomic and Environmental analysis of biomass-based hybrid energy systems: A Case study of a Western Himalayan State in India," *Sustainable Energy Technologies and Assessments*, volume 45, 2021, Pages 101189.
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28. Malik, P., Awasthi, M., Sinha, S.," Study of grid integrated biomass-based hybrid renewable energy systems for Himalayan terrain," *International Journal of Sustainable Energy Planning and Management*, volume 28, 2020, Pages 71-88.
29. Sharma, S., Sinha, S., "Indian wind energy & its development-policies-barriers: An overview", Environmental and Sustainability Indicators, Volume 1-2, 2019, pages 1-9.
30. Raina, G., Sinha, S., "Outlook on the Indian scenario of solar energy strategies: Policies and challenges," *Energy Strategy Reviews*, volume 24, 2019, pages 331-341.
31. A. Khan, R.G. Bhoi, V.K. Saharan, S. George, "Green calcium-based photocatalyst derived from waste marble powder for environmental sustainability: A review on synthesis and application in photocatalysis," *Environmental Science and Pollution Research*, 29 (2022) 1-29.
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PhD

1. "NRNV Gowripathi Rao (2016RME9035)," on Design and Development of Vibratory Tillage Cultivator Year - 2020 (Completed).
2. "Prem Singh ((2014RME9040) (2014RME9040)," on Optimum Design and Development of Multi Crop Thresher Machine Year - 2019 (Completed)
3. "Amita Sharma," Distribution network pricing models (with Dr. H.P. Tiwari, MNIT Jaipur) 2019.
4. "Vivek Prakash," Frequency response mechanisms for low carbon power systems (with Dr. H.P. Tiwari, MNIT Jaipur) Oct. 2019.
5. "Partha Das," Market design and policy framework for sustainable energy storage integration. (with Prof. J. Mathur, MNIT Jaipur). Jan. 2020.
6. "Sreenu Sreekumar," Ramp product design for enhancing power system flexibility. Awarded - June 2020.
7. "Sandeep Chawda," Risk Management in Energy Markets. Awarded: Dec. 2020.
8. "Priyanka Kushwaha," Primary frequency response adequacy for low carbon power systems (with Prof. Udaykumar R. Yaragatti), Awarded - June 2021
9. "Anjali Jain," Modelling operational aspects in long-term power generation planning with high RE penetration. Registration: Jan. 2018 (with Prof. J. Mathur, MNIT Jaipur). Submitted Dec 2021.
10. "Sumanth Yamujala," Operational flexibility enhancement in low-carbon power systems. (with Prof. J. Mathur, MNIT Jaipur) May 2022.

BOOK CHAPTERS

1. Jain, P., Raina, G., Mathur, S., Sinha, S., (2022) " Optical modeling techniques for bifacial PV," Book Chapter in Renewable Energy for Sustainable Growth Assessment (RESGA-2021) Scrivener Publishing, Print ISBN:9781119785361; Online ISBN:9781119785460; DOI:10.1002/9781119785460
2. Mathur, S., Raina, G., Jain, P., Sinha, S., (2022) "An Overview of Partial Shading on PV systems" Book Chapter in Renewable Energy for Sustainable Growth Assessment (RESGA-2021) Scrivener Publishing, Print ISBN:9781119785361; Online ISBN: 9781119785460; DOI:10.1002/9781119785460.
3. Sharma, S., Raina, G., Malik, P., Sharma, V., Sinha, S., (2022) "Different Degradation Modes of PV Modules: An Overview." Book Chapter in Advancements in Nanotechnology for Energy and Environment, Springer Nature, Print ISBN: 978-981-19-5200-5; Online ISBN: 978-981-19-5201-2; page: 99-127.
4. Book Chapter, "Advanced technologies for wastewater treatment: New trends" ISBN:978-0-12-821496-1 published by - Elsevier Year: 2021 authors- J. Katiyar, S. Bargole, S. George, R. Bhoi, V.K. Saharan.
5. Book Chapter, "Preparation of novel adsorbent (marble hydroxyapatite) from waste marble slurry for ground water treatment to remove fluoride" ISBN:978-0-12-821496-1 published by - Elsevier Year: 2021 authors- S. George, D. Mehta, V.K. Saharan

RESEARCH PROJECTS

(a) Research Projects carried out as PI/Co-PI

S. NO	AGENCY (Sponsoring)	PROJECT TITLE	COST (LAKH)	FACULTY MEMBERS INVOLVED
1	RPCB, 1996	Assessment of Ground Water quality of Sanganer Area: Evaluation of impact of Dyeing and Printing Industries	0.60	Prof. A.B. Gupta & Mr. Sudhir Kumar
2	RPCB, 1996	Health impact due to ACC cement plant, Lakheri	2.00	Prof. A.B. Gupta & Dr. Kapil Gupta
3	DST, Rajasthan, 2000	Indoor air quality: monitoring of domestic environs of Jaipur city	0.09	A.B. Gupta, R. Jain and Tarun.P. Gupta
4	AICTE, 2006	Monitoring & Characterization of Respirable Particles in Urban Environment (Outdoor/Indoor) and their Association with Human Health	20.00	A.B. Gupta and Nivedita Kaul
5	DST, GOI (WOS) 2007	Development of mathematical model for forecasting of effect of salinity and pollutants transport in the groundwater	6.75	Dr. Meeana Bhaduri Dr. A.B. Gupta and Dr. Rohit Goyal
6	UNICEF, 2011	Feasibility Study for Defluoridation of Drinking Water By Electrocoagulation Using Aluminium Electrodes	5.46	A.B. Gupta and Dr Sanjay Mathur
7	DST, GOI (Sep 29, 2011)	Assessment of possibilities of recovery and reuse of	31.19	A. B. Gupta; Dr Kailash Singh; Saakshi

		wastewater in handmade paper industry in Sanganer		
8	CCDU, GOR (2012)	Development of a Solar Energy based Membrane Distillation System for rural drinking Water applications in Rajasthan	10.5	A.B. Gupta, Dr S. P. Chaurasia, Sushant Upadhyaya, G. D. Agarwal
9	CCDU, GOR (2013)	Membrane Integrated Modified Nalgonda Defluoridation Technique for drinking Water	15.9	Madhu Agrawal, Suja George, A.B. Gupta, Dr S. P. Chaurasia,
10	CCDU, GOR (2013)	Development of Field Test Kit for Detection of Total Coliforms and E .coli in Drinking Water	8.92	Dr Urmila Brighu, A.B. Gupta
11	RPCB (2014)	Treatment of textile wastewater using sand as a low cost adsorbent	24.34	Dr Urmila Brighu, A.B. Gupta,
12	DST, Rajasthan India (2013)	Defluoridation of Drinking water using Combination of Magnesium and Calcium amended activated alumina	11.524	Suja George, A.B. Gupta
13	RPCB (2015)	Utilisation of Marble Slurry powder for Production of Hydroxyapatite (HAP) suitable for defluoridation of drinking water	42.976	Suja George, Virendra Saharan, A.B. Gupta
14	DST, GOI (2017)	Optimization of the Disinfection Process for Secondary Treated Sewage by Hybrid Disinfection	42.64	A.B. Gupta and Dr Sudipti Arora

15	DST, GOI (2019)	Development of innovation centre for eco-prudent wastewater solutions (IC-ECOWS)	5.10 crore (total outlay)	A.B. Gupta, Dr Urmila Brighu (in collaboration of NIH Roorkee, IIT Bombay and IRMA)
16	DST, GOI (2019)	Identifying best available technologies for decentralized wastewater treatment and resource recovery for India (Saraswati 2.0)	9.8 crore (total outlay)	Dr Vivekananda, A.B. Gupta(Indo- EU project with 8 partners)
17	INCCC, MoWR, Govt. of India 2022	Climate Change Impacts Studies for Rajasthan (Area of Inland Drainage and Mahi Basin)	2.54 Crore	Completed
18	Dept. of Watershed Devl. & Soil Conservation, Govt. of Raj. 2018	Development of Experimental Watershed and Hydrological Modeling for Improvements in Performance of Watershed Intervention Works	1.50 Crore	Ongoing
19	DST, SERB-POWER Grant 2022-2025	EV Charging Coordination and Navigation Solutions for Smart Cities		Dr Rohit Bhakar
20	Co-I, GIAN	Multi Agent and Microgrid Concepts	INR 0.6 Million.	Dr Jignesh Solanki, West Virginia University
21	PI from SPARC Sept 2019 to Sept 2022.	Market Models for Local Energy Transactions	INR 10 Million	Dr Rohit Bhakar

22	Co-I from SPARC Sept 2019 to Sept 2022	Cooperative Micro Grids Integrated Smart Electric Transportation Systems (CMGISETS): Coordinated Technologies for Seamless Energy Management	INR 10 Million	Dr Rohit Bhakar
23	Co-I, from Department of Science & Technology, Government of India, MNIT Jaipur	Cooperative isolated renewable energy systems for enhancing reliability of power in rural areas	INR 30 Million	Dr Rohit Bhakar

Mobile

Format for submission of proposals for starting any of the following category of programs/entities

(Tick one or more of the following categories)

a) **New UG Program**
b) **New PG Program**
c) **New Department/Conversion from Centre to Department**
d) **New Centre of Excellence ✓**

I. BACKGROUND INFORMATION

Information required	**Detailed Response**
Name of proposed program/department/entity	**Centre for Cyber Security (CCS)**
Primary contact person from the proposing team for administrative purpose	Dr. Ramesh Babu Battula
Name of Coordinating Department/Centre	Department of CSE
Other depts./, directly involved through labs, courses, faculty etc.	
1. *Department of Computer Science and Engineering* 2. *Department of Electrical Engineering* 3. *Department of Electronics and Communication Engineering* 4. *Department of Physics* 5. *Centre for Energy and environment* *Since this is proposed as a research center, engagement of faculty will be primarily for research, consultancy and funded projects. Laboratory utilization will be for research, consultancy and funded projects. Course engagement is not envisaged.*	
Justification and need of the initiative (min 500 words)	

The government of India is majorly relying on security to provide the reliable functioning of the critical infrastructure. The cybersecurity threats take advantage of the increased complexity and connectivity of critical infrastructure systems, placing the Nation's security at risk. To enhance the security and resilience of the Nation's critical infrastructure and to maintain a cyber environment that encourages efficiency, innovation, and economic prosperity while promoting safety, security, business confidentiality, privacy, and civil liberties.

Global vital infrastructures like water, energy, mobility, etc., are integrating with ICT technologies such as the Internet of Things (IoT), Artificial intelligence, machine learning, deep learning, decentralized learning, cloud computing, mobile edge computing, etc. The rapid growth of smart technologies enabled ample opportunities for innovation in social and economic transformations. Protecting the critical/ digital infrastructure is a daunting task in the heterogeneous mess of next-generation technologies. Protecting such ICT infrastructures and the information stored and processed in them has become a significant concern because of the potential damage that security and privacy breaches can cause to individuals, organizations, and nations. The rapidly growing frequency and severity of cyber-attacks and cybercrimes that are both *disruptive* and *destructive* are well-documented, and they pose significant threats to national and economic security and the well-being of our society. The Internet of Things (IoT), big data, smart and resilient cities/planet, cloud/fog infrastructures, etc., are recent ICT developments making cyberspace ever more complex and significantly increasing the attack surface.

Further, the regulatory and legal boundaries across different geographic regions introduce significant challenges to handling cybercrimes and intrusions and establishing trust boundaries to guide cyber security responses. Besides innovative cyber security solutions, there is a critical need to develop novel and pragmatic approaches to mitigate risks and make cyberspace more resilient. There is an urgent need for accelerated, highly multidisciplinary, and translational cyber security research to generate foundational, holistic and easily deployable solutions as systems, tools, techniques or methodologies. MNIT is uniquely positioned to leverage its strengths to become a leading place for holistic, multidisciplinary cyber security research.

This proposal aims to establish a cyber security research center at the MNIT Jaipur whose goal will be to foster highly integrated, holistic and interdisciplinary undertakings that push the boundaries of cyber security research and development. It will leverage and build upon the synergies among various

Format for submission of proposals for starting any of the following category of programs/entities

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Name of Coordinating Department/Centre	Department of CSE
Other depts./, directly involved through labs, courses, faculty etc.	
1. *Department of Computer Science and Engineering* 2. *Department of Electrical Engineering* 3. *Department of Electronics and Communication Engineering* 4. *Department of Physics* 5. *Centre for Energy and environment* *Since this is proposed as a research center, engagement of faculty will be primarily for research, consultancy and funded projects. Laboratory utilization will be for research, consultancy and funded projects. Course engagement is not envisaged.*	
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Other prominent institutes in the country offering similar program/running similar entities
1. IIT Kanpur – "Prabhu Goel Research Centre for Computer and Internet Security" 2. IIT Delhi – "Centre of excellence in cyber systems and information assurance" 3. IISc Bangalore – "Security Group" 4. IIT Madras – "Robert Bosch Centre for Data Science and Artificial Intelligence (RBC-DSAI) – cyber security" 5. IIT Bombay – ""The Ministry of Home Affairs (MHA) has setup the Indian Cyber Crime Coordination Centre (I4C)
Prominent international institutes offering similar program/running similar entities
1. Stanford – "The CISPA-Stanford Center for Cybersecurity" 2. MIT – "Cybersecurity at MIT Sloan (CAMS)" 3. Carnegie Mellon University – "CyLab" 4. Syracuse University – " Cyber security" 5. US air force academy – "Academy Center for Cyberspace Research (ACCR)"
Differentiating factor for MNITJ w.r.t. above institutes (min 200 words)

The Proposed Centre for Cyber Security (CCS) : Vision and Strategic Goals

a. Vision and mission of the CCS

The CCS conducts advanced research, training, and development that solves many societal issues and critical infrastructure issues. The center for cyber security contributes to the technology society by trailblazing bleeding-edge, practical solutions for the end devices, strong computing foundations and large-scale critical infrastructure validates through empirical studies,

To conduct High-impactful translational research to empower and facilitate foster sustainable academic collaborations. "The Cyber Center also executes ***hands-on research workforce development activities*** *to empower the next-generation of trainees in focused and multidisciplinary research areas, including cyber forensics, data science and machine learning, systems security, cyber-physical systems, self-driving networking, and advanced cyber infrastructure." The Centre for Cyber security (CCS) designs, develops, evaluates, delivers and maintains cyber security and data science tooling capabilities and plugable agile software to private, state and federal entities.*

b. Strategic goals

1. The center will conduct and develop core cyber security critical mass research in predominant areas like trust, identity, privacy, security and resilience.

   The center will facilitate and foster multidisciplinary collaborations among faculty within the MNIT Jaipur by exploiting the synergies that exist, and by exploring new opportunities. *We will create* ***high priority areas*** *in a timely manner to streamline multidisciplinary research efforts in these areas so as to generate significant momentum early on.*

2. The center will provide foundational support to affiliated faculty to explore and establish closer collaborations with other research institutions/center (academia, industry and government institutions) locally as well as globally to enable innovation and exploration in relevant research.
3. The center will establish a seamless, holistic infrastructure to enable affiliated researchers and groups to serve local, regional, and global communities in cyber security and cyber defense/operations with regards to state-of the art research, training and education. Such a holistic infrastructure will include:
   a) A state-of-the-art technical research infrastructure,
   b) An outreach infrastructure, an infrastructure for translating research into deployable prototypes, processes/methodologies, and tools. and
   c) An infrastructure for research outcomes-driven education, training and awareness.

International Status

Research programs in cyber physical power system across the world are leading to new discoveries and technologies as well as educating a multidisciplinary future workforce. In recent years, many university labs and institutions have been established to do research on cyber physical system security. The major areas of research includes analyzing the vulnerabilities in the substation, SCADA, and control center of the power grid, quantitative impact analysis of cyber-attacks on the operational security and stability of the power grid, evaluating the risk due to cyber-attacks, cyber-attack detection and mitigation based on model based as well as on machine learning based approaches.

In general, the majority of the research work is going on in many American and European universities. At Iowa state university, the major Power Cyber testbed is built which provides an accurate environment for simulation and evaluation of power system security-related current issues. For analyzing the security of the SCADA system, a testbed is built at the University of Arizona. Similarly, various testbeds such as virtual power system testbeds at the University of Illinois, Virtual Control System Environment at Sandia National Laboratory, and names too few have been built at various universities.

At the University of Illinois, researchers are working on designing and testing technologies to create more resilient power systems and other teams are analyzing the stability of the real-time pricing market when price information transmitted over communications networks is compromised. The researchers of Iowa State University and Cylab of Carnegie Mellon University mainly focused their study on electric power grid security. Researchers at the University of California at Los Angeles and the University of Pennsylvania are contributing to promoting the robustness of cyber-physical systems.

A lot of work has been done on attack modeling, its detection and mitigation, and securing the power grid by a number of researchers working at different universities across the world such as in America, Washington University in St. Louis, University of Virginia Main Campus, the University of Illinois at Chicago, University of South Florida, Texas Southern University. The Toronto University and the University of Macchill in Canada, the Queensland University of Technology and the University of Quebec in Australia, TU Darmstadt, Hochschule Darmstadt, CASED in Germany etc.

Although significant research has been done in the area of cyber physical power system security at international level, still there remains the significant research gaps which needs to be addressed further. For example, the existing testbeds available in most of the universities and industry research labs are utilized for testing specific methods only. Thus, it calls for the development of new testbeds having various capabilities for verifying and validating the new concepts of CPPS in near future.

National Status

At present, in India, the concept of smart grid is still evolving thus the main challenge is to protect the subsystem from the cyber-attack which has never been fully provided with cyber security measures. Although the Indian institutions like IIT Bombay, IIT Kanpur, IIT Delhi, IIT Mandi, IIT Khagargpur, MNIT Jaipur and others are contributing in addressing the cyber security issues in the power system. However, there does not exist a dedicated research center for cyber security studies in power systems. Due to the lack of sufficient research and resources, there still exists significant research gaps that require attention. Most of the studies are based on the simulation owing to financial constraints. However, a major drawback is the limited ability to represent the real time features of the actual system. It is essential to test the developed techniques and components prior to the actual implementation thus in academic institutions availability of hardware or hybrid testbeds plays an important role but due to economic reasons or lack of funding the majority of testbeds embrace simulation models thus lacking in producing high quality research and innovation outputs.

Target Research Areas

The center will strive for agility in initiating or creating new research directions and generating strong research momentum in these directions ahead of its peers. Initial targets for research will be:

Three vertical-based research to be conducted in CCS.

A. ***Data Security & Privacy***: MINT Jaipur already has a solid foundation in the creation and management of data. Still, as the massive data field emerges and opens up new research opportunities, numerous departments are concentrating on closely linked research. Using technologies from massive data analytics, complex issues can be solved. Massive Data applications present difficult research difficulties for privacy and security. The proposed will give researchers working on Massive Data and Security/Privacy projects a place to collaborate. These include, among others, examining synergies between MNIT researchers working in cloud computing, social informatics, smart grid, electric car security, and medicinal informatics. Faculty members have made some initial attempts to address concerns about privacy in social networks and location-based services (such as access management and anonymization) as well as cloud security and privacy.

B. ***Computer Security and Privacy:*** Critical infrastructure protection has become a matter of national security. In critical infrastructure sectors, developing computer usage is more important, including the Smart Grid, nuclear engineering, transportation, manufacturing, etc. MNIT is highly present and a dominant player. We can ensure highly interdisciplinary efforts to produce high-impact research contributions to national defense through the proposed center by laying the groundwork to safeguard major infrastructures. Writing funding proposals for future networks and cyber security has involved some first collaboration. Additionally, some joint initiatives are being explored in the security domain of Smart Grid. MNIT also offers a variety of options in related fields, including manufacturing, transportation, the internet of things/medical devices, 3D printing, etc.

C. **Network Security and Privacy:** Wired/Wireless communication is receiving a high growth in present technological enhancement. With the recent working 4G LTE technology, there is already high usage of the mobile Internet. This usage is continuing to grow with time. In today's smart world era, wireless devices are contributing a significant part to this traffic. The expansion of the Internet of things drives the usage of wireless devices, extended use of smart devices like smartphones, smartwatch, etc., and various new applications used to ease human life. A significant impact of this evolution can be seen in cellular technology. The 5G wireless networks is going to fulfill the requirements for these new services and applications. 5G is not a mere extension of 4G but the integration of new disruptive technologies to meet the ever-growing demands of user traffic, emerging services, existing and future IoT devices. With these new advancements, we are going to face the new security challenges in this field. Due to the combination of massive number of IoT devices and the provision of new services, for example for smart homes. hospitals, transport, and electric grid systems in 5G.

D. **Grid Security and Privacy:** A growing demand for uninterrupted power supply and numerous technological advancements have led to the development of smart grid. According to the IEEE Grid Vision 2050, the main expectancy of the smart grid is to have the control and automation processes spread over the entire power grid to allow efficient and reliable bidirectional power flow. This is accomplished by incorporating the advanced information and communication technology in the existing power grid resulting into the Cyber Physical Power System (CPPS). Smart grid has substantial and far-reaching economic and social benefits. However, increased interconnection and integration of various intelligent electronic devices tend to introduce cyber-vulnerabilities not only on the Information Technology (IT) but also on its Operational Technology (OT). The interdependence of physical and cyber layers is growing simultaneously and imposing remarkable challenges in terms of protecting the grids from cyber-attacks. All over the world, government, non-governmental bodies and academic institutions are conducting ongoing research for addressing different issues related to cyber security in the smart grid. The main focus of the research is prevention of cyber-attacks, its detection, mitigation of its impacts, resilience, privacy protection etc. In order to remain ahead of the attackers, it's essential to engage the academic institutions in cyber security research in order to develop, test and implement stronger cyber security solutions that can defend critical infrastructure from increasingly sophisticated attacks.

This proposal aims to establish a cyber security research center at the MNIT Jaipur whose goal will be to foster highly integrated, holistic and interdisciplinary undertakings that push the boundaries of cyber security research and development. It will leverage and build upon the synergies among various units within MNIT Jaipur. The center will focus on both basic research and contributions to solving real-world cyber security, privacy, trust and resiliency-related challenges.

Is there any government/national mandate/alignment with National Missions/SDG fulfillment for starting new program

1. Digital India(https://www.digitalindia.gov.in/): Digital India is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. Secure ICT initiatives will play a major role to achieve the objectives of the program along with a safe and secure cyber space.
2. Smart City (https://smartcities.gov.in/): Smart City Mission is to develop local area by harnessing smart technology for economic growth, improved quality of life and clean & sustainable environment. It will be achieved through the application of "smart and secure solutions".
3. National Smart Grid Mission (NSGM) (https://www.nsgm.gov.in/): The vision of NSGM is to Transform the Indian power sector in to a secure, adaptive, sustainable and digitally enabled ecosystem that provides reliable and quality energy for all with active participation of stakeholders.
4. E-Mobility: https://e-amrit.niti.gov.in/home
5. Ministry of Electronics and Information Technology (MeitY) : https://www.meity.gov.in/content/cyber-security-r-d

Major funding agencies that may be approached for supporting the program/running the entities

1. Department of Science and Technology 2. Science and Engineering Research Board (SERB) 3. Ministry of Health (MOH) 4. Ministry of Electronics and Information Technology (MeitY) 5. Ministry of Telecommunications (MoT)
Name of five prominent national experts operating similar programs/entities
1. Prof. Sandeep Shukla – IIT Kanpur 2. Prof. Sumkumar Nandi – IIT Guwahati 3. Prof. Pandurangan – IIT Madras 4. Prof. Bernard L. Menezes – IIT Bombay 5. Prof. B.K. Panigrahi - IIT Delhi 6. Prof. Bala Subrmanyam - IIT Roorkee

II. STRENGTHS

Information required	Detailed Response	
Team initiating the new program/entity: (Min 4 members for PG program/ 6 for UG program/ 5 for new department, Min 5 members from at least 3 different departments for CoE)		
A summary of the Research will be conducted in the CCS MNIT Jaipur		
Thrust Research	**Possible Research to Conduct**	**Primary researchers**
Cryptography and Foundational research	e.g., formal models and methods, composability and verification, secure & trusted interoperation, cryptography and number theory, quantum cryptography, etc.;	Dr. Meenakshi Tripathi,,Dr. Ramesh Babu, Prof. Kanupriya S, Dr. Venkat Ratnam K, Dr. Palpandi
Systems and hardware-oriented research	e.g., secure processors, secure OSs, static/dynamic analysis techniques; secure software engineering or software security; secure medical devices/RFIDs	Dr. Amit Joshi, Dr. C Perisamy
Secure software-defined networks	e.g., wireless networks; secure SDN, DDoS mitigation, secure SDN,	Prof. Vijay laxmi, Dr. Meenakshi Tripathi, Dr. E S Pilli, Dr. Ramesh Babu B, Dr. Jyoti grover
Trustworthy wireless networks research	e.g., wireless networks; secure middleware; secure mobile infrastructure, security of Internet of Things/Everything infrastructure, etc.	Prof. Vijay laxmi, Dr. E S Pilli, Dr. Meenakshi Tripathi, Dr. Ramesh Babu B, Dr. Jyoti grover
Application security research	e.g., those related to healthcare/bioinformatics applications, database applications security and privacy, social network applications, mobile app security, etc.	Prof. Vijay laxmi, Dr. E S Pilli, Dr. Ramesh Babu B, Dr.Smita Navel
Data-centric security, privacy and trust research	e.g., that relates to big data security, secure data mining, secure knowledge management, anonymization techniques, data provenances and digital curation, etc.	Dr. E S Pilli, Dr. Ramesh Babu B, Dr.Smita Navel
Security, Privacy and Resilience of Cyber-physical systems & Cyber social/human systems	e.g., related to critical infrastructure protection – Smart Grid security, Nuclear Cybersecurity, Transportation infrastructure security; internet of medical devices, vehicular cybersecurity, secure and resilient Smart Cities/Planets; Cyberbullying, Hactivisim, Secure and resilient disaster management, etc;	Dr. Rohit Bhakar, Dr. Ramehs Babu B, Dr. Sachin Sharma, Dr.Sanyam, Dr. Dhiraj Raj, Dr. Amar patnayak
Cyber Intelligence Analytics, Cyber Operations and Forensics	e.g., intelligence data gathering/fusion and analytics for real-time detection (data-driven approaches: DDoS, Honeypots, etc.), digital forensics research, CyberOp methodologies and simulation environments (war room), etc.	Dr. E S Pilli, Dr. Ramesh Babu B, Dr. Dinesh Kumar Tyagi
Trustworthy Computing Paradigms	e.g., relevant to Cloud computing, fog computing, quantum computing, high-performance computing, etc;	Dr. Ramesh Babu B, Dr. E S Pilli, Dr. Rohith Bhakar, Prof. Kanupriya, Dr. Vekata Ratnam
Science of Cyber security	e.g., reproducible experimentation, basic laws for cybersecurity, etc.	Prof. Vijay Laxmi, Dr. Ramesh Babu B, Dr. E S Pilli, Dr. Rohith Bhakar
Secure Smart City	e.g., Smart city grid, connected/autonomous vehicles, e-vehicles security and privacy.	Dr. Rohit bhakar, Dr, Ramesh babu, Dr. Arun kumar. Dr. Dinesh Kumar Tyagi
Centralized/Decentralized Learning for security	e.g., Security for AI, Security and privacy for AI, AI based distributed ledger technologies, etc.,	Dr. Ramesh Babu B, Dr. Rohit Bhakar, Dr. Dinesh Gopalani, Dr. Dinesh Kumar Tyagi, Dr. Namita Mittal
Existing credit courses taught by team members in relevant area over the past three years (Indicate names of concerned faculty in front of those courses)		

1. Computer and network security - Dr. Ramesh Babu Battula (CSE)
2. Network security - Dr. Ramesh Babu Battula (CSE)
3. Information system security - Dr. Ramesh Babu Battula (CSE)
4. Computer networks – Dr. Dinesh Kumar Tyagi (CSE)
5. Security analysis for protocols – Dr. Ramesh babu Battula (CSE)
6. Cyber forensics and assurance - Dr. E S Pilli (CSE)
7. Security in computing – Dr. Ramesh babu/Dr. Joyti Grover (CSE)
8. Security in Engineering – Dr. E. S Pilli/ Dr. Ramaesh Babu (CSE)
9. Advanced cryptography – Dr. Meenakshi Tripati/ Dr. Ramesh Babu Battula
10. Malware analysis – Prof. Vijay Laxmi (CSE)
11. Cloud security – Dr. E S Pilli (CSE)
12. Cryptography – Dr. Ramesh babu Battula/ Dr. Meenakshi Tripati (CSE)
13. Blockchain Technology – Dr. Ramehs Babu Battula/Dr. Dinesh Kumar Tyagi (CSE)
14. Network performance models – Dr. Ramesh Babu Battula (CSE)
15. Internet of things – Dr. Dinesh Kumar Tyagi (CSE)
16. Intrusion detection system – Dr. E S Pilli (CSE)
17. Optimal operation and control of Power systems – Dr. Rohit Bhakar, (EE)
18. Policy, Governance and Regulations – Dr. Satish Sarma (EE)
19. E-mobility – Dr. Rohit Bhakar, Dr. Arun Kumar Verma (EE)
20. Hardware Security – Dr. Amit Joshi, Dr. Perisamy (ECE)
21. Secure Quantum computing – Dr. ES Pilli, Dr. Ramesh Babu, (CSE), Dr. Kanupriya, Dr. Venkta Ratnam (PHY)
22. Smart city - Dr. Rohit Bhakar (EE), Dr. Ramehs Babu B (CSE), Dr. Sachin Sharma (EE), Dr.Sanyam (CE), Dr. Dhiraj Raj(CE), Dr. Amar patnayak (ME)

Present SFR of participating departments/center's

Department of Computer Science and Engineering
Department of Electrical Engineering (SFR=18.53 for session 2022-23, SFR=17.02 for last three years)
Department of Electronics and Communication Engineering
Centre for Energy and Environment
Department of Physics
Department of Mathematics
Department of Mechanical Engineering
Department of Civil Engineering

Ongoing research projects of team members in relevant area only.

S. No	Project Title	Type of the Project	Source	Total Amount (Lakhs)	Period	Status
1	Path and Spectrum Aware Routing for Multi-channel Multi-radio Cognitive Radio Wireless Mesh Networks (PI)	Research Sponsored	DST, India under TSDP	53.6 (extended to 60.3)	3 Years	Completed
2	Secure Android Framework for Analysis	Research Sponsored	DeITY, India	55.5	3 Years	Completed
3	ISEA	Research Sponsored	DeITY, India	96.9	3 Years	Completed
4	SWARD: Secure next-generation Wireless Access RaDio technology for Smart Cities in India (PI)	Research Sponsored	SERB, DST India	45.9	3 Years	On-going
6.	Child age progression to trace missing children's	Research	Meity, Delhi	64.09	3 Years	On-going
7.	Blockchin Forensics Framework	Research	TIH IIT Bhilai, India	304.5	3 Years	On-going

Relevant publications by team members in proposed area over past three years

1. Lakshminarayana Sadineni, Emmanuel S. Pilli, Ramesh Babu Battula, "ProvNet-IoT: Provenance based network layer forensics in Internet of Things," Forensic Science International: Digital Investigation, Volume 43, Supplement, 2022, 301441, ISSN 2666-2817, https://doi.org/10.1016/j.fsidi.2022.301441.
2. Avinash Reddy, Ramesh Babu Battula, Dinesh Gopalani, *"An efficient spectrum sensing over η–μ fading on sub 6 GHz bands: A real-time implementation on USRP RIO"*, *Wireless Networks,* Springer, 28, 2567–2577 (2022). https://doi.org/10.1007/ s11276-022-02975-1.
3. Avinash Reddy, Ramesh Babu Battula, Dinesh Gopalani, Chaitanya Kurra "*DISCERN: enhanced Dynamic noiSe varianCe based EneRgy seNsing for cognitive radio using usrp at Wi-Fi bands*" International Journal of Communication Systems, Wiley, 2020; 33:e4550, https://doi.org /10.1002/dac.4550.
4. Deepti Sharma, K Biradar, Santosh Vipparthi, Ramesh Babu Battula *"HYPE: CNN based Hybrid Precoding framework for 5G and beyond"*, The 35th IEEE International Conference on Advanced Information Networking and Applications (AINA-2022) University of Sydney, Sydney, Australia (IEEE Explore)
5. Arunima Sharma, Dhwani Agrawal, Nandini Roy and Sunita Bhichar, Ramesh Babu Battula *"POTENT - Decentralized Platoon Management with Heapify for Future Vehicular Networks"*, The 35th IEEE International Conference on Advanced Information Networking and Applications (AINA-2022) University of Sydney, Sydney, Australia, (IEEE Explore)
6. Avinash A, Arunima Sharma, Ramesh babu B, Dinesh Gopalani *"Location based detection mechanism for PUEA on CR enabled 5G-IoT network"*, IEEE International Conference on Advanced Networks and Telecommunications System, IDRBT, Hyderabad, India, 2021.
7. L. Sadineni, E. S. Pilli and R. B. Battula, "Ready-IoT: A Novel Forensic Readiness Model for Internet of Things," *2021 IEEE 7th World Forum on Internet of Things (WF-IoT)*, 2021, pp. 89-94, doi: 10.1109/WF-IoT51360.2021.9595902.
8. Arunima Sharma, Ramesh babu Battula, *"HONOUR:veHicle tO iNfrastructure cOmmUnication in smaRt cities of india" 43rd International Conference on Telecommunications and Signal Processing* (TSP 2020) Barcelona, Spain , 2020. , (IEEE Explore)
9. Arunima Sharma, Ramesh babu Battula, *"FOOTREST: Safety on Roads Through Intelligent Transportation System"* 34th International Conference on Information Networking (ICOIN 2020) Barcelona, Spain , 2020. , (IEEE Explore)
10. Chaitanya Kurra, Vijay Janyani, Ramesh Babu Battula *"'FANIC: FArthest Node Initialization Clustering Technique for Controller Placement Problem in Software Defined Networking"*, International Conference on Artificial Intelligence and Signal Processing (AISP'20), Amaravathi, AP, India (IEEE Explore
11. Satish Sharma and Deboleena Chakraborty, "Overview of Cyber Security in Modern Power System" , Int Conf on Advances in Systems, Control and Computing (AISCC) -2020 by :Springer at Jaipur / / 2020
12. Satish Sharma and Han La Poutré, "Distributed Cost Minimization Power Flow in Distribution Systems With DGs" , 2019 IEEE Power & Energy Society General Meeting (PESGM) by :IEEE at Atlanta, GA, USA / / 2019

Ongoing national/international collaborations in the relevant area

1. IIT Guwahti – Research related to the security and decentralized machine learning 2. IIT Tirupati –Internet of things (IOT) and precision sensing and its security issues related collaboration. 3. NIT Warangal – Security for Blockchian and IOT 4. NIT Karnataka – Network security 5. NIT Patna – Malware analysis and future malware activates 6. Vignan University – Software defined networks (SDN) and its security aspects 7. K L University – Next-generation networks security challenges 8. SRM University – Security for machine learning 9. GLA University – Security and privacy for autonomous cars 10. Purdue University – Cryptographic communication and its challenges 11. Maxplanck University – Internet security 12. University of Sydney - Security for operating system and cloud security aspects
Ongoing industry engagements in the relevant area
1. Petrasys Global, India - Critical Systems security and wireless networks security 2. Quick Heal, India – Computer security and data security for end-point systems
Existing infrastructure/facilities/IP available with the proposing team created through their previous grant/institutional support/research that will be useful for the proposed program/entity

The institute has the following computing and other facilities in Table-1 and Table-2.

Sr. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1	Workshop Facility	Yes
2	Water & Electricity	Yes
3	Laboratory Space/ Furniture	Yes
4	Power Generator	Yes
5	AC Room or AC	Yes
6	Telecommunication including e-mail & fax	Yes
7	Transportation	Yes
8	Administrative/ Secretarial support	Yes
9	Information facilities like Internet/Library	Yes
10	Computational facilities	Yes
11	Animal/Glass House	Not Required
12	Any other special facility being provided	Not Required

Table-1: Facilities are in the institute

People	Generic Name of Equipment	Model, Make & year of purchase	Remarks
Equipment's	High-end servers and	Lenovo 2021	--
Computing facilities	Computers-16	I5 processor, 16GB RAM, 1 TB Hard disk, 4GB Graphics card, HP, 2019	--
Next-generation network facilities	SDN and Cognitive radio and IOT setups	2021	--

Table-2: Computing Facilities are available in the department

III. REQUIREMENTS

Expected yearly research output from the entity over next 5 years	
Good number of research grants, PG, PhD student's guidance as well as training program conduction. We will organize national/international level conferences, FDPs, workshops, etc. Ultimate goal for CCS is to publish world class publications (i.e., A* or A conference papers and reputed journals). Primarily funding from center start-up, small grant and etc.	
Expected yearly consultancy/funding output from the program over next 5 years	
At least two/three years after only we will provide the expected revenue generation from the CCS.	
Expected other outcomes, including social outreach, from the entity over the next 5 years	
The center's performance will be assessed and renewed annually, performance assessment will be depends on the following THREE parameters. A. Research and Teaching productivity: New research collaboration within MNIT Jaipur, new research funding or grants from national/international funding /granting agencies. Sustainability with respect to the cyber security research outcomes – research publications, funded research, Industry research funds, participation and sponsorship for conferences, and workshops. B. Research oriented education and outreach C. Local/global research collaborations and its strengths	
Does the entity plan to start any new UG/PG program over next five years: Yes/No	
Yes	
If answer to above question is yes, please give the plans/need with justification	
Will start after two/three years with required funding.	

Guidelines for filling the form:

1. Complete details are be provided in the space provided, expanding it as needed or as annexures.
2. All relevant cells for any category are to be filled.
3. The projections submitted through this form will also be used for evaluating the performance of the new program/department/Centre in subsequent years, atleast once after three years and five years.

Information required
Does the entity require separate/additional space: Yes/no
Yes
If answer to above question is yes, give breakup of space requirement with justification
To establish the center at least 2000 sq. ft., maintain the labs and required software's. To develop a national level research center on cyber security.
Does the program/entity require financial support from the Institute: Yes/no
No
If answer to above question is yes, give financial requirement with justification over next 5 years
NA
Does the program/entity require additional faculty/guest faculty/staff/technicians/infrastructure: Yes/No
No
If answer to above question is yes, please give specific (faculty/guest faculty/technician/staff) requirement with justification
NA
Central facilities required
yes

Additional teaching load created to float the proposed program	NA
Proposed student Intake of program	NA
Nature of program: Full time/ Part time/ Online/any other	NA
Is the program to be run under SFS mode (Yes/no)	NA
If answer to the above question is yes, proposed fee structure for the program	NA
Curriculum details (preferably through curriculum dev. workshop) in the relevant area	NA
Proposed admission Process: for example JEE/CCMT/own test...	NA

IV. PROJECTED OUTCOMES FOR FUTURE EVALUATION

Information required	Detailed Response
Expected placement for graduating students (names of at least 10 companies/organizations as potential recruiters)	NA
Expected revenue generation (IRG)	
At least two/three years after only we will provide the expected revenue generation from the CCS. Consultancy projects to solve cyber security attacks. Research funding form various organizations like DRDO, DST, Melty, etc. Self-sustainable training programs on cyber security.	
Target mean graduating student feedback score indicating achievement on all defined outcomes on scale 1 to 10	

Table 1: List of corresponding courses of old and new UG schemes having no difference in credits

S. No.	Course Category	Course Type	Course Code (Old)	Course Title (Old)	Credits	L	T	P	Course Code (New)	Course Title (New)	Credits	L	T	P
1	Institute Core	Theory	CET101	Computer Aided Engineering Drawing	2	1	0	2	22CET101	Engineering Drawing and Sketching	2	1	1	1
2	Institute Core	Theory	CET102	Environmental Science & Ecology	2	2	0	0	22CET102	Environmental Science	2	2	0	0
3	Institute Core	Practical	CPP102	Programming Lab	1	0	0	2	22CSP102	Programming with Python Lab	1	0	0	2
4	Institute Core	Theory	CPT101	Computer Science & Programming	2	2	0	0	22CST101	Programming with Python	2	2	0	0
5	Institute Core	Practical	CYP102	Chemistry Lab	1	0	0	2	22CYP102	Engineering Chemistry Lab	1	0	0	2
6	Institute Core	Practical	ECP102	Electronics Engineering Lab	1	0	0	2	22ECP101	Electronics Engineering Lab	1	0	0	2
7	Institute Core	Practical	EEP102	Electrical Engineering Lab	1	0	0	2	22EEP102	Electrical Engineering Lab	1	0	0	2
8	Institute Core	Practical	HSP103	Language Laboratory	1	0	0	2	22HSP104	Communication Skills lab (Basic)	1	0	0	2
9	Institute Core	Theory	HST101	Technical Communication	2	1	2	0	22HST102	English Communication Skills (Basic)	2	2	0	0
10	Institute Core	Theory	MAT101	Mathematics I	4	3	1	0	22MAT101	Mathematics I	4	3	1	0
11	Institute Core	Theory	MAT102	Mathematics II	4	3	1	0	22MAT102	Mathematics II	4	3	1	0
12	Institute Core	Practical	MEP102	Workshop Practice	1	0	0	2	22MEP102	Product Realization through Manufacturing	1	0	0	2
13	Institute Core	Practical	PHP102	Physics Lab	1	0	0	2	22PHP104	Modern Physics Lab	1	0	0	2
14	Program Core	Theory	CHT201	Chemical Process Calculation	4	3	1	0	22CHT103	Chemical Process Calculation	4	3	1	0

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Annexure-I

Table 2: List of corresponding courses of old and new UG schemes having difference of 1 credit (Credits of course of new scheme is 1 credit less than the corresponding course of old scheme)

S. No.	Course Category	Course Type	Course Code (Old)	Course Title (Old)	Credits	L	T	P	Course Code (New)	Course Title (New)	Credits	L	T	P
1	Institute Core	Theory	CYT101	Chemistry	4	3	1	0	22CYT101	Engineering Chemistry	3	2	1	0
2	Institute Core	Theory	HST102	Basic Economics	3	2	1	0	22HST101	Basic Economics	2	2	0	0
3	Institute Core	Theory	PHT101	Physics	4	3	1	0	22PHT102	Modern Physics	3	2	1	0

Table 3: List of corresponding courses of old and new UG schemes having difference of more than 1 credit (Credits of course of new scheme is 2 or more credits less than the corresponding course of old scheme)

S. No.	Course Category	Course Type	Course Code (Old)	Course Title (Old)	Credits	L	T	P	Course Code (New)	Course Title (New)	Credits	L	T	P
1	Institute Core	Theory	MET101	Basic Mechanical Engineering	4	3	1	0	22MET101	Introduction to Mechanical Systems	2	2	0	0
2	Institute Core	Theory	EET101	Basic Electrical Engineering	4	3	1	0	22EET101	Basic Electrical and Electronics Engg.	3	3	0	0
3	Institute Core	Theory	ECT101	Basic Electronics Engineering	4	3	1	0						

मालवीय राष्ट्रीय प्रौद्योगिकी संस्थान जयपुर
MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR
[An Institute of National Importance under Ministry of Education, Govt. of India]
Jawahar Lal Nehru Marg, Jaipur – 302 017 [Rajasthan, INDIA]

DEPARTMENT OF MANAGEMENT STUDIES
प्रबंधन अध्ययन विभाग

PROPOSAL FOR EXECUTIVE MBA (E-MBA) PROGRAM

1. DEPARTMENT OF MANAGEMENT STUDIES, MNIT JAIPUR

The Department of Management Studies was established in 1996 as a Centre of Management Studies and Industrial Collaboration under the self-finance scheme. It was upgraded to the status of a full-fledged academic department in 2004. Since its inception, DMS has played a seminal role in the growth of the corporate sector and management education in India. Its alums occupy high places in the echelons of the corporate world. DMS grooms future business leaders by following a judicious blend of theory and practice, using highly innovative teaching pedagogy with a curriculum that resonates with the current industry trends.

The Department has a rich pool of faculty with years of interdisciplinary research, teaching, and administrative experience. The faculty members at the DMS are equally competent in delivering quality training and learning experience and in research and consultancy. The faculty members are continually involved in furthering learning in their areas of expertise, keeping themselves abreast of the latest development, and then transferring it to the budding managers enrolled in various programs at the DMS.

DMS VISION

To create a centre for imparting managerial education of international standards and conduct world-class research at the cutting edge of technology to meet the current and future challenges of technological development

DMS MISSION

To create techno-managerial manpower for meeting the current and future demands of industry; To recognize education and research in close interaction with industry with emphasis on the development of leadership qualities in the young men and women entering the portals of the Institute with sensitivity to social development and eye for opportunities for growth in the international perspective

2.0 ABOUT THE EXECUTIVE MBA (E-MBA) PROGRAM

There is an increasing need for quality management education among working professionals in the context of dynamic business scenarios and increasing reliance upon technology and data in the management of businesses. DMS proposes to move beyond a regular MBA program and

proposes to offer an Executive MBA (E-MBA) program that targets working executives. These working executives, though equipped with rich business insights and knowledge of the business process they are working on, can benefit immensely by developing a more comprehensive understanding of the overall business, management, industry, and economy. This can equip them much better in handling organizational challenges and furthering their respective careers. The E-MBA program can help them to:

- Enhance their management skills
- Develop skill sets to sail through the uncertainties and challenges of a global business environment
- Upgrade their managerial and analytical skills
- Fast-track their career
- Overall development of their professional and personal lives

2.1 Objectives of the E-MBA program

DMS, MNIT Jaipur proposes to launch an E-MBA program to respond to the needs of this segment of the modern-day workforce that lacks a formal management education. It aims to develop managerial professionals who can meet emerging and unforeseen challenges of modern-day business. The specific objectives of the proposed E-MBA program are:

- To create an appreciation for a comprehensive understanding of business processes and organizations
- To create an appreciation for the impact of business processes within and beyond organizations
- To deepen the understanding of business dynamics in a continuously evolving and challenging global context
- To develop the skills needed to assume leadership roles successfully
- To create digital dexterity to use emerging technologies and make effective business decisions

2.2 Program duration

The proposed E-MBA program's minimum duration is four semesters, spread over two years. The maximum duration of the program is proposed as three years. This program duration is similar to the two-year full-time regular MBA program currently offered by the DMS.

2.3 Program pedagogy

The E-MBA program is being proposed in a blended learning format. The program's courses will be offered online in collaboration with the newly established Continuing and Digital Learning Centre, MNIT Jaipur. There will also be provisions for a short-term on-campus immersion for the registered students every semester.

The blended learning mode of the program offers greater flexibility to working executives looking to enhance their skill sets. Often, working professionals have less time to devote to attending regular offline classes to attain higher education. The hybrid online/offline model, with virtual classes in a distance learning mode blended with in-class interactions during on-campus

commence in July every year and the EVEN Semesters (Semester 2 & 4) will usually commence in January every year.

- The students will be exposed to the core courses only in the first year (Semester 1 and 2) of the program. The students will register for a total of 6 core courses per semester in Semester 1 and Semester 2. These courses will serve as the foundations for developing a comprehensive understanding of the business processes, organization, structures, industry, and economy at large, cutting across the silos of specific functional areas.

During the second year (Semesters 3 & 4) of the E-MBA program, the students will be required to choose three electives per semester from a bouquet of elective courses offered by the Department. These electives will focus on developing advanced skills related to specific aspects/functional areas of business and management.

In addition to the elective courses in Semesters 3 & 4, the students will also have to register for two core courses per semester. These core courses will focus on an advanced understanding of the overall business and management. One of these core courses in Semester 4 may be based on a guided research project to be undertaken by the student in supervision of a pre-assigned mentor.

The term-wise course structure as proposed is:

		Year – I		Year - II		
		Semester 1	**Semester 2**	**Semester 3**	**Semester 4**	**Total**
Course	**Core**	6 courses (3 credits each)	6 courses (3 credits each)	2 courses (3 credits each)	2 courses (3 credits each)	16 (48 credits)
	Elective	-	-	3 courses (3 credits each)	3 courses (3 credits each)	6 (18 credits)
Total		12 courses (36 credits)		10 courses (30 credits)		22 courses (66 credits)

Tentative list of core courses:

Semester 1
Economics for Managers
Organizational Behavior & Managing Transitions
Marketing Management
Financial Reporting and Analysis
Quantitative Methods
Management Communication

Semester 2
Human Resource Management
Operations Management
Corporate Finance
Strategic Management
Information Systems for Managers
Statistical Decision Making

Semester 3
Business Service Management
Entrepreneurship and New Venture Planning
Elective 3.1
Elective 3.2
Elective 3.3

Semester 4
Ethics, Governance & Legal Aspects of Business
Research Project
Elective 4.1
Elective 4.2
Elective 4.3

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immersion, will provide greater flexibility to the working professionals while not compromising on the benefits of face-to-face interactions with the faculty and fellow participants.

2.4 Program Instructors/ Resource persons

The courses in the E-MBA program will be taught by a mix of in-house faculty members of the DMS and external experts from the subject domain. The external experts will be invited from the various departments of MNIT Jaipur, prominent academicians serving (or have served) in institutes of national and international repute and industry experts. A course can also be jointly offered by more than one instructor/ expert (preferably not more than two).

2.5 Admission/Selection to the E-MBA program

Admission/selection to the MBA program will be conducted once a year before the commencement of the academic year of the Institute. The detailed selection process for an academic year will be specified along with the release of the Admission Notification for the program. The selection for admission to the program will be based on weighted criteria and may include the following:

- Academic background and performance
- Professional experience and nature of experience
- Statement of purpose
- Performance in Entrance Test and/ or Personal interviews
- Professional Recommendation(s)

2.6 Minimum eligibility for admission to the E-MBA program

The applicant seeing admission to the E-MBA program:

- Must have completed a bachelor's degree with at least 60% or 6.5 CGPA aggregate or equivalent from a recognized university with a relaxation for SC/ST implying a minimum of 6.0 on the 10-point scale (55% marks, only where CGPA is not awarded).

Additionally, the candidate must

- be currently in employment,
- have at least two years of full-time work experience, out of which at least one (01) year should be with the current employer.

2.7 E-MBA Program Scheme

The detailed course scheme for the E-MBA program will be finalized after a Curriculum Development Workshop involving experts from academia and industry, in addition to the DFB members of the DMS.

However, a broad framework is being proposed as follows:

- The proposed EMBA will be normally be of four semesters spread over two academic years.
- The maximum duration to complete the program is six semesters/ three years.
- The specific dates of the course registration and other significant events will be as per the Academic Calendar issued by the Institute. The ODD Semesters (Semesters 1 & 3) will usually

800

A tentative list of proposed electives is as attached as below for reference. This list of electives is already part of the approved scheme (w.e.f. from AY 2019-20) for the two-year full time MBA program offered by the DMS.

Tentative list of proposed electives:

MARKETING
Consumer Behavior
Integrated Marketing Communications
Services Marketing
Managing Customer Relationships
Brand Management
Sales & Distribution Management
Marketing Analytics
International Marketing
Digital Marketing
Rural Marketing
B2B Marketing
Pricing Strategy
Marketing of Hi-Technology Products
Managing Product Portfolios

FINANCE & ACCOUNTING
Financial Markets & Systems
Investment Management
Money & Banking
Project & Infrastructure Finance
Corporate Restructuring
International Finance
Behavioral Finance
Financial Modelling in Excel
Future, Options & Risk Management
Fixed Income Securities
Management Control Systems
Investment Banking
Financial Analytics
Financial Statement Analysis

HUMAN RESOURCES
Organizational Change & Development
Strategic Human Resource Management
Performance & Compensation Management
HR Strategic Staffing
Managing High-Performance Teams
Learning & Development
Industrial Relations & Labour Laws
Competency Mapping & Assessment
International HRM
HR Analytics
Psychological Testing
Career Development & Succession Planning
Managing Social & Human Capital

OPERATIONS
Advanced Operations Research
Business Forecasting
Constraints Management & Industry Applications
Contemporary Project Management
Operations Strategy for Competitive Advantage
Service Operations Management
Distribution & Logistics Management
Game Theory for Business Strategy
Purchasing and Sourcing Management
Managing Supply Chain Risk
Business Process Modelling
Supply Chain Analytics & Optimization
Lean Six Sigma

BUSINESS ANALYTICS
Data Structure & Quality
Multivariate Data Analysis
Econometrics & Time Series Analysis
Business Analytics & Intelligence
Applications of Machine Learning
Managing Enterprise Data
Decision Support Systems
Strategic Information Systems
Introduction to Big Data & Cloud Computing
Marketing Analytics
Financial Analytics
HR Analytics
Supply Chain Analytics & Optimization

GENERAL MANAGEMENT & STRATEGY
Entrepreneurship Development
Creative Problem Solving
Innovation and Design Thinking
Team Building and Leadership
Negotiation Skills
Managing Across Cultures
Managing Creativity & Innovation
Technology Management
IT Project Management
Information Security & Risk Management
Technical Writing
e-Business & e-Governance

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Annexure-K

पृष्ठ संख्या
Page No.

मालवीय राष्ट्रीय प्रौद्योगिकी संस्थान जयपुर
MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

पंजिका संख्या/FILE NO. .....

कार्यालय टिप्पणी
Note Sheet

Date: 01 / 11 / 2022

The department of CSE completed the B.Tech (CSE) scheme as per the academic section guidelines and submitted it. After that, the academic section requested to split the course and lab components of problem-solving with C. In this regard, the first semester revised scheme is submitted for your kind perusal.

B. Ramesh Babu 01/11/2022
(Ramesh Babu B)
DUGC CSE

(Head, CSE)

CP/DAA/136
01/11/2022
ADUG

It is a usual practice to keep theory courses (having only lecture or lecture and tutorial components) seperate from practical courses (having laboratory courses only).

Same practice has been followed in the new UG scheme also (which has been provisionally approved by the Senate). The Scheme and Syllabus for I year UG has been approved by the Senate.

The Dept. of Computer Science & Engg. had proposed a course having both the theory and practical components. The same was pointed out by the Academic Section and now the department has split the proposed course (approved by Senate) into

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P.T.O.

Lecture and Practical courses (as given and highlighted in Annexure 'A').

Submitted for kind perusal.

[signature] 1/11/22

→ Dean, Academic

Since there is no change in the contact hours and credits, it is the matter of splitting a course of 2-0-2 into 2-0-0 and 0-0-2 scheme, the matter is recommended for approval. The same will be put-up for ratification in the next Senate meeting, if approved.

[signature] 02/11/22

- Chairman, Senate

1375
03/11/22

[signature] 03/11/22

Dean, Academic

[signature] 03/11/22

— ADG.

To be placed before Senate for reporting and ratification.

[signature] 11/11/22

→ DR.

Annexure 'A'

UG(CSE) Scheme

Department of Computer Science and Engineering

First Semester					
S. No	Code	Subject	L-T-P	Credit	Type
		Programming with Python	*2-0-0*	*2*	*IC*
		Programming with Python lab	*0-0-2*	*1*	*IC*
		Other Institute Core Subjects		*15*	*IC*
	CST1xx	Problem Solving using C	2-0-0	2	DC
	CST1xx	Discrete Mathematics	3-0-0	3	DC
	CSP1xx	Problem Solving using C Lab	0-0-2	1	DC
				24	

Second Semester					
S. No	Code	Subject	L-T-P	Credit	Type
		Programming with Python	*2-0-0*	*2*	*IC*
		Programming with Python lab	*0-0-2*	*1*	*IC*
		Other Institute Core Subjects		*15*	*IC*
	CST1xx	Data Structures	3-0-0	3	DC
	CST1xx	Logic System Design	2-0-0	2	DC
	CSP1xx	Data Structures Lab	0-0-2	1	DC
	CSP1xx	Logic System Design Lab	0-0-2	1	DC
				25	

(DUGC-CSE)

20/10/2022

(Dinesh Gopalani)
Head, CSE

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

MINUTES OF THE 37th MEETING OF THE SUGB HELD ON 06th OCTOBER 2022

The 37th Meeting of SUGB was held on 06th October 2022 at 4:30 PM in the NKN-1, Prabha Bhawan. The meeting was attended by the following members:

S.No.	Name	Department
1.	Prof. RajeevShringi	Chairman, SUGB
2.	Prof. Dilip Sharma	Chairman. SPGB
3.	Prof. Jyotirmay Mathur	Dean Academic
4.	Dr. Satish Kumar	Associate Dean (PG)
5.	Dr. Sumit Khandelwal	Associate Dean (UG)
6.	Prof. B. L Swami	Department of Civil Engineering (DUGC)
7.	Dr. Subbaramaiah V	Department of Chemical Engineering
8.	Dr. PriyankaSihag	Department of Management Studies
9.	Dr. Santosh Chaudhary	Department of Mathematics
10.	Dr. SrinivasaRaoNelamarri	Department of Physics
11.	Dr. Rina Surana	Department of Architecture and Planning
12.	Dr. Anil Swarnkar	Department of Electrical
13.	Dr. Ramesh BabuBattula	Department of Computer Science & Engineering
14.	Dr. Kamakshi Pandey	Material Research Centre
15.	Dr. Harlal Singh Mali	Department of Mechanical Engineering
16.	Dr. C. Periasamy	Department of Electronics & Communication Engg.
17.	Dr. SreekumarVadakke Madam	Department of Metallurgical & Materials Engineering
18.	Dr. Nidhi Sharma	Department of Humanities and Social Science
19.	Dr. Suman Rathore	Dy. Registrar (Academic) Special Invitee
20.	MS. Sukriti Bohra (2019UEC1002)	Student Nominee

Following members couldn't attend the meeting:

S. No.	Name	Department
1.	Prof. Ravindra Nagar	Ex-Chairman SUGB
2.	Dr. Naveen Choudhary	Professor and Head, CSE, CTAE Udaipur (TEQIP Nominee)
3.	Dr. Nivedita Kaul	Nominee, Chairperson Senate
4.	Dr. Parul Mathuria	Centre for Energy & Environment
5.	Dr. Abbas Raja Naziruddin	Department of Chemistry
6.	Aryan Sharma (2020UAR1005)	Student Nominee

The following agenda items were discussed and the recommendations are as follows:

Item No. 37-1.0	**To confirm the minutes of the 36th meeting of the SUGB held on 22nd September2022.** The 36th SUGB meeting was held on 22nd September 2022.Draft minutes of the meeting were circulated to all the SUGB members and no comments were received. The minutes were placed in 47th Senate meeting as reporting items. The SUGB confirmed the minutes of 36th meeting of SUGB.
Item No. 37-2.0	**Items for Consideration.**
Item No. 37-2.1	**To consider course registration of students for even semester 2021-22** A number of cases have been forwarded by the Convener, DUGC of various departments in which the students have not done course registration for even semester 2021-22. The SUGB deliberated upon the issue and observed that it is the duty of respective programme advisors to check and approve the course registration of students. All the cases of pending course registration shall be taken up by the Program Advisor/DUGC and efforts shall be made to complete the registration as per the Academic Calendar. It was informed to the SUGB that in few cases despite not completing course registration (which would mean, name of student not appearing in the list through ERP), the course coordinators have completed the evaluation of the students for both MTE & ETE and grade has also been awarded to them. The grade(s) have been communicated to the Academic Section through email/hard copy, as the name of the students did not appear in the registered students list due to incomplete registration. The SUGB requested the DUGC Conveners to ensure that only registered students are allowed to appear in the examinations and in no case end term exam should be taken for any other student without explicit approval of ODA. After deliberations, the SUGB decided that those students for whom course registration for 2021-22 has been pending, may be allowed to complete their course registration after making payment of a penalty of Rs. 10,000/-. Considering this to be a one-time unusual circumstance, SUGB decided that the registration shall be completed by October 16, 2022.Additionally, DUGC will issue a warning to the students completing registration within the announced time-frame.
Item No. 37-2.2	**To consider late registration of students for odd semester 2022-23** The last date of registration for III/V/VII semester B.Tech./B.Arch. have expired long back. Many students have requested for allowing them to complete registration as late as last week.

	The SUGB decided that similar to item no. 37-2.1, the students will be required to pay a penalty of Rs. 10,000/- to complete their registration. Considering this to be a one-time unusual circumstance, SUGB decided that the registration shall be completed by October 16, 2022.
Item No. 37-2.3	**To consider change of grades already submitted on ERP by the course coordinators** A number of cases of grade revision have been recommended by various DUGCs on various grounds after the time limit for modification at the level of Dean-Academics. The SUGB deliberated the item and reemphasised that the course coordinators should take extreme care in calculating as well as uploading grades on the ERP. The Course coordinator shall lock the grades only after checking these thoroughly, especially matching the names and IDs on ERP. SUGB further emphasises that **revision of grades shall be avoided as far as possible.** The Grade Moderation Committee shall check and verify the correctness of all the grades under consideration, especially unusually high or low grade of any particular student, which might be due to some omission/inadvertent mistake. However, only if due to any pressing reason, there is a need to revise grades then following process shall be adopted and relevant documentation shall be completed and forwarded to the Academic Sectionfor further processing of the matter as per the rules: A. A written (paper or email) request shall be submitted by the student/course instructor to the course coordinator for grade revision. The request for revision of grades shall be processed as per the deadlines approved by the Senate. B. A note shall be submitted by the course coordinator to the DUGC, clearly mentioning the reason if there is a need for revision of grades. C. The course coordinator shall provide the award list for both cases i.e. the initial award list as well as the revised award list of the student (with component-wise breakup pre and post revision). If number of grade revision cases are more than 5 in a single course, than the award list for the entire class shall be submitted. D. The cut off for various grades shall also be submitted by the course coordinator. E. The course coordinator shall also submit all the relevant answer sheets/quiz papers/assignment submissions of concerned student(s) to the DUGC. F. The DUGC shall check all documents to satisfy itself that a case for grade revision is justified. G. DUGC shall submit their detailed recommendations in form of minutes of meeting to the Academic Section. The DUGC shall also forward all the documents mentioned above to the Academic Section. The Academic Section will present the case to the Competent Authority for approval of grade revision.

<table>
<tr><td></td><td>SUGB decided that all the pending requests for revision of grades be processed through the above mentioned guidelines for documentation.

The SUGB also decided that all the answer sheets of EET 101 (for II semester 2021-22) must be kept safe for one year more than the normal duration.</td></tr>
<tr><td>Item No. 37-2.4</td><td>To consider the list of the students eligible for award of degree in UG programmes in the 16th Annual Convocation-2022 in addition of earlier list of 717 students.

In addition of total number of 717 students eligible for award of degree in UG programmes following, 04 students are also eligible for award of degree in the 16th Annual Convocation-2022, placed at Annexure –'A'

<table>
<tr><th>S. No.</th><th>Branch</th><th>Degree to be awarded</th></tr>
<tr><td>1.</td><td>Civil Engineering</td><td>01</td></tr>
<tr><td>2.</td><td>Chemical Engineering</td><td>01</td></tr>
<tr><td>3.</td><td>Mechanical Engineering</td><td>02</td></tr>
<tr><td></td><td>Total</td><td>04</td></tr>
</table>
The SUGB deliberated upon the issue and it was decided to approve the list of above 4 students(in addition to total number of 717 eligible students approved earlier in 36th SUGB meeting)for award of degree in UG programmes during the 16th Annual Convocation-2022. It further authorised SUGB Chairman to recommend cases of students who complete requirements for award of degree, if no SUGB meeting takes place after this meeting and the convocation.</td></tr>
<tr><td>Item No. 37-3.0</td><td>Reporting Items</td></tr>
<tr><td>Item No. 37-4.0</td><td>Any other item with permission of chair.</td></tr>
<tr><td>Item No. 37-4.1</td><td>To consider the case of special examination of Mr. Saurabh Gupta (2017UCP1776).

Mr. Saurabh Gupta has registered for his 11th semester. He was allowed to register for courses as per the recommendation of the DUGC. It was informed that Mr. Saurabh Gupta was not able to appear in an examination due to clash in the timing of the examination of two courses for which he has registered.

The SUGB deliberated upon the issue and decided that Mr. Saurabh Gupta may be allowed an extra open elective course in self study mode, in his XI semester along with his regular courses.DUGC should appoint a course coordinator for the course. The student shall keep interacting with the course coordinator and shall submit all the assignments related to the course. The DUGC convener was requested to hold special examinations (similar to the one on medical grounds) for the student.</td></tr>
</table>

Item No. 37-4.2	**To consider the matter regarding conduct of mid-term and end-term examinations** The SUGB was informed that a meeting of the Dean, Academics with Heads of the Departments was conducted in April 2022, in which issues related to conduct ofexamination were discussed. It was unanimously decided to adopt few measures to improve the situation and the decisions in the meeting were circulated to all the HoDs. On the basis of decisions taken in this meeting, the Academic Section made some interventions and started preparing seating plan for the examinations as well as assigning invigilation duties. The entire process of conduct of examination, except the interventions agreed by the HoDs in the meeting mentioned above, was kept same as was the earlier practice. Few faculty members have raised the question of validity of these interventions, mentioning that the conduct of examinations is the duty of the DUGC of the respective departments. The SUGB deliberated on the matter and all the DUGC Conveners were unanimous in expressing that the conduct of examination ranging from fixing the date of examination, preparing question papers, getting these distributed in the examination hall, collection of filled answer sheets, evaluation of the answer sheets, showing marked answer sheets, preparing results and awarding grades etc. is still entrusted with the course coordinator/DUGC/Department only and interventions by the Academic Section are actually a value addition to the conduct of examination, which shall be continued. After discussions, in order to have involvement of DUGCs of departments even in these two interventions, the SUGB decided to constitute a Supervisory Committee of following members for advising the Academic Sectionon different matters related to the conduct of examination.The members of the Supervisory Committee will be rotated on yearly basis to get representation of all departments turn by turn. It was also decided that the Coordinator, Institute Time Table shall also be a part of the committee to coordinate various activities related to examination. 1. Dr. Rina Surana — DUGC Convener, Dept. of Architecture 2. Dr. Anil Swarnkar — DUGC Convener, Dept. of Electrical Engg. 3. Dr. Priyanka Sihag — DUGC Convener, Dept. of Management Studies 4. Dr. Dipaloy Dutta — DUGC Convener, Dept. of Chemical Engg.

Convener SUGB

Chairman SUGB

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

MINUTES OF 38th MEETING OF SUGB HELD ON 17th JANUARY 2023

38th Meeting of SUGB was held on 17th January 2023 at 4:00 PM in the Old Senate Hall, Prabha Bhawan.

The meeting was attended by the following members:

S.No.	Name	Department
1.	Prof. Rajeev Shringi	Chairman, SUGB
2.	Prof. Jyotirmay Mathur	Dean Academic
3.	Dr. Satish Kumar	Associate Dean (PG)
4.	Dr. Sumit Khandelwal	Associate Dean (UG)
5.	Dr. NiveditaKaul	Nominee, Chairperson Senate
6.	Prof. B. L Swami	Department of Civil Engineering (DUGC)
7.	Dr. DipalayDatta	Department of Chemical Engineering
8.	Dr. PriyankaSihag	Department of Management Studies
9.	Dr. Santosh Chaudhary	Department of Mathematics
10.	Dr. Srinivasa Rao Nelamarri	Department of Physics
11.	Dr. Anil Swarnkar	Department of Electrical
12.	Dr. Ramesh BabuBattula	Department of Computer Science & Engineering
13.	Dr. Harlal Singh Mali	Department of Mechanical Engineering
14.	Dr. Satyasai Jagannath Nanda	Department of Electronics & Communication Engg.
15.	Dr. SreekumarVadakke Madam	Department of Metallurgical & Materials Engineering
16.	Dr. Abbas Raja Naziruddin	Department of Chemistry
17.	Dr. ParulMathuria	Centre for Energy & Environment
18.	Dr. Suman Rathore	Dy. Registrar (Academic) Special Invitee
19.	MS. SukritiBohra (2019UEC1002)	Student Nominee

Following members couldn't attend the meeting:

S. No.	Name	Department
1.	Prof. Dilip Sharma	Chairman. SPGB
2.	Prof. Ravindra Nagar	Ex-Chairman SUGB
3.	Dr. Naveen Choudhary	Professor and Head, CSE, CTAE Udaipur (TEQIP Nominee)
4.	Dr. Nidhi Sharma	Department of Humanities and Social Science
5.	Dr. KamakshiPandey	Material Research Centre
6.	Dr. RinaSurana	Department of Architecture and Planning
7.	Aryan Sharma (2020UAR1005)	Student Nominee

RShringi

Item No. 38-1.0	**To confirm the minutes of 37th meeting of SUGB held on 6th October 2022.** The SUGB confirmed the minutes of 37th meeting of SUGB held on 6th October 2022.
Item No. 38-2.0	**Items for Consideration.**
Item No. 38-2.1	**To consider the equivalence of Old Scheme courses with New Scheme courses of B. Tech.** The SUGB after detailed deliberation considered the equivalence of courses of Old Scheme for UG programs with courses of New Scheme for UG programs and decided that: 1. If the credits of corresponding course of old and new UG schemes is same then the student may be allowed to register for the courses of the old scheme, but he will attend classes/examination of the courses of the new scheme and the grade earned in the courses of new scheme may be counted against the courses of old scheme. 2. If the credits of courses of new UG scheme has been reduced by one credit with respect to the corresponding course of old scheme then the student may be allowed to register for the courses of the old scheme, but he will attend classes/examination of the courses of the new scheme. The course coordinator will either give the registered students extra reading material (for self study) along with extra assignments or the student may be asked to do some mini project. The evaluation of extra work will be carried out separately and will be considered for final evaluation as well as award of grade. The grade earned in the courses of new scheme will be counted against the courses of old scheme. 3. If the courses of new UG scheme have two or more credits less than the corresponding courses of old scheme then the student may be allowed to register for the courses of the old scheme, but he will attend classes/examination of the courses of the new scheme. In addition the students will be required to complete either a mini project or complete a MOOC course as per the recommendation of the DUGC of the department offering the course. The evaluation of mini project will be carried out separately. Evaluation of mini project or grade/score earned by the student in MOOC course will be considered for final evaluation as well as award of grade. The grade earned in the courses of new scheme will be counted against the courses of old scheme.
Item No. 38-2.2	**To consider the request of the DUGC, Dept. of Civil Engineering regarding grade moderation of grades of CEP 227 after submission of grades on ERP by the course coordinator.** The SUGB after detailed deliberation decided that the grades can only be moderated prior to declaration of result or within the stipulated period. Permission of Grade moderation of CEP227 after the declaration of result cannot be granted and the SUGB turned down the proposal.

Chandel

R Shringi

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Item No. 38-2.3	**To consider the Mercy request for waiver of minimum attendance requirement of Mr. Viral Achhwan (ID2021UAR1259).** After detailed deliberation, SUGB decided to recommend the Mercy request of the student for the approval of the Senate.
Item No. 38-2.4	**To consider the matter regarding pending documents of UG students admitted in Academic year 2020-21, 2021-22 and 2022-23.** SUGB decided that a notice be sent to all the UG students to submit their pending documents up to 15-02-2023, otherwise they will not allowed to appear in the mid-term/End term examination to be conducted in the month of February 2023. DUGC convener of the concerned Departments were also requested to direct the students to deposit their pending documents at the earliest.
Item No. 38-2.5	**To consider recommendation of DUGC of Civil Engineering department regarding Mercy appeal of Gaurav Jain (2019UCE1044).** As per the internship guidelines for UG students, a student willing to proceed on semester long internship in the 8th semester, must complete all his course work up to 7th semester without any backlogs. A student Gaurav Jain (2019UCE1044) has been offered an internship at Flipkart (Axxela Research & Analytics Private Limited) from 3rd January 2023. However, the student has one back paper (CET325-Design of Masonry Structures) at the end of his 7th semester. Therefore, the student has not been permitted to go for the internship. Gaurav Jain has submitted a mercy appeal through program advisor to grant waiver from the condition of 'NO ACTIVE BACKLOG" to proceed for internship in 8th semester. After detailed discussions the SUGB did not recommend the mercy appeal.
Item No. 38-2.6	**To discuss the status of implementation of new UG scheme.** SUGB discussed the status of implementation of New UG Scheme and Syllabus of 2nd year to final year B. Tech. and B.Arch. programs. The departments were requested to speed up the work of scheme preparation as well as they were requested to conduct the Curriculum Development Workshop soon. After detailed discussion it was decided that all the department offering UG programmes will organise a Curriculum Development Workshops by 20/03/2023 and will submit the complete scheme with syllabus before 31/03/2023 to the Academic section for further processing and final approval of the Senate.
Item No. 38-2.7	**To consider late registration of students for odd semester 2022-23.** The last date of registration for III/V/VII semester B. Tech./B.Arch. was expired long back. Many students have requested to allow them to complete Course registration.

RShrivastava

	The SUGB decided to consider the late registration of students for odd semester 2022-23by paying a penalty of Rs.10,000/- to complete their course registration.
Item No. 38-3.0	**Reporting Items**
Item No. 38-3.1	**To report the list of UG students permitted for internship work during Academic Year 2022-2023.** Noted.
Item No. 38-4.0	**Any other item with permission of chair.**
Item No. 38-4.1	**To consider the list of the students eligible for award of degree in UG programmes in the 16th Annual Convocation-2022.** Noted and recommended to put before Senate.

Convener SUGB

Chairman SUGB

Annexure-M

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

MINUTES OF THE 54th MEETING OF THE SPGB TO BE HELD ON 11th JANUARY 2023

The 54th meeting of the SPGB was held on 11th January 2023 at 04:00 PM in the Old Senate Hall Prabha Bhawan.

The meeting was attended by the following members:

S.No.	Name	Department
1.	Prof. Dilip Sharma	Chairman, SPGB
2.	Prof. Satish Kumar	Associate Dean (PG & PhD) & Convenor SPGB
3.	Dr. Sumit Khandelwal	Associate Dean (UG)
4.	Prof. Raj Kumar Vyas	Nominee Chairperson Senate
5.	Prof. Suja George	Associate Dean, (MERITE)
6.	Dr. Praveen Kumar Agrawal	Department of Electrical Engineering
7.	Dr. Divesh Kumar	Department of Management Studies
8.	Dr. Dipaloy Datta	Department of Chemical Engineering
9.	Dr. Krishna Kumar	Department of Metallurgical and Materials Engineering
10.	Dr. Vinay Agrawal	Department of Civil Engineering
11.	Dr. Vivekanand	Centre for Energy and Environment
12.	Dr. Nisha Verma	Department of Material Research Center
13.	Dr. Kavita Lalwani	Department of Physics
14.	Dr. Preeti Bhatt	Department of Humanities and Social Science
15.	Dr. Dinesh Kumar	Department of Mechanical Engineering
16.	Dr. Yogesh Kumar Meena	Department of Computer Science & Engineering
17.	Dr. Ravi Kumar Maddila	Department of Electronics & Communication Engineering
18.	Dr. Sumanta Kumar Meher	Department of Chemistry
19.	Dr. Suman Rathore	Deputy Registrar (Special Invitee)

Following members couldn't attend the meeting:

S.No.	Name
1.	Prof. Rajeev Shringi
2.	Prof. Rakesh Jain
3.	Prof. M. K. Shrimali
4.	Prof. Jyotirmay Mathur

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Item No. 54-1.0	**To confirm the minutes of 53rd meeting of the SPGB held on** 20th September, **2022:** SPGB confirmed the minutes of 53rd meeting of the SPGB held on 20th September, 2022.
Item No. 54-2.0	**Items for Consideration.**
Item No. 54-2.1	**To consider the list of the students eligible for award of degree in PG & Ph.D. programmes in the forthcoming 16th Convocation:** SPGB approved and recommended the list of eligible PG & Ph.D. students placed at **Annexure-B & C** to the Senate for approval for award the degree in 16th Convocation
Item No. 54-2.2	**To consider the guidelines & modalities for starting Integrated Master + Ph.D. Dual Degree (MPDD) program.** The DPGC suggested to circulate the guidelines and modalities to all faculty for comments, if any then the guidelines and modalities will be approved by circulations and recommended to the Senate.
Item No. 54-2.3	**To consider the Joint Supervision of Ph.D. student Mr. Sandeep Shukla (2020RME9599).** The request of joint supervision was placed in the DPGC meeting dated 27-07-2022. The DPGC rejected the request of joint supervision Dr. Rohit Mishra of Engineering College Ajmer as the Engineering College Ajmer as per previous guidelines for addition of joint supervisor. As per the new guidelines approved in 46th meeting of the Senate held on 17th August 2022 the DPGC now recommended for addition of Dr. Rohit Mishra of Engineering College Ajmer. It was also noted that the comprehensive examination of Mr. Sandeep Shukla (2020RME9599) has already been completed on 28-07-2022 and as per the PG RR addition of joint supervisor will not be encouraged normally after the comprehensive exam and state of the art seminar. The SPGB was of the opinion that due to non-availability of relevant rules before his comprehensive examination, he was not permitted for joint supervision. Therefore, as a special case the SPGB recommended to allow for addition of joint supervisor and may be placed in the Senate for approval.
Item No. 54-	**To consider relaxation in percentage of marks/CGPA for admission to Ph.D. programmes for person with disabilities.**

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2.4	As per PG rules & regulation of the Institute the SC/ST candidates are given relaxation in percentage of marks/CGPA in qualifying degree for admission to Ph.D. programmes of the Institute. The SPGB approved and recommended that the same relaxation may also be extended to persons with disabilities seeking admission in the institute in Ph.D. programmes as other IITs and NITs also offer relaxation in qualifying degree for admission to Ph.D. programme to persons with disabilities.
Item No. 54-2.5	**To consider the proposal for inclusion of the name of Department in PG degree.** The SPGB discussed the matter and approved and recommended the printing of name of department on PG degrees issued by the Institute.
Item No. 54-2.6	**To consider the admission of Mr. Puran Chand in Ph.D. programme as a part time candidate on the basis of B.Tech. Degree in the department of Computer Science and Engineering.** SPGB approved the admission of Mr. Puran Chand in Ph.D. programme as a part time candidate on the basis of B. Tech. degree in the department of Computer Science and Engineering.
Item No. 54-2.7	**To consider the proposal of Chemical Engineering Department to modify the eligibility criteria for the Ph.D. admission to Full-time scholar (with Institute scholarship).** The SPGB was of the opinion that the proposal may be referred to PG Review Committee constituted to review the PG Rules & Regulations.
Item No. 54-2.8	**To consider the proposal to start a 2-Year Online Executive MBA program by Department of Management Studies (DMS) in association with Continuing and Digital Education Centre (CDEC), MNIT Jaipur.** The SPGB approved the proposal in principle.
Item No. 54-2.9	**To consider the grades of online MOOC (NPTEL) course done by Ph.D. students.** The SPGB constituted a committee of the following members to frame the guidelines for inclusion of grades of MOOC (NPTEL) grade sheets issued by the Institute. (i) Prof. R. K. Vyas (ii) Associate Dean (PG) (iii) Associate Dean (UG)
Item	**To consider the list of Ph.D. students Absent without authorized leave for**

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No. 54-2.10	**termination from the program.** The SPGB approved the termination of enrolment of Ph.D. students from the Institute rolls due to absent without authorized leave.
Item No. 54-2.11	**To consider the list of Ph.D. students for termination of enrolment for scoring CGPA is less than 7.00 in Ph.D. program.** The SPGB approved the termination of enrolment of Ph.D. students from the Institute rolls due to scoring CPGA less than 7.00 in respective Ph.D. programme.
Item No. 54-2.12	**To consider the list of Ph.D. students who have not reported/registered for more than one semester.** The SPGB approved the termination of enrolment of Ph.D. students from the Institute rolls due to absent without authorized leave.
Item No. 54-2.13	**To consider the case of submission of Ph.D. thesis by Mr. Umardaraj (2013RME9065).** The SPGB suggested that the candidate may apply for mercy appeal.
Item No. 54-2.14	**To consider the list of PG students for termination of enrolment who scored CGPA less than 5.5 in academic year 2021-22 and 2022-23.** The SPGB approved the termination of enrolment of PG students from the Institute rolls due to scoring CPGA less than 5.5 in respective PG programme.
Item No. 54-2.15	**To consider the recommendation of DPGC of Department of Management Studies regarding mercy appeal for relaxation in CGPA requirement of semester promotion.** The SPGB recommended the mercy appeal for relaxation in CGPA requirement for semester promotion.
54-3.0	**Reporting Items**
Item No. 54-3.1	To report the list of Ph.D. students permitted for research work in other Institute. Noted.
Item No. 54-3.2	To report the list of Ph.D. students permitted for Semester Withdrawal. Noted.
Item No.	To report the list of Ph.D. students permitted for extension of comprehensive examination.

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54-3.3	Noted.
Item No. 54-3.4	To report the list of MNIT Faculty permitted to supervise Ph.D. students of other Institute. Noted.
Item No. 54-3.5	To report the names of joint supervisors of Ph.D. students added during their Ph.D. programme Noted.
Item No. 54-3.6	To report Ph.D. students permitted to convert their status from full time to part time. Noted.
Item No.54 -3.7	To report change of supervisor of Ph.D. students during their Ph.D. programme Noted.
Item No.54 -3.8	To report PG students permitted for internship in other Institute. Noted.
Item No.54 -3.9	To report the list of PG students permitted to convert their status from full time to part time. Noted.
Item No. 54-4.0	**Any other item with the permission of the Chair**
54-4.1	**To consider the recommendation of DPGCs of Department of Mechanical Engineering and Physics regarding mercy appeal for relaxation in CGPA requirement of semester promotion.** With reference to 'mercy policy and mechanism' for the purpose of continuation of semester promotion and award of UG, PG and PhD. degree. The following applications were received through respective programme advisors and DPGCs for mercy appeal for relaxation in CGPA requirement for the semester promotion. Justifications and recommendations of DPGC and SPGB is as follows:

S. No.	Name & ID	Justification, if any and recommendatio	Recommendation of DPGC	Justification of SPGB	Recommendation of SPGB

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			n of DPGC			
	1.	Mr. Vivekanand Prajapati (2021RME9079) Full Time CGPA 6.5	Due to health issues could not perform well in 1st semester of Ph.D. recommended on medical grounds	Recommended	Poor performance in examination.	Not recommended
	2.	Mr. Raja Babu (2022PPH5564) CPGA 5.2	Could not perform well in mid-term examination due to Dengue Fever may be recommended on medical grounds	Recommended	Poor performance in examination. And DPGC informed that after mercy appeal the students withdrew from the Institute rolls	Not recommended
	3.	Mr. Sachin Rolania (2022PPH5559) CPGA 5.0	Graduation in Hindi Medium not able to understand the course in English medium	Recommended	Poor performance in examination.	Not recommended
	4.	Ms. Megha Kumari (2022PEV5148)	Application for mercy chance is forwarded	Recommended	Poor performance in examination. The recommendation of DPGC is not supported with documents and justification for mercy appeal.	Not recommended

Chairman SPGB 31/01/2023

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

MINUTES OF THE 55th MEETING OF THE SPGB TO BE HELD ON 02 FEBRUARY, 2023

The 55th meeting of the SPGB was held on **02nd February** 2023 at 04:30 PM in the Old Senate Hall, Prabha Bhawan, MNIT Jaipur.

The meeting was attended by the following members:

S.No.	Name	Department
1.	Prof. Dilip Sharma	Chairman, SPGB
2.	Prof. Jyotirmay Mathur	Dean, Academics
3.	Dr. Sumit Khandelwal	Associate Dean (UG)
4.	Prof. Suja George	Associate Dean, (MERITE)
5.	Prof. Tarush Chandra	Department of Architecture and Planning
6.	Dr. Praveen Kumar Agrawal	Department of Electrical Engineering
7.	Dr. Divesh Kumar	Department of Management Studies
8.	Dr. Vijay Navaratna Nadakuduru	Department of Metallurgical and Materials Engineering
9.	Dr. Anoop I. Shirkol	Department of Civil Engineering
10.	Dr. Vivekanand	Centre for Energy and Environment
11.	Dr. Nisha Verma	Department of Material Research Centre
12.	Dr. Preeti Bhatt	Department of Humanities and Social Science
13.	Dr. Dinesh Kumar	Department of Mechanical engineering
14.	Dr. Yogesh Kumar Meena	Department of Computer Science & Engineering
15.	Dr. Sumanta Kumar Meher	Department of Chemistry
16.	Dr. Varun Jindal	Department of Mathematics
17.	Dr. Suman Rathore	Deputy Registrar (Special Invitee)

Following members could not attend the meeting:

S.No.	Name	Department
1.	Prof. Rajeev Shringi	Chairperson, SUGB
2.	Prof. Rakesh Jain	Immediate Past Chairperson, SPGB
3.	Prof. M.K. Shrimali	National Centre for Disaster Mitigation & Management
4.	Prof. Raj Kumar Vyas	Nominee Chairperson Senate
5.	Prof. Satish Kumar	Associate Dean (PG & PhD) & Convenor SPGB
6.	Dr. Ravi Kumar Maddila	Department of Electronics & Communication Engineering
7.	Dr. Kavita Lalwani	Department of Physics
8.	Dr. Virendra Kumar Saharan	Department of Chemical Engineering

Dilip Sharma

Item No. 55-1.0	**To confirm the minutes of 54th meeting of the SPGB held on 11th January 2023.** SPGB confirmed the minutes of 54th meeting of the SPGB with modifications in the language for justification regarding mercy candidates.
Item No. 55-2.0	**Items for Consideration.**
Item No. 55-2.1	**To consider the mercy request of Ph.D. student Mr. Sagar Mal Nitharwal (ID: 2019RCP9147) Department of Computer Science & Engineering** SPGB discussed the mercy appeal of Ph.D. student Mr. Sagar Mal Nitharwal (ID: 2019RCP9147) and recommended that since the discontinuity in work has been of significant duration and comprehensive exam has not taken place yet, the student may be allowed to re-register to the Ph.D. programme. The credits earned by the student for the course work completed by him may be counted towards the new registration, after approval of the competent authority.
Item No. 55-2.2	**To consider the mercy request of Ph.D. student Mr. Vivekanand Prajapati (ID: 2022RME9079) Department of Mechanical Engineering.** The matter was already discussed in the 54th Meeting of SPGB under item no. 54.4.1.. The agenda item was dropped.
Item No. 55-2.3	**To consider the mercy request of Ph.D. student Mr. Umardaraj (2013RME9065) to resume his registration in Ph.D. Programme and give extension-time to complete his remaining Ph.D. work. (Department of Mechanical Engineering)** SPGB discussed the mercy appeal of Ph.D. student Mr. Umardaraj (2013RME9065) and recommended recommended that since the discontinuity in work has been of significant duration and problem definition is almost 9 year old, and the supervisor himself has declared that it is going to take atleast one year, which indicates it may take even more than one year as well, the student may be allowed to re-register to the Ph.D. programme. The credits earned by the student for the course work completed by him may be counted towards the new registration, after approval of the competent authority.
Item No. 55-2.4	**To consider the mercy request of M.Tech Students, Mr. Mukul Chaudhary (2021 PCV5354), Mr. Hemant Khatri (2021PCV5359) Mr. Chetram Meena (2022PCV5304), Department of Centre for Energy and Environment.** SPGB after detailed deliberation recommended that Mr. Mukul Chaudhary (2021PCV5354) and Mr. Hemant Khatri (2021PCV5359) may be allowed to repeat the Dissertation I course again in the current semester and they will register and complete their Dissertation II course in the Odd Semester 2023-24. The mercy appeal of Mr. Chetram Meena (2022PCV 5304) has not been recommended by the SPGB due to very poor performance in the 1st semester (CGPA 3.17).

Dilip Sharma

Item No. 55-2.5	**To consider the mercy request of M.Tech Students Mr. Roop Singh Meena (2022PES 5280), and Mr. Anirban Chatterjee (2022PSM5255) of Department of Electrical Engineering.** The SPGB decided not to recommend the mercy appeals of M.Tech Students Mr. Roop Singh Meena (2022PES 5280) and Mr. Anirban Chatterjee (2022PSM5255) due to absence of sufficient ground for mercy.
Item No. 55-2.6	**To consider the mercy request of M.Tech student Mr. Vinod Kumar Meena (ID: 2020PCT5315) Department of Civil Engineering.** SPGB noted that the current requirement is a CGPA of 5.5 for the award of the PG degree. After detailed discussion, the SPGB recommended the mercy appeal of M.Tech. student Mr. Vinod Kumar Meena (ID: 2020PCT5315) for the award of degree with CGPA of 5.9 as has already been done in similar cases under old CGPA requirement for award of degree.
Item No. 55-2.7	**To consider the change of grade of M.Tech students Mr. Vishal Sharma (ID: 2020PCS5405) and Mr. Mithun (2020PCS5243) Department of Civil Engineering.** SPGB after detailed discussion recommended that the grades of the students for Dissertation II may be updated to IW (from the existing grades). SPGB also decided that the viva-voce examination of the students shall conducted afresh after the approval of fresh Oral Examination Committee(s) from the competent authority.
Item No. 55-2.8	**To consider the addition of external Joint Supervisor of Ph.D. student Mr. Budhi Prakash Panwar (ID: 2021RME9554)** In view of past experience of Prof. Sunil Pandey as retired Professor of IIT Delhi and the credentials of Prof. Pandey, SPGB recommended the addition of Prof. Sunil Pandey as an external Joint supervisor of Ph.D. student Mr. Budhi Prakash Panwar (ID: 2021RME9554).

Dilip Sharma

SPGB Chairman

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

Minutes of 30th Meeting of Academic Affairs Committee (AAC)

The 30th meeting of Academic Affairs Committee (AAC) was held on 11th October, 2022 at 04:00 PM in the Meeting Room No.1, Prabha Bhawan. Following members were present in the meeting:

1. Prof. Jyotirmay Mathur (Dean, Academic)
2. Prof Dilip Sharma (Chairman, SPGB)
3. Prof. Rajeev Shringi (Chairman, SUGB)
4. Dr. Sumit Khandelwal (Associate Dean UG)
5. Prof. Rakesh Jain, UG Project Coordinator Mechanical Engg. Dept., Special Invite
6. Dr. Harlal Mali, DUGC Convener, Mechanical Engg. Dept., Special Invite

Dr. Satish Kumar Associate Dean PG could not attend the meeting due to some prior engagement.

Item No. 30-1.0	**Items for Consideration.**
Item No. 30-1.1	**To consider the End Term Examination conducted by department(s) on Medical grounds after the due date :** The matter related to students Mr. Himanshu Yadav (2018UME1178) was presented before the committee by the DUGC Convener of Mechanical Engineering Department. Committee discussed the matter in detail and observed that the Department has not informed the Academic Section before conducting the End Term examination beyond the stipulated date. The AAC decided that an advisory may be issued to all the Departments that for any matter which is a violation of Academic Calendar, the department may take due permission from the competent authority. The Committee observed that in the present case Mr. Himanshu Yadav (2018UME1178) was absent in the Project examination and was awarded FP grade instead of IW grade. Later, after evaluation of his Project work he has been awarded letter grade. The AAC recommended that his earlier grade (FP) may be corrected to IW grade and later the letter grade may be considered after evaluation of his Project work.
Item No. 30-1.2	**To consider the case of Mr. Ganesh Dhote Harshal ID No2020UME1141** The matter of student Mr. Ganesh Dhote Harshal (2020UME1141) was presented before the committee by the DUGC Convener of Mechanical Engineering Department. He did not appeared in End Term Examination conducted in May 2022 as he was Covid Positive. Later he approach the Department and DUGC allowed him to appear in the Special End Term Examination. The DUGC has

	recommended for conversion of his grades from FA/FP to full letter grades. Committee discussed the matter in detail and directed the Convener DUGC Mechanical Engineering Department to submit complete time line with supporting documents related to the case for consideration of AAC.
Item No. 30-1.3	**To Consider the Academic Calendar for Odd and Even Semester of I year B.Tech/B.Arch.** The Committee approved and recommended the Academic Calendar for Odd and Even Semester of I year B.Tech/B.Arch. placed at Annexure –A.
Item No. 30-1.4	**To consider to reduce the number of pages of Mid Term and End Term Answer sheets issued to the students.** A survey was conducted to evaluate the need of reducing the number of pages of Mid Term and End Term Answer sheets. 62 faculty members participated in the survey. More than 75% of faculty members agreed that the Answer sheets pages may be reduced. 1/3 of faculty members agreed that the number of pages of End Term Answer sheets may be reduced to 12 or more and Mid Term Answer sheet may be reduced to 8 or more pages. The AAC decided to reduce the number of pages in phased manner. In first phased 08 pages may be reduced in End Term Answer sheets and 04 pages in Mid Term Answer sheets i.e. the End Term Answer sheets shall be of 40 pages and Mid Term Answer sheets shall be of 20 pages. The Committee also decided to issue separate 08 pages of Answer sheets for laboratory examinations.
Item No. 30-1.5	**To consider the case of non-reporting of the Ph.D. research scholars for invigilation duties/reserve duties in the Mid Term Examinations held in September/October 2022.** It was informed that large number of Ph.D. research scholars with Institute Assistantship did not reported for invigilation duty assigned to them in recently conducted Mid Term Examinations, which caused serious problem in conducting the examination. The list of such scholars is attached at Annexure-B. The AAC took this misconduct very seriously and recommended that half day assistantship of all such scholars may be deducted and this may be communicated to all the research scholars of the Institute. It was also decided to issue an advisory to all Ph.D. scholars that they are required to report on the scheduled date and time for their respective duties during the Mid Term and End Term examinations otherwise it will be presumed they are absent in the Institute and their assistantship will be deducted.

Item No. 30-1.6	**To consider the minor update in the Academic Calendar of III Semester 2022-23.** The Mid Term examination of III Semester students is between 17th October 2022 to 20th October 2022 and their last date of classes is on 09th December 2022. A Mid Term break (from 22nd October 2022 to 30th October 2022) has been announced for the students of V & VII Semester B.Tech./B.Arch. The Mid Term break for III Semester students was omitted in the Academic Calendar of III Semester due to oversight. The AAC approved and recommended to correct the omission in the III Semester Academic Calendar of B. Tech./ B.Arch.

(Jyotirmay Mathur)
Dean Academic

(Dilip Sharma)
Chairman SPGB

Prof. Rajeev Shringi
(Chairman, SUGB)

(Sumit Khandelwal)
ADUG

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

Minutes of 31st Meeting of Academic Affairs Committee (AAC)

The 31st meeting of Academic Affairs Committee (AAC) was held on 23 November, 2022 at 05:00 PM in the Meeting Room No.1, Prabha Bhawan for discussing the various issues. The following members attended the meeting:

1. Prof. Jyotirmay Mathur (Dean, Academics)
2. Prof Dilip Sharma (Chairman, SPGB)
3. Prof. Rajeev Shringi (Chairman, SUGB)
4. Dr. Sumit Khandelwal (Associate Dean UG),
5. Dr. Harlal Mali (DUGC, Department of Mechanical Engineering, Special Invitee)

Items No.	Particular
31-1.1	**To consider the matter regarding revision of the grade of student Mr. Nandan Aggarwal (ID:2020UCE1509) for the course Hydraulics Lab (Course Code: CE228).** DUGC after discussion recommends that the grade of the student must be revised and updated as 'BC' for the above-mentioned course as decided by the course coordinator. Supporting documents for the matter as per direction of SPGB have been received at the academic section. After detailed deliberations the AAC recommended that the matter of revision of grades be placed for approval of the Chairman Senate.
31-1.2	**To consider the matter regarding grade entry of "FP" in ERP in place of "IW" for the end-term examination of Major Project for 8th Sem. student Himanshu Yadav (2018UME1178) owing to his medical condition.** The AAC observes that the matter pertains to incorrect entry by the course coordinator in respect of the course 'Major Project'. AAC recommends that the grade correction may be placed for approval of the Chairman Senate.
31-1.3	**To discuss the chronology of dates for the end-term examination of 4th semester courses of student Dhote Harshal Ganesh (2020UME1141) owing to his prolonged hospitalization and medical condition.** The AAC observed that though the time limit was exceeded in conduct of special ETE for the student, it was not because of the fault of the student. It happened due to un-availability of the concerned course coordinator/instructor during summer vacation. Looking into the unusual conditions, the AAC approves the

	recommendation of the DUGC to conduct the special exam. The grades of the student may be updated on ERP as communicated by the department.
31-1.4	**To consider the matter regarding absence of Ph.D. Scholar from Invigilation duties during Mid-term examination of the Odd semester 2022-23 held from 17-10-2022 to 21-10-2022.** The AAC took this misconduct very seriously and recommended that one day assistantship of all such scholars may be deducted and this may be communicated to all the research scholars of the Institute. It was also decided to issue a warning to all Ph.D. scholars that they are required to report on the scheduled date and time for their respective duties during the Mid Term and End Term examinations otherwise it will be presumed that they are absent in the Institute and stricter action will be taken in future.
31-1.5	**To consider the matter of Mr. Naresh Kasana (2020UCH1883) regarding registration of 1st semester back log courses.** The Committee discussed the matter in detail and decided that in respect of 04 backlog courses of Mr. Naresh Kasana, course operating department may be asked to provide the equivalent course name for the old course. In case no course in old scheme can be marked; student may be given a chance to clear the course through equivalent MOOCs after getting the equivalence recommended by the relevant department. It was also decided by committee to ask from the all Departments about the mapping of the courses (Old and New courses).
31-1.6	**To report the cases of UG students who were considered for late fee waiver:** AAC rectified the fee waiver related 06 cases as in the list.
31-1.7	**To consider the matter to conduct special supplementary examination:** The Committee discussed the matter in detail and decided that as it was not because of the fault of the students for delay in deciding the matter and issuing order for unfair means cases. Therefore, both the below students are allowed for a special supplementary examination.

S. No.	Name of the student	Course details
1.	SUJEET KUMAR SHARMA (2018UCP1507)	MTT-421 CORROSION SCIENCE & ENGINEERING
2.	ASHISH KUMAR (2018UCE1213)	MTT-421 CORROSION SCIENCE & ENGINEERING

31-1.8	**To consider the matter of Mr. Sanjay Kumar Agarwal (2018RCE9113) and Mr. Gyani Ram Kumawat (2018RCE9002) regarding refund of late registration Fee deposited by them.** AAC discussed that the Ph.D. students are well aware about the registration schedule and they should have been careful to follow the academic calendar. The AAC turn down the request of the students.

(Jyotirmay Mathur)
Dean Academic

(Dilip Sharma)
Chairman SPGB

Prof. Rajeev Shringi
(Chairman, SUGB)

(Sumit Khandelwal)
ADUG

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

Minutes of 32nd Meeting of Academic Affairs Committee (AAC)

The 32nd meeting of Academic Affairs Committee (AAC) was held on 30th January, 2023 at 04:00 PM in the Meeting Room No.1, Prabha Bhawan. Following members attended the meeting:

1. Prof. Jyotirmay Mathur (Dean, Academics)
2. Prof Dilip Sharma (Chairman, SPGB)
3. Prof. Rajeev Shringi (Chairman, SUGB)
4. Dr. Sumit Khandelwal (Associate Dean UG)

Items No.	Particular
32-1.1	**To consider the issue of absence of Ph.D. students from Invigilation duties during the Mid Term and End-Term Examination Odd Semester 2022-23 held from 17 Oct, 2021 to 21 Oct, 2021, 05 Dec. 2022 to 17 Dec. 2022 and 04 Jan. 2023 to 07Jan. 2023 respectively.** AAC discussed the matter and decided to deduct one day scholarship going to be disbursed in the month of January 2023. An intimation in this regard will be sent to the accounts section. Academic Section will inform to the concerned Ph.D. Scholars through Email regarding reason and deduction of one day scholarship amount in advance. The AAC also decided that repeat of this act may result in more stringent action.
32-1.2	**To consider the request of Mr. Shantanu Bajpai (2019UME1826) to drop semester on medical grounds and to keep his ERP profile status active.** AAC discussed and decided that the DUGC shall submit complete medical documents related to Mr. Shantanu Bajpai (2019UME1826) after verifying/vetting from the medical Superintendent of MNIT, Jaipur. The decision in this regard will be taken after supporting documents are submitted to the Academic Section.
32-1.3	**To consider the request of Mr. Vishal Chauhan (2019UMT1869) Department of material science and metallurgical engineering for refund of fees for the semester during which he had taken a withdrawal.** AAC decided not recommend the request of Mr. Vishal Chauhan (2019UMT1869) since it is not as per the present rules approved by the senate.
32-1.4	**To consider the matter of two students who have received off-campus internship offers (outside Placement and Training Cell MNIT Jaipur).** AAC discussed the matter and decided that the DUGC itself should examine the case of Mr. Mohit Gupta (2019UEC1655) and Mr. Prabhjit Singh (2019UEC1755) under the light of profile/appropriateness of the companies. In case DUGC requires any support, it may directly coordinate with PTP and send final recommendation to Academic Section.

32-1.5 **To consider the application of the Ph.D. students who have not submitted institute fees for Even Semester 2022-23.**

AAC after detailed deliberation decided to issue a final warning to deposit fee within 07 days to the following four Ph.D. students who have not submitted institute fees for Even Semester 2022-23. (7 days duration shell be counted from the date of dispatch of email)

S.No.	Name	Institute ID	Progress report status (Odd Semester 2022-23)
1	Monika Choudhary	2019RCP9186	Submitted
2	Nemi Chand Rewari	2017RCY9017	Submitted
3	Ponugumatla Ramjee	2021RHS9066	Submitted
4	Rahul Singh Patel	2022RMT9082	Submitted

AAC also decided that the warning shall clearly mention that no further relaxation will be given in future.

32-1.6 **To consider the moderation of the grades of 1st semester M.Tech. of the Advanced Semiconductor Devices course (21ECT541) taught by Dr. Menka.**

AAC decided that no moderation should be done after the declaration of grade as has also been decided in the recent 38th SUGB meeting held on 17th January 2023.

32-1.7 **To consider to the updation of grade of Ms. Avantika Meena (2016UEC1083).**

Looking to the Covid restrictions and overlap of courses of different Semesters, the AAC approved that the grades may be updated.

32-1.8 **To consider to the period of Summer Vacation 2023.**

The AAC observed that the classes of II Semester 2022-23 will continue till June 10, 2023 and End Term examination till June 10, 2023. Committee recommends that Summer Vacations for 2023 shall be considered from June 11, 2023 onwards for a period of 45 days.

32-1.9 **To consider to the minor revision in Academic Calendar for IV, VI, VIII (Even) Semester, B.Tech/B.Arch. 2022-23.**

AAC approved the minor revision.

32-1.10 **To consider Academic Calendar for X (Even) Semester, B. Arch. 2022-23.**

AAC approved the minor revision.

32-1.11 **To report the revision in Academic Calendar 2022-23.**

AAC noted the following revisions in the registration schedule mentioned in Academic calendar **(UG)** for the even semester 2022-23:

Sl. No.	Activity	From	To
1	Fee deposition	22nd December 2022	6th January 2023
2	With late fee of Rs.1,000/-	07th January 2023	09th January 2023
3	With late fee of Rs. 10,000/-	10th January 2023	16th January 2023
4	Course Registration	26th December 2022	06th January 2023
5	Commencement of Classes	09th January 2023	

Academic calendar (PG & Ph.D.) for the even semester 2022-23

Sl. No.	Activity	From	To
1	Fee deposition	22nd December 2022	6th January 2023
2	With late fee of Rs.1,000/-	07th January 2023	09th January 2023
3	With late fee of Rs. 10,000/-	10th January 2023	16th January 2023
4	Course Registration	26th December 2022	06th January 2023
5	Commencement of Classes	06th January 2023	

32-1.12 **To report the matter regarding Course registration of Basic Management (BMT499) in semester 8thwho were on Internship during 7th Semester.**

Following student who were on Internship during7th Semester from Department of Mechanical Engineering and Department of Metallurgical and Materials Engineering are allowed for Course registration of Basic Management (BMT499) in 8th semester:

S. No.	Student Id	Student Name
1	2019UME1605	Atharva Patil
2	2019UME1883	Devansh Garg
3	2019UME1182	Manya Gupta
4	2019UME1662	Nitik Gupta
5	2019UME1837	Rudraksh Gupta
6	2019UME1611	Akshat Sharma
7	2019UME1168	Shailesh Suthar
8	2019UMT1696	Mudit Dubey
9	2019UMT1664	Avish Jain

Noted and ratified.

(Jyotirmay Mathur)
Dean Academic

(Dilip Sharma)
Chairman SPGB

Prof. Rajeev Shringi
(Chairman, SUGB)

(Sumit Khandelwal)
ADUG

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY

Office of Dean Academic

Minutes of Unfair Means Committee Meeting held on November 23, 2022

An urgent meeting of the Unfair Means Committee was held on November 23, 2022 at 05:30 PM in the Meeting Room, Near Dean (Academic) Office, Prabha Bhawan, MNIT Jaipur. The meeting was attended by the following members:

	Prof. Jyotirmay Mathur	Dean, Academic
	Prof. Dilip Sharma	Chairman SPGB
	Prof. Rajeev Shringi	Chairman SUGB
	Dr. Sumit Khandelwal	Associate Dean (UG), Senate Nominee
	Dr. Harlal Mali	DUGC Head, Department of Mechanical Engineering
	Dr. Dipaloy Dutta	DUGC, Head, Department of Chemical Engineering

The agenda items discussed in the meeting and resolution/recommendations of the committee are given here under.

1. **To discuss the unfair means cases reported in the III/V Semester Mid Term Examinations 2022-23 :**

   Background: Cases of unfair means were observed in recently held Mid-Term examinations. The cases reported during mid-term examinations pertain to Department of Mechanical Engineering and Chemical Engineering. The cases were reported by the concerned course coordinator/invigilator/flying squads to the respective DUGCs. The DUGC has forwarded the cases to the Unfair Means Committee.

   Discussion: The committee discussed the cases on individual basis. The types of unfair means included possession of mobile, copying from mobile.

   Recommendation: The committee decided that the exams pertaining to students at Sl. No.1 to 4, stands cancelled and they will be awarded 'FP' grade in respective paper.

   It was decided that the information regarding indulging in unfair means by the students will be communicated to the parents of the students. It was also decided that any such repeat offense by these students will attract severe penalty which may range up to expulsion (limited period/permanent) of the students from the Institute. Further, the decision of the committee will be communicated to all the students of the Institute.

S. No.	Name of the student	Course details	Examination
1.	Gaurav Meena (2020UME1230)	MET301 Automobile Engineering	5th Semester Mid-Term-Examination
2.	Manish Kumar Keshri (2020UME1943)	MET301 Automobile Engineering	5th Semester Mid-Term-Examination
3.	Harsh Meena (2021UCH1744)	CHT207 Energy Resource Utilization	3rd Semester Mid-Term-Examination
4.	Sarvesh (2021UCH1811)	CHT207 Energy Resource Utilization	3rd Semester Mid-Term-Examination

The meeting was concluded with thanks to the chair.

(Jyotirmay Mathur)
Dean Academic

(Dilip Sharma)
Chairman SPGB

Prof. Rajeev Shringi
(Chairman, SUGB)

(Sumit Khandelwal)
ADUG

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

Table Agenda

48th Senate Meeting

Item No. 48-6.1 To consider the panel of experts for faculty selections.

Dean, Faculty Welfare has prepared the panel of experts for faculty selections by taking inputs from the Departments and attempts have been made to ensure that major specializations of each department adequately be represented in the panel. The panel of experts for faculty selections is placed for approval of the senate.

Item is placed for consideration and approval.

Item No. 48-6.2 To review the Centralized Coordination of Examinations.

During even Semester 2021-22 the Dean, Academic had called a meeting of all the Heads of the Departments for sharing their views on reforms for conducting the examination and to be implemented from the Even Semester 2021-22. It was unanimously decided to make some changes in conducting the Mid-Term and End-Term theory examinations. The SoPs decided in the meeting were circulated to all the departments. It was decided that the proposed changes in conducting the examinations will be effective from the Even Semester 2021-22 (scheduled from 23rd May 2022 onwards) and other subsequent examinations. The proposed revisions/changes incorporated were as under:

Activity	Undertaken by (earlier)	Undertaken by (now)	Remarks
Fixing time slot of examination for different semesters of UG/PG Programs	Institute timetable coordinator	Institute timetable coordinator	No change
Fixing date sheet for schedule of exams	Respective departments	Respective departments	No change
Preparation of seating plan for the students	NOT DONE	Exam Cell	Improvement

Circulation of instruction to the students	NOT DONE	Exam Cell	Improvement
Setting up of question papers	Course Coordinator	Course Coordinator	No change
Distribution of question papers	Course Coordinator	Course Coordinator	No change
Assignment of invigilation duties	Respective departments	Exam Cell	**REVISED**
Collection of answer sheets after exam	Course Coordinator	Course Coordinator	No change
Assignment of flying squads	NOT DONE	Exam Cell	Improvement

At the beginning of the Odd Semester 2022-23 a meeting of all Heads of the Departments with the Director was held to discuss the Centralized Coordination of examination by the Academic Section. The intervention by the Academic Section was appreciated by most of the Heads of the Departments and few improvements were also suggested. It was decided that the Centralized Coordination may be continued further for one more semester, i.e. Odd semester 2022-23, and will be reviewed after that period.

Item is placed for consideration.