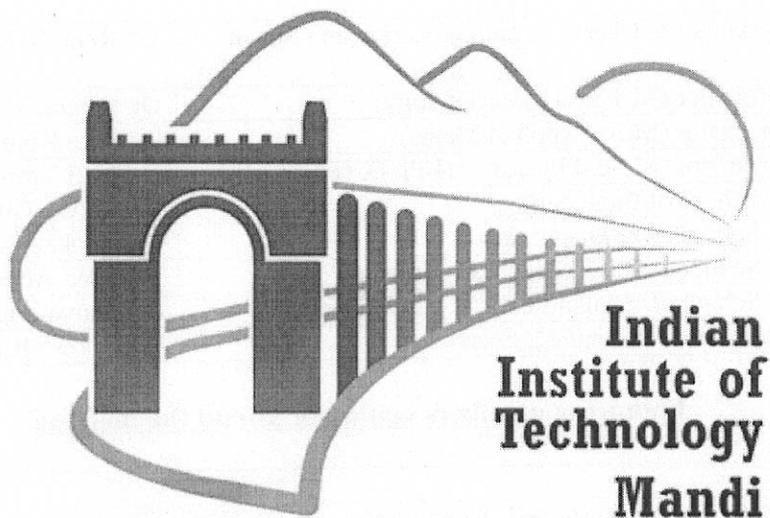


INDIAN INSTITUTE OF TECHNOLOGY MANDI
KAMAND, DISTT. MANDI – 175005 (HIMACHAL PRADESH)



MINUTES OF 28TH BOARD OF ACADEMICS MEETING

VENUE : A-4 CONFERENCE ROOM, KAMAND
DATE : 29TH JANUARY, 2019 (TUESDAY)
TIME : 03:00 P.M.

Following members attended the meeting

Sl.No	Responsibilities	Name
1	Dean Academics	Dr. Pradeep Parameswaran
2	Associate Dean (Research)	Dr. Rahul Vaish
3	Associate Dean (Courses)	Dr. Anil K Sao
4	Chairman Library Advisory Committee	Dr. Astrid Kiehn
5	Course Coordinator (IC Courses)	Dr. Aniruddha Chakraborty
6	Course Coordinator (B.Tech.-EE)	Dr. Shubhajit Roy Chowdhury
7	Course Coordinator (M.Tech.- (Energy Engg. (Materials)))	Dr. Atul Dhar
8	Course Coordinator (M.Tech.- (Mechanical Engg. (Energy Systems)))	
9	Course Coordinator (M.Tech.- (Communication and Signal Processing))	Dr. Renu M Rameshan
10	Course Coordinator (M.Tech.-Biotechnology)	Dr. Shyam K Masakapalli
11	Course Coordinator (M.Sc.-Applied Maths)	Dr. Nitu Kumari
12	Course Coordinator (M.Sc.-Physics) + (I-Ph.D. (Physics))	Dr. Hari Varma I/c
13	Nominee-1: School of Engineering	Dr. Rajesh Ghosh
14	Nominee-2: School of Engineering	Dr. Venkata Uday Kala
15	Nominee-1: School of Basic Sciences	Dr. Syed Abbas
16	Nominee-1: School of Humanities & Social Sciences	Dr. Suman Sigroha
17	Assistant Registrar (Academics): Secretary	Mr. Suresh Rohilla

Following members could not attend the meeting

Sl.No.		Name	
1	Chairman Course Proposal Committee + Nominee (SCEE)	Dr. Kunal Ghosh	Member
2	Course Coordinator M.Sc. (Chemistry)	Dr. Chayan K Nandi	Member
3	Course Coordinator (MA Dev. Studies) + Nominee (SHSS)	Dr. Shyamasree Dasgupta	Member
4	Course Coordinator (B.Tech.-CSE)	Dr. Dileep A D	Member
5	Course Coordinator (B.Tech.-ME)	Dr. Arpan Gupta	Member
6	Course Coordinator (B.Tech.-CE)	Dr. Deepak Swami	Member
7	Course Coordinator (M.Tech.- (VLSI))	Dr. Satinder Sharma	Member
8	Course Coordinator (M.Tech.- (Power Electronics and Drives))	Dr. Narsa Reddy Tummuru	Member
9	Nominee-2: School of Computing & Electrical Engineering	Dr. Aditya Nigam	Member
10	Nominee-2: School of Basic Sciences	Dr. Prosenjit Mondal	Member
11	Academic Affairs Secretary	Mr. Abhishek	Member
12	Research Affairs Secretary	Mr. Ashish Tiwari	Member
13	Industry Member – 1	Dr. Nadeem Akhtar	Member

Special Invitee

Sl.No.	Name	
1.	Dr. Prasanth P Jose	Asst. Prof. , SBS
2.	Dr. Pradeep Kumar (SBS)	Visiting Asst. Prof. , SBS
3.	Dr. Manoj Thakur	Asso. Prof., SBS
4.	Dr. Sandip Saha	Asst. Prof., SE

PART-A

(Issues discussed by the Board of Academics when the Student Members were present)

28.1 Confirmation of the minutes of 27th meeting of Board of Academics:

The minutes of the 27th Board of Academics meeting held on 26th November, 2018 were confirmed.

28.2 To consider approval of courses presented by the Course Proposal Committee (CPC):

The Chairperson, CPC presented New Courses for consideration and approval of BoA. After due deliberations, the BoA recommended following three courses for consideration by the Senate for its approval. The final course descriptions after incorporating the suggested changes are placed at **Annexure – A**.

Sl.No.	Course No.	Course Name	Credits
1	CE611	Structural Health Monitoring	3-0-0-3
2	CE689P	Post Graduate Project -II	0-0-34-17
3	EE627P	Post Graduate Project Part-II	0-0-36-18

The following four courses could not be presented, hence were deferred by the BoA to be deliberated in next meeting:-

Sl.No.	Course No.	Course Name	Credits
1	MA 603	Advanced Partial Differential Equation	3-0-0-3
2	MA 521	Functional Analysis	3-1-0-4
3	MA 511	Real Analysis	3-1-0-4
4	MA 705	Modelling Population Dynamics	3-0-0-3

Further, after due deliberations on the presented course EE 401P (Independent Study, 3-0-0-3), Chairman BoA constituted the following Sub-committee to revise the proposal and propose a general Independent Study course applicable to all engineering branches and submit the proposal to BoA/Senate for approval.

- | | | | |
|-------|-----------------------------|---|-------------|
| (i) | Dr. Sandip Saha | : | Chairperson |
| (ii) | Dr. Shubhajit Roy Chowdhury | : | Member |
| (iii) | Dr. Astrid Kiehn | : | Member |
| (iv) | Dr. Rajesh Ghosh | : | Member |



28.3 To consider Provision for NPTEL and other online courses.

After due deliberations, the Board felt a need to consider the consequences in accepting the credits from courses offered through NPTEL/MOOC/CORSERA etc. programs towards the completion of B.Tech/M.Tech/MA/M.Sc./Ph.D/MS degrees by students. Chairman BoA constituted the following sub-committee to make appropriate recommendations (credit and grade conversion, certificate process, process of accepting a course from these programs, basket in which such courses can be considered etc.):

- | | | | |
|-------|-----------------------------|---|-------------|
| (i) | Dr. Anil K Sao | : | Chairperson |
| (ii) | Dr. Shubhajit Roy Chowdhury | : | Member |
| (iii) | Dr. Pradeep Kumar, SE | : | Member |
| (iv) | Dr. Manoj Thakur | : | Member |

28.4 To consider proposal for B.Tech in Engineering Physics.

Dr. Pradeep Kumar and Dr. C. S. Yadav briefed the Board on the proposal for B.Tech. in Engineering Physics. The Board deliberated on the proposal and suggested a few modifications. The Board requested Dr. Pradeep Kumar and Dr. C. S. Yadav to modify the proposal accordingly and decided to recommend the same to the Senate for its consideration and approval. The Board advised that after incorporating the suggested changes, modified proposal for B.Tech. in Engineering Physics may be presented to the Senate taking inputs from other IITs/Industry experts.

28.5 To consider proposal for B.Tech. in Mathematics and Computing.

Dr. Manoj Thakur briefed the Board on the proposal for B.Tech. in Mathematics and Computing. The Board deliberated on the proposal and suggested a few modifications. The Board requested Dr. Manoj Thakur to modify the proposal accordingly and decided to recommend the same to the Senate for its consideration and approval. The Board advised that after incorporating the suggested changes, modified proposal for B.Tech. in Engineering Physics may be presented to the Senate taking inputs from other IITs/Industry experts.

28.6 Any other item with the permission of the Chair.

-NIL-

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


Secretary, Board of Academics


Chairman, Board of Academics

IIT Mandi Proposal for a New course

Course Number : CE611
Course Name : Structural Health Monitoring
Credits : 3-0-0-3
Prerequisites : Strength of Materials and Structures - CE301 and Structural Dynamics with Application to Earthquake Engineering - CE511 or equivalent.
Intended for : UG and PG
Distribution : Discipline Elective (UG and PG)
Semester : Odd/Even

Preamble: The increasing complexity of the modern day civil infrastructure systems substantiates the need to maintain them within required safety and serviceability envelope. Assessment of the current health of the structure has thus emerged as an attractive field of research in the last few decades. Commonly structural health assessment is taken up as a category of inverse problems in which the information in the measured structural response is mapped back to the domain of physically understandable structural parameters through which the current health of the structural system can be estimated indirectly.

To achieve uninterrupted health monitoring, important structures are often equipped with a network of sensors to continuously collect the response data. Over the era, several developments in this field enriched the archive of available techniques for condition assessment of infrastructure systems. Of them, the phenomenological model based schemes, model independent approaches, Gradient/ Hessian based optimization algorithms and nature mimicking evolutionary algorithms are few to name. This course will take a tour of the chronological developments in this research area before introducing them to the cutting-edge techniques. The course is more application based and therefore will include a good amount of weightage on a group project.

Course Modules with Quantitative Lecture Hours:

Module 1 (4 Hours):

Introduction to SHM, brief history structural rehabilitation, Condition monitoring, Infrastructure management, Components of SHM, Sensors and Instrumentation, Measurement noise and precision

Module 2: (4 Hours)

Nondestructive evaluation based methods: Acoustic emission based, Ultrasonic testing, Eddy current based method, Radiographic imaging based

Module 3 (15 Hours):

Vibration based methods, basic procedures (Operational evaluation, data acquisition fusion and cleansing), feature extraction, feature discrimination, Modal information based approaches: Model independent methods, Frequency based (forward and inverse), Mode shape and modal curvature based methods, Modal information based approaches: Model dependent methods, Direct matrix update, Parameter optimization, soft computing based methods

Module 4 (4 Hours):

Hands on experience with modal information based techniques: Experiments on modal analysis and damage detection, Damping estimation

Module 5 (15 Hours):

Bayesian estimation methods: Finite element model updating, Kalman filter based health monitoring, Extended and Unscented Kalman filtering, Particle filtering, Degeneracy, particle mutation strategy, Systems with correlated noise structure

Similarity content declaration with existing courses:

Sl. No.	Course Code	Similarity Content	Approximate % of Content
1	NA	NA	NA

Justification for new course proposal if cumulative similarity content is > 30%:

Not Applicable

Textbooks:

- (1) Angus P. Andrews and Mohinder S. Grewal, Kalman Filtering: Theory and Practice Using MATLAB, Willey, 1992.
- (2) Balageas, Daniel, Claus-Peter Fritzen, and Alfredo Güemes, eds. Structural health monitoring. Vol. 90. John Wiley & Sons, 2010.

Reference Books:

- (1) Farrar, Charles R., and Keith Worden. Structural health monitoring: a machine learning perspective. John Wiley & Sons, 2012. IS 1893 (Part 1) (2001).
- (2) Marwala, Tshilidzi. Condition monitoring using computational intelligence methods: applications in mechanical and electrical systems. Springer Science & Business Media, 2012.
- (3) Haykin, Simon S. Kalman filtering and neural networks. New York: Wiley, 2001.

Approvals:

Other faculties interested in teaching this course: Dr. Sandip Kr. Saha.

Proposed by: Dr. Subhamoy Sen

School: School of Engineering (SE)

Signature:

Date:

Recommended / Not Recommended, with comments:

Chairman, CPC

Date: _____

Approved / Not Approved:

Chairman, Senate

Date: _____

IIT Mandi
Proposal for a New course

Course Number : CE689P
Course Name : Post Graduate Project - II
Credits : 0-0-34-17
Prerequisites : Post Graduate Project – I (CE688P)
Intended for : M.Tech. in Structural Engineering Specialization
Distribution : Core
Semester : Even

Preamble: This course is aimed to provide a platform for the students to express their critical thinking and expertise on new ideas and solution methodologies for solving problems related to the broader aspects of structural engineering. The students are expected to be independent and capable of interpreting new results/ observations acquired during the project works of two semesters. The students will have to work on specific project objectives with the consent of their respective supervisor(s), and as decided during the previous semester while working on the course CE688P

Course Modules with Quantitative Lecture Hours:

At the end of the semester the students have to submit a detailed technical report and must give a presentation based on their completed work. A committee shall be formed to evaluate the students' performance during the entire period through their report and seminars.

Similarity content declaration with existing courses:

Sl. No.	Course Code	Similarity Content	Approximate % of Content
1	NA	NA	NA

Justification for new course proposal if cumulative similarity content is > 30%:

Not Applicable

Textbooks:

As suggested by the supervisor.

Reference Books:

- (i) As suggested by the supervisor.
- (ii) As the students find necessary during working on their research project.

Approvals:

Other faculties interested in teaching this course: Any faculty interested to offer projects related to Structural Engineering specialization

Proposed by: Dr. Sandip Kumar Saha



Signature:

Date:

Recommended / Not Recommended, with comments:

Chairman, CPC

Date: _____

Approved / Not Approved:

Chairman, Senate

Date: _____



IIT Mandi
Proposal for a New Course

Course Name: **Post Graduate Project Part-II**

Course Number: EE627P

Credit: 0-0-36-18

Prerequisites: Year I courses of M.Tech (Communications and Signal Processing) and Post Graduate Project Part-I

Students intended for: M.Tech. Communications and Signal Processing

Elective or Compulsory: Compulsory

Course Objectives: This course is meant to provide comprehensive project work for M.Tech Communications and Signal Processing 4th semester students. Project will be based on specific research problems taken up by students under the supervision of one or more faculty mentors and the topics should strongly relate to the Communications or Signal Processing or both. The course allows the students to carry a part of their thesis in Industry or other academic institutes inside or outside India, provided they have a guide from within IIT Mandi. The course will assist the student to undertake R&D, report writing, presentation and defense.

Contents: This is continuation of the project done in third semester.

Proposed by: Siddhartha Sarma

School: SCEE

Signature: _____

Date: _____

Recommended/Not Recommended, with Comments:

Chairman, CPC
Approved / Not Approved

Date: _____

Chairman, Senate

Date: _____



