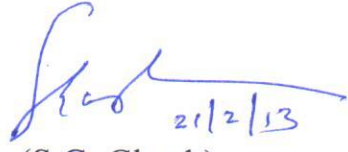


MECHANICAL ENGINEERING DEPARTMENT

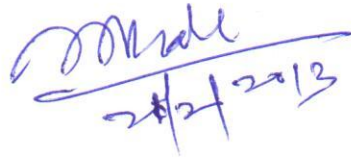
21.2.2013

The comments of DFB for the institute core courses are attached as minutes of the DFB (Item Nos. 3 to 13). The remaining items will be discussed in the DFB and will be sent in a different DFB minutes.


(S. G. Ghosh)
Secretary, DFB

Dean (Academics)

Through : Head, Mech. Engg.


21/2/2013

Encl : As above.

File : K-4


✓ ADLOR
✓ VCIC file


Mechanical Engineering Department

Minutes of the DFB meeting held on 13th & 18th February, 2013 at 04.00 p.m. & 12.00 p.m. respectively in the ME Committee room

The following members were present on 13th Feb., 2013:

Prof. S.R. Kale (Chairman), Prof. A. Chawla, Prof N. Bhatnagar, Prof. P V M Rao, Prof S. Mukherjee, Prof P.M.V. Subbarao, Prof. D. Ravi Kumar, Prof P. V. Rao, Prof S. Kohli, Dr. H. Hirani, Prof. S. Jain, Prof. A. Ray, Prof M R Ravi, Dr. P. Talukdar, Prof. K. Gupta, Dr. Amit Gupta, Dr. S. V. Modak, Dr. A.K.Darpe, Dr. P. M. Pandey, Dr. S. Jha, Dr. S. Aravindan, Dr. M.S.Kulkarni, Dr A.D.Gupta and Dr. S. Ghosh.

1. The minutes of the last DFB held on 30.01.2013 were confirmed with addition of two Annexures – Annexure I is the ME1 committee report and Annexure II is the ME2 committee report.
Action : DFB Secretary, to forward the two Annexures

2. The DFB deliberated at length on the Institute level core courses titled “Product Visualisation” and “Product Realization”. It was emphasized that since both the courses are supposed to be Institute level core courses, faculty members from outside the department should also be involved in taking these courses. The DFB decided to refer the DUGC proposed course structures to all the three groups. It was decided that feedback from the Groups about the courses should reach DFB before 27th Feb., 2013. On 27th Feb., 2013 a special DFB will be held regarding this and related issues.
Action : DFB Secretary, to forward to all the three Groups

3. The DFB discussed the other Institute core courses. It was felt that for some exceptional cases tutorials should be allowed for core courses. The current model of taking tutorial classes should be kept as an option. It was also felt that some branch specific courses should be included in the first and second semesters of the BTech undergraduate program.

4. The DFB felt that two important engineering courses viz., Materials Science and Engineering and Engineering Thermodynamics be included as Institute core courses.

The DFB was adjourned and the adjourned meeting was held on 18th Feb., 2013:

The following members were present on 18th Feb., 2013:

Prof. S.R. Kale (Chairman), Prof. A. Chawla, Prof N. Bhatnagar, Prof. P V M Rao, Prof S. Mukherjee, Prof P.M.V. Subbarao, Prof P. V. Rao, Prof J K Dutt, Prof S. Kohli, Prof. S. Jain, Prof M R Ravi, Dr. P. Talukdar, Prof. K. Gupta, Dr. Amit Gupta, Dr. S. V. Modak, Dr. P. M. Pandey, Dr. S. Jha, Dr. S. Aravindan, Dr. M.S.Kulkarni, and Dr. S. Ghosh.

5. The DFB discussed the template of the course titled “Introduction to Chemistry”. It was felt that the objectives of the course should be modified so that the common thread linking the Physical, Organic, Inorganic Chemistry and Bio chemistry can be established. The course may be adapted to the objective of synthesizing new materials and predicting their properties *a priori*. Consequently focus on methods and processes used to synthesize materials will be preferred rather than classification based on material types.

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6. For the course titled "Mathematics I" the DFB felt due to extreme focus in JEE on numerical problem solving, this course must give an opportunity to look at derivations and proofs rather than only emphasizing symbolic problem solving.
7. For the course titled "Mathematics II" the DFB felt that the following topics could be included; Gram-Schmidt Orthogonalisation; Singular Value Decomposition. Also emphasis could be given on proofs
8. The DUGC felt that the "Physics" course is well structured. However for the "Physics Laboratory" course the following comments were made:
 - a. The objectives of the physics laboratory should be "quantification of a natural phenomenon and exposure to statistical nature of measurements".
 - b. Experiments on magnetic fields (measurement of strengths and their distribution patterns) should be included.
 - c. Experiments in optics should focus on wave optics; geometrical optics can be excluded as this topic is part of JEE syllabus.
 - d. Measurement of physical constants related to electro-magnetic parameters can be included.
 - e. Grounding of the quantum mechanics concepts taught in the theory course should be included in the physics laboratory. In case of difficulty in formulating QM experiments, experiments similar to those indicated in Feynman's volumes involving computational/statistical enumeration of QM principles may be developed.
 - f. RC circuits need not be included.
9. For the "Biology" course, the credits should be modified to 4 instead of 3. Aspects of "environmental bio safety" should be included in the course. Special attention must be taken while designing and implementing this course so that the course does not become a handicap for students who have not studied biology in the plus two level. It is desirable to include structural biology and biomechanics, enzymes and proteins and their binding. In the laboratory some synthesis must be done for example demo of protein binding.
10. For the "Electrical Engineering" course the DFB has the following comments:
 - i. The module 11 on "Principles of measurement of voltage, current and power" should be covered after module 1, with less number of lectures. Three lectures seem to be too many for this topic in this course.
 - ii. The topics "Mesh and Nodal Analysis" may be omitted from module 2 as they are advanced topics.
 - iii. Modules 4 and 5 may be combined into a single module with less number of lectures.
 - iv. Since the Oscilloscopes no more use cathode ray tubes, the term "CRO" maybe replaced by "Oscilloscope".
 - v. It is desirable to include identification of motors and measurements of torque and motor constants in the laboratory. Only the observation of motors in the laboratory, as given in the template is not sufficient.

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- vi. There should also be experiments on drive circuits of AC and DC motors, with measurement of transient and steady state response.
- vii. The older templates for this course should also be provided.

11. DFB felt that the "Applied Mechanics" course should be renamed as "Rigid Body Mechanics". The DFB had concerns on inclusion of variational mechanics in an introductory course.

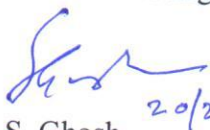
12. The DFB felt that "Environmental Engineering" course should be a common course for all engineering disciplines except Civil engineering. The following topics should be included in the course: introduction to ecological system, urban pollution, green technology, sustainability.

13. The DFB felt that the Computer Science course has been well designed and is acceptable.

Action : Forward to Dean Academics

14. The Chairman DFB informed the members about the offer for a Chair in the area of Rural Electrification as circulated by the Dean IRD. The members were also asked to give their valuable comments on the upgrading of campus and academic life to Dr A. K. Darpe who is the department representative in a central committee constituted by the Director to look into the different aspects of campus life.

The meeting ended with thanks to the Chair.



20/2/13

Dr. S. Ghosh
Secretary, DFB
CC: Dean Academics
Email copy to all Mech. faculties