

DEPARTMENT OF APPLIED MECHANICS

Date: - 22-01-2013

Minutes of 18th DFB Meeting held on 15-1-2013 at 3.00 P.M.

Members Present: Prof. Suhail Ahmad (Chairman), Prof. S.N.Singh, Prof. R.K.Mittal, Prof. D.K.Sehgal, Prof. S.Sanghi, Prof. R.Prasad, Dr. Vikrant Tiwari, Dr. Ajeet Kumar, Dr. Jayant Jain, Dr. Balaji Srinivasan, Dr. Sitikantha Roy, Dr. Sriram Hegde, Capt. P.R.Kulkarani, Cdr. R. Vijaykumar, Dr. Sawan Suman, Dr. S. Pradyumna, Dr. M.K. Singha, Dr. B.P. Patel (Secretary).

Prof. V. Seshadri, Prof. S.V. Veeravalli, Prof. P.K. Sen, Prof. R.K. Pandey, Prof. Anupam Dewan, Prof. Puneet Mahajan, Prof. Santosh Kapuria and Dr. M.R. Cholemari could not attend the meeting due to leave/ prior commitments.

1. Minutes of 17th meeting held on 19/12/2012 were confirmed.
2. Chairman informed the DFB that a space allocation committee has been constituted as under:

Prof. Suhail Ahmad	Chairman
Prof. P. Mahajan	Member
Prof. S.V. Veeravalli	Member
Prof. Santosh Kapuria	Member
Prof. R. Prasad	Member
Dr. S. Hegde	Member
Dr. V. Tiwari	Member

The DFB approved the constitution of the committee. Since the matter is very urgent, the committee was requested to finalize its minutes as soon as possible.

3. The DFB deliberated that Departmental Workshop is used as Lab. for Product Design Project I and II and Feasibility study. Many of the M.Tech. and Ph.D. students use the facility for fabrication of experimental set-up for their work.

In view of this, it is resolved that the Departmental Workshop be renamed as "Design and Fabrication Lab".

4. DFB discussed the proposal to float new course DIL110: Creativity and Innovation by Industrial Development and Design Centre. DFB has no comments.
5. Prof. S. Sanghi briefed the DFB about the deliberations of Under graduate Curriculum Implementation Committee meetings. The following issues relevant to the Department were discussed:

(i) AML110: Engineering Mechanics: DFB recommended 3-1-0 Structure of the course. DFB also agreed in principle to include Introduction to "Lagrangian and Hamiltonian Mechanics".

S.V. Veeravalli
 22/1/13

B.P. Patel

dean (Acad.)

However, reducing the details on Newtonian requires a discussion amongst various stakeholders. A half a day workshop of Faculty representatives of various departments may be organized to have mutual discussion to finalize the course contents after requisite changes.

(ii) For large classes more than one faculty member may be associated with tutorial sessions. They could take turns to conduct tutorials. This way the entire work of grading large class groups will not fall on a single faculty member.

(iii) Comments on suggested course content of Materials Science Course for EE Students are attached as Annexure.

6. DFB discussed the recommendations of the strategy committee on GATE and opined that the proposed revised pattern of GATE will help to improve the standard and cater to the large number of candidates. The recommendations of the committee may be provided in listed format under various heads instead of describing it in paragraphs. It would be convenient for future reference, review and providing feedback. DFB made the following suggestions to improve the same:

- (i) Senates of IITs have approved the inclusion of a course on Environmental Engineering at graduate level for all disciplines. It may be included at the first level of GATE under basic engineering component once it becomes part of engineering curricula across the country.
- (ii) The statistical analysis of first level GATE may be useful to decide the eligibility for GATE advance. For the first GATE based on this new format, it would be useful to analyze data from past GATE results to frame the broad guidelines for deciding on the cut-off for eligibility to the second level test.

7. DFB discussed the list of Journals of repute relevant to the Department and approved the same. It is noted that all the Journals except few are included either in Scopus or Web of Science. Any other Journals of repute may also be considered ^{on a} case to case basis.

8. DFB ended with a vote of thanks to the chair.

B.P. Patel

(B.P. Patel)
Secretary

For *S.V. Menon*

(S Ahmad)
Chairman

22/1/13

Annexure

Feedback on Materials Science Course for EE Students (attachment to Minutes of Third Meeting of UCIC held on Dec 11, 2012)

The suggested course content appears closer to a course on Solid State Physics. It does not fit the description of a broad-based first course in introductory Materials Science. In fact, three of the four paragraphs (1st, 3rd and 4th.) constitute the complete course **EPL 206: Solid State Physics**. The remaining paragraph (2nd) is from **PHL120: Physics of Materials**. A combination of a full course (EPL 206) with an additional part from another course (PHL 120) will make it a rather heavy course. The coherency will also be doubtful.

It is also questionable why a solid state physics course should be offered as an introductory materials science course. As a starting point for what may constitute a good course in materials science for electrical engineers, one may consult the following standard text:

Ion P James, *Materials Science for Electrical and Electronic Engineers*, OUP, 2001.

This has 11 chapters as follows:

1: Conductors, Insulators and Semiconductors; 2: An introduction to metals;
3: Mechanical Properties; 4: Manufacturing Conductors; 5: Steels; 6: Electrochemistry:
Electroplating and Corrosion; 7: Ceramics; 8: Plastics; 9: Semiconductors and
electronics industry; 10: Magnetic materials; 11: Superconductors and optical fibres.

A comparison of this list with what is offered in the suggested course content brings out in striking contrast the broad based approach of James' book against the extremely narrow focus of the present suggestion. Electrical engineers should not only learn about the electrical properties of electrical materials in their first Materials Science course. They should get some exposure to mechanical properties and also structural materials like Steel that is work horse of all engineering.

We thus feel that the EE department should reconsider their course content for Materials Science. In keeping with the spirit of the Curriculum Review, the emphasis should be on inter-disciplinarity and not narrow specialization

B. Patel

S. V. Meenakshi