

Academic Review Committee

Report on the Open House conducted on the Interim Report on the UG Program

February 21, 2009 (L-17)

The event was very well attended with active participation of about 80-100 faculty colleagues. The meeting began with opening remarks by Sanjay Mittal followed by a presentation of the report by Rajiv Shekhar. The floor was then thrown open to remarks/suggestions from all. In addition to the comments during the Open House, suggestions also came via e-mails/discussions from colleagues. The comments have been classified in one of the following seven categories:

A: Degree options

B: Attendance/graduation requirement/evaluation

C: Communication skill

D: Core structure

E: Implementation

F: UG research

G: Miscellaneous

A: Degree options

1. Five-year MSc should be retained (through JEE as an entry option).
2. Can the duration of the dual-major program be made flexible e.g., may go beyond five years? This may reduce the pressure on the faculty members.
3. Consider the employment angle of the four-year BS program.
4. The structure of minor and the sequence of courses for each minor should be clearly specified.
5. Consider the option of "better" degrees for better students e.g., honors.
6. Consider the time tabling issues that come with minors and half-semester courses.
7. The dual-major program should not be time-bound.
8. To facilitate implementation, groups must be defined for the second major. For example, ME & AE; EE & AE/ME; CHE & CHM, CHM & BSBE, MTH & CSE. How will these appear in transcripts?
9. BT/MT dual degree through JEE should be retained.
10. The structure of the Engineering Science program should be clearly prescribed. Also, one needs to consider the employment opportunities after going through such a program.
11. Consider the implementation issues for minor.
12. Every minor must have an adequate lab component.
13. Consider a "fast track" different program for students interested in doing research.
14. Dual major appears to be a better option compared to minor as far as time tabling goes.
15. Reward students in some way who opt for research. Reward good students.
16. Consider multiple exit options.
17. Integrated programs should stay e.g., integrated PhD.
18. Consider multiple entry points independent of JEE.
19. Consider extra project-oriented courses for good students and introduce an A* grade.

B: Attendance/graduation requirement/Evaluation

1. Graduating CPI: instead of 4.0, it should be 4.5. Retaining 5.0 was also suggested by some.
2. Report class attendance (as a percentage or a fraction) in the transcript; something like attendance index (0-1).

3. Instead of having a lower graduation CPI requirement for weak students, is it possible to reduce the credit requirement (e.g., thirty two courses instead of forty courses) for them? This may better cater to the greatly increased spread in the preparedness among the students.
4. Attendance in class cannot be a criterion for admission to examinations.
5. No student should be terminated, but the institute commits the resources toward a student for only four years.
6. The graduation requirement must include obtaining passing grades in all core courses.
7. Associate attendance with grades e.g., 90% attendance is required for getting A.
8. Attendance requirement is a good way to grow the sense of ethics among the students.
9. One mid term/One end semester exam is good. Can be supplemented by more projects and oral exam type evaluations.
10. Finer grading (A+, A, B+, B, B- etc.)

C: Communication skill

1. Emphasis should be placed on technical writing when preparing the lab reports.
2. Need appropriate guidelines for the departmental component of the communication skill course.
3. Let the JEE team handle the English diagnostic test.
4. Teach English as a foreign language. Allocate extra semester for students weak in communication and teach them English in this extra semester (possibly the first semester).
5. Mention of D0 in the communication skills report should be removed.
6. Hire professionals for teaching communication skill courses.
7. Make the technical communication skill course optional.

D: Core structure

1. Seek department feedback for core structure e.g., some departments may want more than two math courses in the core program.
2. A "research lab" component can be associated with the UG labs where new experiments can be tried out. This can be made department-specific.
3. Take department opinion in deciding a minimal core program.
4. Participation of members of the different faculties may not be a pragmatic option for running the core program.
5. There should not be any time limit for completing the core courses (e.g., a two-year time bound is too restrictive).
6. Make core, level-1, level-2 HSS course placement more flexible.
7. Students need more exposure to computing. There is a need for a second computing course.
8. Make the core more flexible i.e., different departments may want different cores.
9. Can the core science courses be moved to second and third semester. Have no science courses in first semester to break the monotony for the student.
10. Need another course related to Computers as a follow up of ESC101

E: Implementation

1. Opine on increased student population in tutorials.

2. Modular course structure may be good for manufacturing science courses.
3. Have only two lecture hours per week instead of three. Allow students to take a large number of courses. This may reduce the complication of time tabling.
4. Instead of half-semester courses, have two-lecture semester-long courses.
5. Have supplemental instructors (SIs) for conducting the tutorials. These positions are filled by students who got high grades in the past offerings of the course. Leave the tutorial scheduling to the SIs (e.g., can be held in the residence halls). The SIs get paid by the institute.
6. Take into account the widely varying competence of students in the class.
7. Off-load some portions of management-related activities in teaching to scientific officers and good students.
8. Consider the entire proposal in the light of implementation issues. Specifically, attendance, electives, time-tabling.
9. Not enough OE's at present to choose from. Each department must offer two OEs and these must be placed in the OE slots.
10. Fix the types and time table slots of the modular courses.
11. Trimester system may bring more flexibility.
12. Tinkering requires more resources such as labs etc.

F: UG research

1. Consider the possibility of introducing industrial training.
2. Making BTP and industrial training optional is contradictory to the fact that ARC wants to emphasize exposure to experimental science.
3. Consider 4-6 weeks of internship at the end of the 3rd year.
4. Tour of Indian industry during the 3rd year.
5. Consider two weeks of community service at the end of the 2nd and 3rd year. Expose students to the lives of "ordinary" citizens. Identify ways to improve their lives by better and more efficient technology. Students should prepare a business case (economic viability) for such technology and may take up BTPs on these topics.
6. Relate industrial work with senior-level course contents. Relate research with national needs.

G: Miscellaneous

1. So many new Institutes have come up. What is the objective of IITK's education? What is our brand value? How are we different than others. This is to be sorted out at all levels. For example, all courses must have a description of the objectives of that course.
2. The issue of Washington Accord and international credit compliance.
3. Value education: emphasize on value creation among the students through NSS, NCC, and yoga.
4. Consider the grading scales.
5. There should be another open house at a later date.
6. Consider a course on ethics, civic duties, and responsibilities.
7. Consider a monitoring committee for overseeing teaching.
8. Do not only look at student point of view. Also look at ways to make the curriculum and its implementation faculty friendly so that they have more time for research.
9. Mentor young faculty members.

10. Have a week long course on “living life” for first year students. This might be useful in teaching them to learn to take decisions.
11. Need to review electives. Presently they are proposed and never reviewed.
12. Electives must be offered only if there are a minimum number (decided a priori) of students.
13. We need about 4 TA courses to allow for Design, Synthesis, Tinkering and Industrial Interactions.

Summary of the data from the feedback forms (43 forms)

Questions		Response(s)		
		Yes	No	Total
1	Graduating CPI being 4.0	15	27	42
2	B.Tech. in Engg. Science	29	08	37
3	Minor	37	04	41
4	How much should be compulsory Math/Physics/Chemistry/Life-Science Content	* Please see the comments below		
5	BTP becomes optional	26	04	30
6	80% Mandatory attendance	30	11	41
7	Modular courses	30	02	32
8	Semester v/s Quarter	36 (S)	04(Q)	40
9	One v/s Two mid sem exams	23(O)	15(T)	38
10	BT-MT dual degree is not offered at time of JEE but can be opted later by interested candidates can opt for it later	36	06	42
11	M.Sc. Integrated is not offered at the time of JEE (instead, 4 yr BS is offered). Interested candidates can opt for it later	29	09	38
12	PE/CPA has slots in the time table	23	05	28
13	Possibility of dual major/degree	31	04	35
14	Possibility of MBA after BTech/BS	26	11	37

*** Some of the comments made by respondents for Q4 are:**

1. 1/4th of the total course
2. 8 courses in total
3. 2 in each subject (8 in total)
4. 6-8 courses
5. 2 courses in MTH and rest should be department specific
6. Science course should not be diluted. There should be basic emphasis on the basic contents of the course.
7. 30% each in Math, Physics, and Chemistry
8. Do not change MTH to 2 from existing 3
9. 1 course in PHY, CHM and BIO is OK. 2 courses in MTH is OK.
10. 25% interdisciplinary, 25% HSS or Open Elective
11. 2 MTh, 1 PHY, 1 CHM, 1 LIFE Sc + Labs
12. 100-150 credits
13. Let it be decided by the Dept
14. 30-35%
15. The proposed break up is OK

16. 3, 2, 1,1 each in MTH, PHY, CHM, & Life Sc
17. Equal distribution
18. Keep ~20% for each one
19. More emphasis on applied MTH
20. 60%, 25%, 15% in Profession, Sciences and HSS respectively