



भारतीय प्रौद्योगिकी संस्थान, कानपुर
INDIAN INSTITUTE OF TECHNOLOGY, KANPUR
P.O.: I.I.T., Kanpur 208 016, Uttar Pradesh, India

शैक्षिक विभाग : पूर्वस्नातक शाखा

ACADEMIC SECTION : UNDERGRADUATE OFFICE

Chairman, CCC

To,
The Chairman
IAC
IIT Kanpur

March 22, 2011

Sub.: Revised CCC report for 2011-2012-I Semester

Dear Sir,

We have revised the CCC report for 2011-2012-I Semester as per the points raised during the IAC meeting held on 18 March 2011. The details of the revision are as follows:

1. It was suggested during the IAC meeting keeping in mind the tutors available to have the tutorial sections in engineering sciences to be of 40 students per section instead of 35 students per section. Based on this we have revised the CCC report which is attached herewith as Annexure 1.

The earlier version with 35 students per section is attached as Annexure 2.

2. The load of departments has been incorporated in the Table 5 List (b) in both the reports in Annexure 1 and 2.
3. The figures in Table 5 List (b) are based on Manindra Agarwal Committee report. A copy of the Manindra Agarwal Committee report is enclosed for your ready reference.

Kind regards

P. Madhwa

(Actg. Chairman, SUGC)

Shalab

(Chairman, CCC)

REPORT OF THE CORE CURRICULUM COMMITTEE (CCC) ASSIGNING CORE TEACHING LOAD FOR 2011-2012-I SEMESTER

**GUIDELINES FOR DRAWING INSTRUCTOR- IN- CHARGE FOR CORE COURSES
(Based on the recommendation of Manindra Agarwal committee)**

1. A course should stay with the same department for two consecutive years before moving to another, if several departments have the capability to provide the instructor- in-Charge. Accordingly, the Instructor-in-Charge is to be drawn from various departments as under for the next eight years:

Course No. & Title	2010-11 & 2011-12	2012-13 & 2013-14	2014-15 & 2015-16	2016-17 & 2017-18
TA101 (ENGINEERING GRAPHICS)	CE	ME	CE	AE
ESO202 (THERMODYNAMICS)	AE	CHE	ME	CHE
ESO204 (SOLID MECHANICS)	ME	CE	AE	CE
ESO212 (FLUID MECHANICS)	CHE	AE	CHE	ME

2. Only exception to (1) above is the course TA201 (Manufacturing processes) which will alternate between ME and MSE and the changeover will be at the end of every academic year.
3. For all courses not covered in (1) and (2) above the Instructor-in-Charge will come from departments as follows:

Department (s)	Course(s)
Biological Science & Bioengineering	ESO219 (Introduction to Biology); LIF101 Life Sciences
Chemistry	CHM101, CHM201
Civil Engineering	ESO218 (Comp. Methods)
Computer Science & Engineering	ESC101 (Computing), ESO211 (Data structure and algorithm)
Electrical Engineering	ESO210 (Introduction to EE)
Humanities & Social Sciences	ENG112S, HSS-I, HSS-II,
Materials Science & Engineering	ESO214 (Materials)
Mathematics & Statistics	MTH101N, MTH101S, MTH102R, MATH 203
Physics	PHY101, PHY102, PHY 103, PHY 102S

TABLE 2: Department/IDP-wise Distribution of Core Course instructors for the Academic Session 2011-12 First Semester.

Sl. No.	Department/IDP	Course(s)
1	Aerospace Engineering (AE)	ESO 202
2	Biological Sc. & Bio Engineering (BSBE)	LIF101, ESO219
3	Chemical Engineering (CHE)	ESO 212
4	Chemistry (CHM)	CHM101, CHM201
5	Civil Engineering (CE)	TA 101
6	Computer Sc. & Engineering (CSE)	ESC101, ESO211
7	Electrical Engineering (EE)	ESC102, ESO210
8	Humanities & Social Sciences (HSS)	ENG112/HSS-1
9	Industrial & Management Engineering (IME)	--
10	Mathematics & Statistics (MTH)	MTH101, MTH101S, MTH102R, MTH203
11	Mechanical Engineering (ME)	ESO 204
12	Materials Science & Engineering (MSE)	ESO214, TA 201
13	Material Science Programme	--
14	Physics (PHY)	PHY101, PHY102, PHY 103, PHY102S,

TABLE 3: Faculty Strength, Occupancy Ratio & Availability (2011-12-I Sem.)

Sl No.	Department/IDP	Strength		Faculty Available (as on 25.7.11)		Occupancy Ratio r_1
		Sanctioned	Existing (as on 15.3.11)	Regular	Others#	
1.	AE	20.0	16.5	15.5	0.0	0.78
2.	BSBE	15.0	12.0	12.0	0.0	0.80
3.	CHE	32.0	21.0	20.0	0.0	0.63
4.	CHM	30.0	30.0	26.0	0.0	0.87
5.	CE	33.0	33.0	30.0	0.0	0.91
6.	CSE*	18.0	23.5	23.5	0.0	1.31
7.	EE	53.0	36.5	34.5	0.0	0.65
8.	HSS	31.0	31.0	28.0	0.0	0.90
9.	IME	18.0	14.0	11.0	0.0	0.61
10.	MSE	32.0	22.0	21.0	0.0	0.66
11.	MTH	36.0	35.0	34.0	0.0	0.94
12.	ME	42.0	36.5	35.5	0.0	0.85
13.	PHY	38.0	30.0	27.0	1.0	0.74
14.	MSP	6.0	3.0	3.0	0.0	0.50
15.	LTP*	0.0	1.0	1.0	0.0	-
16.	NET	0.0	0.0	0.0	0.0	-
17.	DES*	0.0	1.0	1.0	-	-
	TOTAL	404.0	346.0	323.0	1.0	
Distribution:						
Engineering		269	220	208	-	0.77
Sciences		104	95	87	1	0.85
HSS		31	31	28	-	0.90

* Director Quota

Includes Visiting

TABLE 4: Department / IDP – wise Distribution of Faculty Unit for 2011-12-I

SI No.	Department/ IDP	Occupancy Ratio	Weight Factor	Faculty Available		Units Obtainable
		r_i	w_i	f_i	$(w_i)(f_i)$	x_i
Engineering						
1.	AE	0.78	0.89	1.5	13.80	5.84
2.	BSBE	0.80	0.90	12.0	10.80	4.57
3.	CHE	0.63	0.82	20.0	16.30	6.90
4.	CE	0.91	0.96	30.0	28.65	12.13
5.	CSE	1.31	1.16	23.5	27.14	11.50
6.	EE	0.65	0.83	34.5	28.46	12.06
7.	IME	0.61	0.81	11.0	8.86	3.75
8.	MSE	0.66	0.83	21.0	17.43	7.38
9.	ME	0.85	0.93	35.5	32.84	13.91
10.	DES	-	-	1.0	-	-
11.	LTP	-	-	1.0	-	-
12.	MSP	0.50	0.75	3.0	2.25	0.95
13.	NET	-	-	-	-	-
Sub-total		-	-	208	186.53	79
Sciences						
1.	CHM	0.87	0.94	26.0	24.31	40.64
2.	MTH	0.94	0.97	34.0	32.98	55.13
3.	PHY	0.74	0.87	28.0	24.36	40.72
Sub-total		-	-	88	81.66	136.5
Humanities & Social Sciences						
1.	HSS	0.90	0.95	28	26.60	25.27
Grand Total		-	-	334	294.79	247.77

$$w_i = 0.5 (1+r_i)$$

$$x_i = [(w_i f_i) \times (\text{Total Units required from Engineering or Science or HSS})] / [\sum w_i f_i]_{\text{Eng/Sc/HSS}}$$

Total Units Required from Engineering	79
Total Units Required from Science	136.5
Total Units Required from HSS	25.27

TABLE 5:

Department/IDP-wise Allocation of Instructor's and/or Tutors for Core Courses in Science & Engineering for 2011-12-I Semester

Courses	Units Reqd.	AE	BSBE	CHE	CE	CSE	EE	IME	ME	MSE	MSP	CHM	MTH	PHY	DES	TOTAL
List (a) : Courses to which the instructor in-charge is always provided by the same department																
CHM 101 Chemistry Lab	14											1+13				1+13
MTH 101 Mathematics-1	24												4+20			4+20
PHY 101 Physics Lab	9													1+8		1+8
PHY 102 Physics-1	15													2+13		2+13
PHY 103 Physics -2	12													2+10		2+10
ESC 101 Computing	15					2+13										2+13
LIF 101 Life Sciences	2		2													2
ESO 210 Elect. Engineering	4.5						1.5+3									1.5+3
ESO 214 Prop. of Materials	3.5									1.5+2						1.5+2
ESO 211 Data Struc. & Algo. II	2					2										2
ESO 219 Intro. to Biology	6		2+4													2+4
CHM 201 Chemistry	25											4+21				4+21
MTH 203 Mathematics-3	25												4+21			4+21
MTH 102R Mathematics-2	4.5												1.5+3			1.5+3
MTH 101S Mathematics-1	3												1+2			1+2
PHY 102S Physics-1	3													1+2		1+2
List (b) : Courses where instructor-in-charge is provided by two or more departments																
TA 101 Engg. Graphics	10	2			2+3				3							2+8
TA 201 Manuf. Process	13							2	5	2+4						2+11
ESO 202 Thermodynamics	7	2+1		2					2							2+5
ESO 204 Mech. of Solids	6	1			2				2+1							2+4
ESO 212 Fluid Mechanics	11	3		2+3					3							2+9
Units Assigned		9	8	7	7	17	4.5	2	16	9.5	-	39	56.5	39	-	214.5
Units Obtainable		6	5	7	12	12	12	4	14	7	1	41	55	41	-	217
X		3	3	-	-5	5	-7.5	-2	2	2.5	-1	-2	1.5	-2		-2.5

If units are assigned as $m + n$, then m indicates Instructor units and n indicates tutor unites; If units are assigned as n, then n indicates tutor units only, except the course ESO211 where the number 2 is the Instructor units.

(Shalabh)
Chairman, CCC

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ESO202 (THERMODYNAMICS)	AE	CHE	ME	CHE
ESO204 (SOLID MECHANICS)	ME	CE	AE	CE
ESO212 (FLUID MECHANICS)	CHE	AE	CHE	ME

2. Only exception to (1) above is the course TA201 (Manufacturing processes) which will alternate between ME and MSE and the changeover will be at the end of every academic year.
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6	Computer Sc. & Engineering (CSE)	ESC101, ESO211
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4.	CHM	30.0	30.0	26.0	0.0	0.87
5.	CE	33.0	33.0	30.0	0.0	0.91
6.	CSE*	18.0	23.5	23.5	0.0	1.31
7.	EE	53.0	36.5	34.5	0.0	0.65
8.	HSS	31.0	31.0	28.0	0.0	0.90
9.	IME	18.0	14.0	11.0	0.0	0.61
10.	MSE	32.0	22.0	21.0	0.0	0.66
11.	MTH	36.0	35.0	34.0	0.0	0.94
12.	ME	42.0	36.5	35.5	0.0	0.85
13.	PHY	38.0	30.0	27.0	1.0	0.74
14.	MSP	6.0	3.0	3.0	0.0	0.50
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6.	EE	0.65	0.83	34.5	28.46	13.12
7.	IME	0.61	0.81	11.0	8.86	4.08
8.	MSE	0.66	0.83	21.0	17.43	8.04
9.	ME	0.85	0.93	35.5	32.84	15.14
10.	DES	-	-	1.0	-	-
11.	LTP	-	-	1.0	-	-
12.	MSP	0.50	0.75	3.0	2.25	1.04
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1.	CHM	0.87	0.94	26.0	24.31	40.64
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Total Units Required from Engineering

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Total Units Required from Science

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Total Units Required from HSS

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ESO 212 Fluid Mechanics	12	3		2+4					3							2+10
Units Assigned		11	9	8	8	19	4.5	2	16	10.5	-	39	56.5	39	-	222.5
Units Obtainable		6	5	8	13	13	13	4	15	8	1	41	55	41	-	223
X		5	4	-	-5	6	-8.5	-2	1	2.5	-1	-2	15	-2		-0.5

If units are assigned as $m + n$, then m indicates Instructor units and n indicates tutor unites; If units are assigned as n, then n indicates tutor units only, except the course ESO211 where the number 2 is the Instructor units.

(Shalabh)
Chairman, CCC

Recommendations for Core Course Allocation

Members: Goutam Deo, Sudhir Kamle, Neeraj Mishra, Manindra Agrawal

Invitees: Ajit Chaturvedi, Jitendra Kumar, Sudhir Mishra

Background

The core course allocation exercise is carried out every semester in which instructors and tutors for core courses are assigned to departments. This allocation is done based on expertise available in different departments. In addition to this, it is calculated which departments are over- or under-loaded and an attempt is made to balance the load. The formula used for calculation is, however, based on parameters which are no longer valid and hence does not provide the right picture. At the same time, it has been observed that attempts to balance the load have not been very successful. It must be mentioned that the balancing exercise is primarily done with respect to the tutors, not the instructors.

Due to the above inadequacies of the process, the IAC constituted a committee to look into this course load formula and suggest modifications to the process of course allocation. The committee decided to co-opt three more members: Professors Ajit Chaturvedi, Jitendra Kumar, and Sudhir Mishra.

Recommendations

The recommendations of the committee are as follows.

- i. Each department is given ownership for a core course, except for the clearly identified set of courses that are rotated amongst some departments. Thus, table I & II of CCC remain as they are.
- ii. Drop the rest of the calculations for balancing load -- they do not achieve much in reality.
- iii. The owner department is responsible for arranging instructor and tutors for the course. However, to encourage genuinely interested faculty members to participate in core teaching, the DOAA may send a note to all HODs seeking faculty volunteers for tutorials of core courses. This is to be done before the course allotment exercise in various departments starts.
- iv. Allow PhD and MTech / DD students to tutor core courses. To attract good students, offer them an additional honorarium of Rs 5K per month; and have an open advertisement across the institute inviting applications for this. The selected students should not be given any additional TA duty. A PhD student can only do this after course work is completed, and MTech/DD students can do it only in

their final year. Students should be properly trained for the tutoring, either by the instructor or by CDMC. A student must attend the course when he/she is tutoring for the first time and his/her supervisor's consent is required for doing the tutorship.

- v. For shared courses, the assignment of instructors continues as per the current rotation policy. The tutors for the courses should come equally from each participating department in every semester the course is offered.
- vi. A department that is not offering any core course (for example, IME) may contribute to the UG program in the form of an open elective or tutors for the core courses.

(Goutam Deo)

(Sudhir Kamle)

(Neeraj Mishra)

(Manindra Agrawal)

(Ajit Chaturvedi)

(Jitendra Kumar)

(Sudhir Mishra)