Report of the Core Curriculum Committee

First (I) Semester of the Year 2020-21

1. Guidelines for Drawing Instructors and Tutors from Various Departments

1.1 List of Core Courses and respective Departments handling them as per MA Committee and/or agreements between/among departments when Instructors are drawn from multiple Departments

Course No. and Title	Departments			
	2018-19 & 2019-20	**2020-21** & 2021-22	2022-23 & 2023-24	2024-25 & 2025-26
TA101(Engineering Graphics)	CE	ME	CE	AE
ESO201(Thermodynamics)	AE	CHE	ME	CHE
ESO202(Solid Mechanics)	ME	CE	AE	CE
ESO204(Fluid Mechanics)	CHE	AE	CHE	ME
HSS-1	HSS/ECO	HSS/ECO	HSS/ECO	HSS/ECO
HSS-2	HSS/ECO	HSS/ECO	HSS/ECO	HSS/ECO

1.2 List of Core Courses and respective Departments handling them as per MA Committee when Instructors are drawn from a fixed Department

Department	Course(s)
BSBE	LIF101, ESO206
CHM	CHM101[#], CHM102[e], CHM102R, CSO201[e], CSO202[e]
CE	ESO208
CSE	ESC101, ESO207
EE	ESC201*, ESO203*
ES	ESO213
HSS	ENG112, COM200
ME	TA202*, ESO209
MSE	TA201*, ESO205*
MTH	MTH101, MTH102[e], MSO201[e], MSO202a, MSO203b
PHY	PHY101[#], PHY102, PHY103, PSO201[e]

[e]Courses normally offered in even semester

[#] Courses shifted to even semester

*Courses where lab credits are shifted to even semester

1.3 List of Core Courses and Respective Departments that will provide Theory and Lab Tutors / Instructors

Course no.	Course Name	Departments That Provide Tutors / Lab Instructors
CHM101#	Chemistry Lab	CHM
MTH101	Mathematics-I	MTH
PHY101#	Physics Lab	PHY
PHY102	Physics-I	PHY
PHY103	Physics-II	PHY
ESC101	Intro to Computing	CSE
LIF101	Life Science	BSBE
TA101	Engineering Graphics	AE, CE, ME
ENG112	English Language	HSS
HSS-I (1)	Humanities-I	HSS, ECO
ESC201*	Electronics	EE
TA201*	Manufacturing Lab	MSE
TA202*	Mechanical Lab	ME
COM200	Communication	CE, IME, HSS, ES, ECO
HSS-I (2)	Humanities-I	HSS
HSS-II	Humanities-II	HSS, ECO
ESO201	Thermodynamics	AE, CHE, ME
ESO202	Mechanics of Solids	AE, CE, ME
ESO203*	Intro Electrical Engg.	EE
ESO204	Mechanics of Fluids	AE, CHE, ME
ESO205*	Nature of Materials	CHE, MSE,
ESO206	Biotechnology	BSBE
ESO207	Data Structures	CSE
ESO208	Numerical Methods	CHE, CE, ME
ESO209	Dynamics	AE, ME
ESO213	Fundamentals of ES	ES
MSO202a	Complex Analysis	CE, ME, MTH, EE, AE
MSO203b	Partial Diff. Eqns.	AE, CE, ME, MSE, MTH, EE
MTH102R	Mathematics-II	MTH
CHM102R	General Chemistry	CHM

Note: Table is constructed largely using data from previous years.

Courses shifted to even semester

*Courses where lab credits are shifted to even semester

2. Estimate of Number of Students in Core Courses in First (I) Semester during the Year 2020-21

Course Group	Course No.	Course title	Estimated number of New students	No. of students having fail backlogs	No. of students registered in 2019-20-I	Final estimate for 2020-21–I
First Semester Courses	CHM101#	Chemistry Lab	600	00	493	600
	MTH101	Mathematics-I	1200	50	1036	1300
	PHY101#	Physics Lab	600	02	522	600
	PHY102	Physics-I	600	45	540	650
	PHY103	Physics-II	600	56	595	650
	ESC101	Fundamental Computing	600	00	519	600
	LIF101	Life Sciences	600	13	584	625
	TA101	Engineering Graphics	600	05	527	600
	ENG112	English Language	160	02	120	160
Third Semester Courses	ESC201*	Introduction to Electronics	500	33	496	535
	TA201*	Manufacturing Lab	1000	02	477	1000
	TA202*	Mechanical Lab	1000	35	441	1000
	COM200	Communication Skill	700	05	585	700
HSS Courses	HSS-I (1st year)	Humanities-I	1050	-	1050	1050
	HSS-I (2nd year)	Humanities-I	650	-	-	650
	HSS -11	Humanities-II	1200	-	-	1200
Engineering Science Options	ESO201	Thermodynamics	357	23	270	400
	ESO202	Mechanics of Solids	280	22	200	300
	ESO203*	Introduction Elect. Engg.	50	02	50	50
	ESO204	Fluid Mech.	330	18	343	350
	ESO205*	Properties of Materials	180	05	178	210
	ESO206	Biotechnology	120	29	115	150
	ESO207	Data Structures	180	15	304	250
	ESO208	Numerical Methods	350	10	387	375
	ESO209	Dynamics	210	20	218	240
	ESO213	Fundamentals of ES	120	25	254	150
Science Options	MSO202a	Complex Analysis	350	35	309	400
	MSO203b	Partial Differential Eqns.	550	60	512	610

Repeat	MTH102A	Mathematics-II	-	-	09	09
	CHM102A	Gen. Chemistry	-	-	05	05

[#] Courses shifted to even semester

*Courses where lab credits are shifted to even semester

TA201 and TA202 will be offered to the entire batch (~1000 students)

3. Core Course Teaching Support Requirement in First (I) Semester during the Year 2020-21

Course(s)	Course No.	Course title	Credits	Estimated No. of students	Students per Section (approx.)	No. of sections	Theory tutors	Lab. tutors	Instruction units	Total (Instruction and tutorial/lab) units
First Semester Courses	~~CHM101#~~	~~Chemistry Lab~~	~~0-0-3 [03]~~	~~600~~	~~38~~	~~16~~	~~--~~	~~16~~	~~1.0~~	~~17.0~~
	MTH101	Mathematics-I	3-1-0 [11]	1300	100	12	12	--	4.0	16.0
	~~PHY101#~~	~~Physics Lab~~	~~0-0-3 [03]~~	~~600~~	~~38~~	~~16~~	~~--~~	~~16~~	~~1.0~~	~~17.0~~
	PHY102	Physics-I	3-1-0 [11]	600	100	06	06	--	4.0	10.0
	PHY103	Physics -II	3-1-0 [11]	600	100	06	06	--	4.0	10.0
	ESC101	Fund. Of Computing	3-1-3 [14]	600	38	16	16	16	4.0	20.0
	LIF101	Life Sciences	2-0-0 [06]	600	-	--	--	--	3.0	03.0
	TA101	Engineering Graphics	2-0-3 [09]	600	38	16	--	16	3.0	19.0
	ENG112	English Language	3-1-0 [11]	160	40	04	04	--	2.0	06.0
	HSS-I (1)	Humanities-I	3-1-0-[11]	1050	40	26	26	--	4.0	30.0
Third Semester Courses	ESC201*	Electronics	3-1-~~3~~[~~14~~11]	550	35	16	16	~~16~~	2.0	18.0
	TA201*	Manufact. Proc. (MSE)	1-0-~~3~~ [~~06~~03]	~~500~~ 1000	200	05	05	~~05~~	2.0	~~06.0~~ 7.0
	TA202*	Mechanical Lab. (ME)	1-0-~~3~~ [~~06~~03]	~~500~~ 1000	200	05	05	~~05~~	2.0	~~06.0~~ 7.0
	COM200	Communication Skills	1-0-2 [05]	700	40	18	--	18	1.0	19.0
	HSS-I (2)	Humanities-I	3-1-0 [11]	600	38	16	16	--	4.0	20.0
HSS-2	HSS-II	Humanities-II	3-0-0 [09]	1200	-	-	-	--	4.0	04.0
Engg. Science Options	ESO201	Thermodynamics	3-1-0 [11]	400	40	10	10	--	2.0	12.0
	ESO202	Mechanics of Solids	3-1-0 [11]	300	38	08	08	--	2.0	10.0
	ESO203*	Intro. Electrical Engg.	3-1-~~2~~ [~~13~~11]	50	35	02	02	~~02~~	1.0	03.0
	ESO204	Fld. Mech. and Rate Proc.	3-1-0 [11]	350	35	10	10	--	2.0	12.0
	ESO205*	Nat. and Prop. of Mat.	3-1-~~3~~ [~~14~~11]	210	35	06	06	~~06~~	2.0	08.0
	ESO206	Biotechnology	3-0-0 [9]	150	-	-	--	--	2.0	02.0
	ESO207	Data Structures	3-0-0 [09]	250	-	-	--	--	2.0	02.0
	ESO208	Numerical Methods	3-1-0 [11]	375	40	10	10	--	2.0	12.0
	ESO209	Dynamics	2-1-0 [08]	240	40	06	06	--	1.5	07.5
	ESO213	Fundamentals of ES	3-0-0 [09]	150		--	--	--	2	02.0
Science Options	MSO202a	Complex Analysis	3-1-0 [6]	400	100	05	05/2=2.5	--	1.0	03.5
	MSO203b	Partial Diff. Equations	3-1-0 [6]	610	100	07	07/2=3.5	--	2.0	05.5
Repeat	MTH102R	Mathematics-II	3-1-0 [11]	09	35	01	01	--	1.0	02.0
	CHM102R	General Chemistry	2-1-0 [08]	05	35	01	01	--	1.0	02.0
		Total Units Required =		Science Units =		Engineering Science Units =		Other Units =		

Note:

1. When a course has tutorials and lab, then the tutor is supposed to take care of both.

2. Instruction Units:

   Only lab course: 1.0; Lecture Course (class size < 60): 1.0;

   Lecture Course (60 _class size < 150): 1.5; Lecture Course (150 _class size < 600): 2.0 (3 lec/wk), 1.5 (2 lec/wk), 1.0 (1 lec/wk);

   Lecture Course (600 _class size): 4.0 (3 lec/wk), 3.0 (2 lec/wk), 2.0 (1 lec/wk); Tutorials: 1.0

3. TA201 lab capacity is 90 and it is split into 3 sections. One instructor handles all the 3 sections simultaneously. In all other courses the section size may be increased by at most 5.

4. Department/IDP-wise Breakup of Instructor's and/or Tutors for Core Courses in First (I) Semester during the Year 2020-21

Course No.	Course Name	Units Req.	AE	BSBE	CHE	CE	CSE	EE	IME	ME	MSE	CHM	MTH	PHY	HSS	ES	ECO	TOTAL
~~CHM 101#~~	~~Chemistry Lab~~	~~17.0~~										1+16						~~1+16~~
MTH 101	Mathematics-I	16.0											4+12					4+12
~~PHY101#~~	~~Physics Lab~~	~~17.0~~												1+16				~~1+16~~
PHY102	Physics-I	10.0												4+6				4+6
PHY103	Physics -II	10.0												4+6				4+6
ESC101	Fund. Of Computing	20.0					4+16											4+16
LIF101	Life Sciences	03.0		3+0														3+0
TA101	Engineering Graphics	20.0	0+3			0+6				3+7								3+16
ENG112	English Language	06.0													2+4			2+4
HSS-I (1)#	Humanities-I (*)	30.0													3+21		1+5	4+26
HSS-II	Humanities-II (*)	04.0													3+0		1+0	4+0
ESC201*	Electronics	18.0						2+16										2+16
TA201*	Manufact. Proc. (MSE)	~~06.0~~ 7.0									2+5							2+5
TA202*	Mechanical Lab (ME)	~~06.0~~ 7.0								2+5								2+5
COM200	Communication Skills	19.0							0+12						1+3	0+2	0+1	1+18
HSS-I (2)#	Humanities-I	20.0													4+16			4+16
ESO201	Thermodynamics	12.0	0+3		2+4					0+3								2+10
ESO202	Mechanics of Solids	10.0	0+2			2+4				0+2								2+8
ESO203*	Intro. Electrical Engg.	03.0						1+2										1+2
ESO204	Fld. Mech. and Rate	12.0	2+5		0+3					0+2								2+10
ESO205*	Nat. and Prop. of Mat.	08.0				0+1					2+5							2+6
ESO206	Biotechnology	02.0		2+0														2+0
ESO207	Data Structures	02.0					2+0											2+0
ESO208	Numerical Methods	12.0			0+3	2+5				0+2								2+10
ESO209	Dynamics	07.5	0+2							1.5+4								1.5+6
ESO213	Fundamentals of ES	02.0														2+0		2+0
MSO202a	Complex Analysis$	03.0	0+1 (0.5)					0+2 (1.0)		0+1 (0.5)				1				1+2
MSO203b	Partial Diff. Equations$	5.5	0+1 (0.5)			0+1 (0.5)		0+2 (1.0)		0+1 (0.5)	0+1 (0.5)		2+1(0.5)					2+3.5
MTH102A	Mathematics-II	02.0												1+1				1+1
CHM102A	General Chemistry	02.0										1+1						1+1
Total Load Assigned		306	18	5	13	19.5	22	23	12	32.5	14.5	2.0	21.5	20	57	4	8	272
Approximate Faculty Strength		-	28	19	23	40	32	46	17	41	26	37	47	41	28	10	13	448
Ratio of Load Assigned: Faculty			0.64	0.26	0.56	0.49	0.69	0.5	0.71	0.79	0.56	0.05	0.46	0.49	2.03	0.4	0.61	0.61

- Units are assigned as 'm + n', where 'm' indicate instructor units and 'n' indicates tutor units.
- $ The unit assigned is halved for half semester courses
- Economic Sciences shall offer one HSS I and one HSS II each semester.

Courses shifted to even semester
*Courses where lab credits are shifted to even semester
TA201 and TA202 will be offered to the entire batch (~1000 students)

Appendix

Important Information Regarding Individual Section Sizes for Various Courses and Work Load

1. Tutorial section sizes have been fixed based on last year's SCCC data/report and with inputs from respective HODs.
2. One tutor will be assigned per section (normally 35 students) for PHY101 and CHM101 laboratory sessions.
3. One tutor will be assigned per day (i.e., per three sections, i.e., ~ 90 students) for TA201 and TA202 labs.
4. Tutors assigned for ESC101, ESC201, ESO203 and ESO205 tutorials will also take care of the laboratory sessions of the same sections.
5. Increasing the number of sections in any course is undesirable.
6. Student number in each section may be increased slightly, i.e., up to 40 in sections normally having 35 students and up to 110 in sections normally having 100 students to prevent increase in the number of sections.
7. The total registration in some courses has to be restricted considering seating capacity of the lecture hall assigned for the course.
8. The number of sections in some ESO/SO courses may be reduced in certain cases after registration, in case the number of students registered is less than expected.

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