

## REPORT OF CORE CURRICULUM COMMITTEE First (I) Semester of the Year 2019-20

### 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	Department			
	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, CHM102R, CSO201, CSO202
CE	ESO208
CSE	ESC101, ESO207
EE	ESC201, ESO203
ES	ESO213
HSS	ENG112, COM200
ME	TA202, ESO209
MSE	TA201, ESO205
MTH	MTH101, MTH101R, MTH102, MTH102R, MSO201, MSO202a, MSO203b
PHY	PHY101, PHY102, PHY103, PSO201

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
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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	ME, MTH, EE, AE
MSO203b	Partial Diff. Eqns	AE, CE, ME, MSE, MTH, EE
MTH102R	Mathematics-II	MTH
CHM102R	General Chemistry	CHM

Note: Table constructed largely using data from previous years.

## 2. Estimate of Number of Students in Core Courses in First (I) Semester during the Year 2019-20

Course Group	Course No.	Course Name	Estimated Number of New Students	No. of Students having Failed backlogs	No. of Students Registered in 2018-19-I	Final Estimate for 2019-20 – I
	CHM101	Chemistry Lab	490	00	432	490
	MTH101	Mathematics-I	980	60	910	1040



<b>First Semester Courses</b>	PHY101	Physics Lab	490	02	462	492
	PHY102	Physics-I	490	45	472	540
	PHY103	Physics-II	490	56	440	550
	ESC101	Fundamental Computing	490	00	460	490
	LIF101	Life Sciences	490	13	440	505
	TA101	Engineering Graphics	490	05	469	495
	ENG112	English Language	120	02	428	120
<b>Third Semester Courses</b>	ESC201	Introduction to Electronics	450	33	463	485
	TA201	Manufacturing Lab	450	02	450	452
	TA202	Mechanical Lab	450	35	418	485
	COM200	Communication Skill	595	05	577	600
<b>HSS Courses</b>	HSS-I(1st year)	Humanities-I	880	50		930
	HSS-I(2nd year)	Humanities-I	450			450
	HSS -11	Humanities-II	1400			1400
<b>Engineering Science Options</b>	ESO201	Thermodynamics	350	23	383	380
	ESO202	Mechanics of Solids	225	22	207	250
	ESO203	Introduction Elect. Engg.	30	02	23	30
	ESO204	Fluid Mech.	250	18	289	300
	ESO205	Properties of Materials	150	05	169	185
	ESO206	Biotechnology	100	29	117	130
	ESO207	Data Structures	150	15	309	210
	ESO208	Numerical Methods	280	10	327	350
	ESO209	Dynamics	175	20	208	225
	ESO213	Fundamentals of ES	100	25	181	125
<b>Science Options Repeat</b>	MSO202a	Complex Analysis	365	35	302	400
	MSO203b	Partial Differential Eqns	535	55	502	600
	MTH102R	Mathematics-II		--	09	09
	CHM102R	Gen. Chemistry		--	05	05

### 3.Core Course Teaching Support Requirement in First (I) Semester during the Year 2019-20

Course(s)	Course No.	Course Name	Units	Estimated No. of Students	Students per section(App)	No. of Sections		Instruction Units	Total (Instruction and Tutorial/Lab) Units
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					x)		Theory Tutors	Lab. Tutors		
First Semester Courses	CHM 101	Chemistry Lab	0-0-3 [03]	490	35	14		14	1	15
	MTH 101	Mathematics-I	3-1-0 [11]	1040	100	10	10		4	14
	PHY101	Physics Lab	0-0-3 [03]	492	35	14		14	1	15
	PHY102	Physics-I	3-1-0 [11]	540	100	5	5		2	7
	PHY103	Physics -II	3-1-0 [11]	550	100	5	5		2	7
	ESC101	Fund. Of Computing	3-1-3 [14]	490	35	14	14		2	16
	LIF101	Life Sciences	2-0-0 [06]	505	-	-			1.5	1.5
	TA101	Engineering Graphics	2-0-3 [09]	495	35	14		14	1.5	15.5
	ENG112	English Language	3-1-0 [11]	120	35	3	3		1.5	4.5
	HSS-I (1)	Humanities-I	3-1-0-[11]	880	40	22	22		4	26
Third Semester Courses	ESC201	Electronics	3-1-3 [14]	485	35	14	14	14	2	16
	TA201	Manufact. Proc. (MSE)	1-0-3 [06]	452	90	5		5	1	6
	TA202	Manufact. Proc. (ME)	1-0-3 [06]	485	100	5		5	1	6
	COM200	Communication Skills	1-0-2 [05]	600	35	17		17	1	18
	HSS-I (2)	Humanities-I	3-1-0 [11]	450	35	13	13		2	15
HSS-2	HSS-II	Humanities-II	3-0-0-[09]	1400	-	-	-	-	4	4
Engineering Science Options	ESO201	Thermodynamics	3-1-0 [11]	380	40	9	9		2	11
	ESO202	Mechanics of Solids	3-1-0 [11]	250	35	7	7		2	9
	ESO203	Intro. Electrical Engg.	3-1-2 [13]	40	35	1	1	1	1	2
	ESO204	Fld. Mech. and Rate Proc.	3-1-0 [11]	300	35	9	9		2	11
	ESO205	Nat. and Prop. of Mat.	3-1-3 [14]	185	35	5	5	5	2	7
	ESO206	Biotechnology	3-1-0 [11]	130	35	4	4		1.5	5.5
	ESO207	Data Structures	3-0-0 [09]	210	-	-	-	-	2	2
	ESO208	Numerical Methods	3-1-0 [11]	350	40	9	9		2	11
	ESO209	Dynamics	2-1-0 [08]	225	40	5	5		1.5	6.5
	ESO213	Fundamentals of ES	3-0-0 [09]	125		-	-		1.5	1.5
Science Options	MSO202a	Complex Analysis	3-1-0 [6]	400	100	4	4/2=2		1	3
	MSO203b	Partial Diff. Equations	3-1-0 [6]	600	100	6	6/2=3		2	5
Repeat	MTH102R	Mathematics-II	3-1-0 [11]	09	35	1	1		1	2
	CHM102R	General Chemistry	2-1-0 [08]	05	35	1	1		1	2

Total Units Required 257 ; 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 2019-20



Course No.	Course Name	Units Reqd	AE	BSBE	CHE	CE	CSE	EE	IME	ME	MSE	CHM	MTH	PHY	HSS	ES	ECO	TOTAL
CHM 101*	Chemistry Lab	15										1+14						1+14
MTH 101	Mathematics-I	14											4+10					4+10
PHY101	Physics Lab	15												1+14				1+14
PHY102	Physics-I	7												2+5				2+5
PHY103	Physics -II	7												2+5				2+5
ESC101	Fund. Of Computing	16					2+14											2+14
LIF101	Life Sciences	1.5		1.5+0														1.5+0
TA101	Engineering Graphics	15.5	0+3			1.5+7				0+4								1.5+ 14
ENG112	English Language	4.5													1.5+3			1.5+3
HSS-I (1)#	Humanities-I(*)	26													3+18		1+4	4+22
HSS-II	Humanities-II(*)	4													3+0		1+0	4+0
ESC201	Electronics	16					2+14											2+14
TA201	Manufact. Proc. (MSE)	6									1+5							1+5
TA202	Manufact. Proc. (ME)	6								1+5								1+5
COM200	Communication Skills	18				0+1			0+10						1+4	0+1	0+1	1+17
HSS-I (2)#	Humanities-I	15													2+13			2+13
ESO201	Thermodynamics	11	2+3		0+3					0+3								2+9
ESO202	Mechanics of Solids	9	0+2			0+3				2+2								2+7
ESO203	Intro. Electrical Engg.	2						1+1										1+1
ESO204	Fld. Mech. and Rate Proc.	11	0+4		2+2					0+3								2+9
ESO205	Nat. and Prop. of Mat.	7			0+1						2+4							2+5
ESO206	Biotechnology	5.5		1.5+4														1.5+4
ESO207	Data Structures	2					2+0											2+0
ESO208	Numerical Methods	11			0+3	2+4				0+2								2+9
ESO209	Dynamics	6.5	0+1							1.5+4								1.5+5
ESO213	Fundamentals of ES	1.5														1.5+0		1.5+0
MSO202a	Complex Analysis	3	0+1 (0+0.5)					0+2 (0+1)		0+1 (0+0.5)			1+0 (1+0)					1+2

MISO203D	Partial Diff. Equations	5	0+1 (0+0.5)			0+1 (0+0.5)		0+1 (0+0.5)		0+1 (0+0.5)	0+1 (0+0.5)		2+1 (2+0.5)					2+3
MTH102R	Mathematics-II	2											1+1					1+1
CHM102R	General Chemistry	2										1+1						1+1
<b>Total Load Assigned</b>			<b>16</b>	<b>7</b>	<b>11.5</b>	<b>19</b>	<b>18</b>	<b>19.5</b>	<b>10</b>	<b>28.5</b>	<b>12.5</b>	<b>17</b>	<b>19.5</b>	<b>29</b>	<b>48.5</b>	<b>2.5</b>	<b>7</b>	
<b>Approximate Faculty Strength</b>			<b>27</b>	<b>17</b>	<b>20</b>	<b>37</b>	<b>33</b>	<b>44</b>	<b>16</b>	<b>40</b>	<b>24</b>	<b>32</b>	<b>42</b>	<b>39</b>	<b>27</b>	<b>9</b>	<b>14</b>	
<b>Ratio of Load Assigned : Faculty</b>			<b>0.59</b>	<b>0.41</b>	<b>0.57</b>	<b>0.51</b>	<b>0.54</b>	<b>0.44</b>	<b>0.62</b>	<b>0.71</b>	<b>0.52</b>	<b>0.53</b>	<b>0.46</b>	<b>0.74</b>	<b>0.55</b>	<b>0.27</b>	<b>0.5</b>	

- 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.

## Appendix

### **A.1: 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.
9. It is noted that although the total Instruction Units for CHM101 is 15.0, CHM slots these labs four days a week with slightly increased involvement of Tutors.

  
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