

Course Template as per New UGARC

Template for 1st year (1st and 2nd semester)

Course template for first and second semesters for all BT/BS students			
Group 1		Group 2	
Semester 1	Semester 2	Semester 2	Semester 1
SCHEME-1 [9 credits] ELC111/ELC112/ELC113*	ETH111 [6 credits]**	ETH 111 [3 credits]**	SCHEME-1 [9 credits] ELC112/ELC113*
MTH 111 [6 credits]	MTH 113 [6 credits]	MTH 111 [6 credits]	MTH 113 [6 credits]
MTH 112 [6 credits]	MTH 114 [6 credits]	MTH 112 [6 credits]	MTH 114 [6 credits]
PHY 113 [11 credits]	PHY 112 [11 credits]	PHY 112 [11 credits]	PHY 113 [11 credits]
PHY 111 [3 credits]	CHM 111 [3 credits]	CHM 111 [3 credits]	PHY 111 [3 credits]
TA 111 [9 credits]	ESC 111 [7 credits]	ESC 111 [7 credits] \$\$	TA 111 [9 credits]
CHM 112 [4 credits]	ESC 112 [7 credits] \$\$	ESC 112 [7 credits]	CHM 112 [4 credits]
CHM 113 [4 credits]	LIF 111 [6 credits]	LIF 111 [6 credits]	CHM 113 [4 credits]
PE 111 [3 credits]	PE 112 [3 credits]	PE 111 [3 credits]	PE 112 [3 credits]
Total = 55	Total = 52	Total = 52	Total = 55

*: Please see details I the section of English courses.

** : UGARC originally proposed this as 0 credit course, however the implementation committee after deliberations proposes 3 credits for the course. Please see the section of Practical ethics for details.

\$\$: Or any other equivalent computing course offered by other departments.

20.1 Template for BS program in Physics (For Y22 to Y24)

Template for 3 rd to 8 th semester for BS program in Physics					
Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
SCHEME-2 EME (9-11)	SCHEME-3 HSS-I (9-11)	SCHEME-4 HSS-II (9)	SCHEME-5 HSS-II (9)	SCHEME-6 HSS-II (9)	
PHY224 (12)	ESC201 (14)	PHY315 (9)	PHY412 (11)	PHY461 (8)	DE-5/UGP-3 (9)
E/SO-1(12) (MSO202M [§] , MSO203M [§])	PSO201(8)	PHY401 [^] (11)	DE-2 (9-12) (PHY617 [§])	DE-3/UGP-2 (9)	DE-6 (9)
OE-1 (9)	PHY210M (6)	PHY431 (11)	PHY552 (11)	DE-4 (9)	DE-7 (9)
PHY421 [^] (11)	PHY226M (6)	DE-1 (9)	OE-2 (9)	OE-3 (9)	OE-5 (9)
	E/SO-2(9-11) (MSO201 [§])	PHY888(3) (S/X)	UGP-1 (4) (Optional)	OE-4 (9)	OE-6 (9)
53-55	52-56	52	49-52	53	45

[§] These courses are suggested; however, students can take other courses in the E/SO basket also such that total credits including PSO201 is at least 28.

[^] For Y22 and Y23 batches, the semester-wise order of these courses is swapped.

Course type	Credits in the department template
Institute Core (IC)	112
E/SO	28
Department requirements	149 (99 DC + 63-65 DE)
Open electives (OE)	54
SCHEME	54-58
Total for 4-year BT/BS	410-416

20.2 Template for BSH program in Physics

Template for 3 rd to 8 th semester for BSH program in Physics					
Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
SCHEME-2 EME (9-11)	SCHEME-3 HSS-I (9-11)	SCHEME-4 HSS-II (9)	SCHEME-5 HSS-II (9)	SCHEME-6 HSS-II (9)	
PHY224 (12)	ESC201 (14)	PHY315 (9)	PHY412 (11)	PHY461 (8)	UGP-3 (9)
E/SO-1(12) (MSO202M [§] , MSO203M [§])	PSO201(8)	PHY401 [^] (11)	DE-2 (9-12) (PHY617 [§] - old PHY473A)	DE-3 (9)	DE-4 (9)
OE-1 (9)	PHY210M (6)	PHY431 (11)	PHY552 (11)	UGP-2 (9)	DE-5 (9)
PHY421 [^] (11)	PHY226M (6)	DE-1 (9)	OE-2 (9)	OE-3 (9)	OE-5 (9)
	E/SO-2(9-11) (MSO201 [§])	PHY888(3) (S/X)		OE-4 (9)	OE-6 (9)

			DEH-1 (9-11)	DEH-2 (9-11)	DEH-3 (9-11)
53-55	52-56	52	58-64	62-64	54-56

§ These courses are suggested; however, students can take other courses in the E/SO basket also such that total credits including PSO201 is at least 28.

^ For Y22 and Y23 batches, the semester-wise order of these courses is swapped.

- DEH from the basket of: PHY626A(432A), PHY625A(422A), PHY611A (PHY526A), PHY612A(524A), PHY623A(543A), PHY628A, PHY685 (PHY681A) (Old course numbers in bracket)
- CPI criteria for BSH: 8.5

20.3 Template for BSM program in Physics

Template for 3 rd to 8 th semester for BSM program in Physics					
Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
SCHEME-2 EME (9-11)	SCHEME-3 HSS-I (9-11)	SCHEME-4 HSS-II (9)	SCHEME-5 HSS-II (9)	SCHEME-6 HSS-II (9)	
PHY224 (12)	ESC201 (14)	PHY315 (9)	PHY412 (11)	PHY461 (8)	DE-3 (9-11)
E/SO-1(12) (MSO202M [§] , MSO203M [§])	PSO201 (8)	PHY401 [^] (11)	DE-1 (9-11)	DE-2 (9-11)	DE-4 (9-11)
OE-1 (9)	PHY210M (6)	PHY431 (11)	PHY552 (11)	OE-3 (9)	MTB-4 (9)
PHY421 [^] (11)	PHY226M (6)	OE-2 (9)	MTB-1 (9)	MTB-2 (9)	MTB-5 (9)
	E/SO-2(9-11) (MSO201 [§])	PHY888(3) S/X	UGP-1 (4) (Optional)	MTB-3 (9)	MTB-6 (9)
53-55	52-56	52	51	53	46

§ These courses are suggested; however, students can take other courses in the E/SO basket also such that total credits including PSO201 is at least 28.

^ For Y22 and Y23 batches, the semester-wise order of these courses is swapped.

- The MTB courses would be taken from a basket as suggested by DoMS.

20.4 Template for five-year dual-degree program

BS Template for 3 rd to 8 th semester							
Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8	Semester 9	Semester 10
SCHEME-2 EME (9-11)	SCHEME-3 HSS-I (9-11)	SCHEME-4 HSS-II (9)	SCHEME-5 HSS-II (9)	SCHEME-6 HSS-II (9)		DEPG-1 [9]	DEPG-2 [9]
PHY224 (12)	ESC201 (14)	PHY315 (9)	PHY412 (11)	PHY461 (8)	DE-5/ UGP-3 (9)	OEPG-1 [9]	OEPG-2 [9]

BS Template for 3 rd to 8 th semester								
Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8	Semester 9	Semester 10	
E/SO-1(12) (MSO202M [§] , MSO203M [§])	PSO201(8)	PHY401 [^] (11)	DE-2 (9- 12) (PHY617 [§] - old PHY473A)	DE-3 (9)	DE-6 (9)	PHY563 [9]	PHY566 [9]	
OE-1 (9)	PHY210M (6)	PHY431 (11)	PHY552 (11)	DE-4 / UGP-2 (9)	DE-7 (9)	PHY565 [9]	PHY568 [9]	
PHY421 [^] (11)	PHY226M (6)	DE-1 (9)	OE-2 (9)	OE-3 (9)	OE-5 (9)			
	E/SO-2(9- 11) (MSO201 [§])	PHY888 (3) S/X	UGP-1 (4) (Optional)	OE-4 (9)	OE-6 (9)			
53-55	52-56	52	49-52	53	45	40	40	

[§] These courses are suggested; however, students can take other courses in the E/SO basket also such that total credits including PSO201 is at least 28.

[^] For Y22 and Y23 batches, the semester-wise order of these courses is swapped.

BS-MS: UG-requirements: (old course numbers in bracket)

1. Category A: PHY625A(422A)/PHY692A; PHY626A(432A); PHY462; 1 of the *DE
2. Category B: PSO201/PHY114; PHY210M (or an equivalent course); PHY226M; PHY401; PHY412; 1 of the *DE; PHY552; PHY421 (or an equivalent course); PHY625A(422A)/PHY692A; PHY431; PHY626A(432A); PHY461; PHY462.
3. *DE courses: PHY611A (PHY526A), PHY612A (PHY524A), PHY623A(543A), PHY628A, PHY681A.

20.5 Template for the double major: second major in Physics

PSO201/PHY114; PHY210M (or an equivalent course); PHY226M; PHY401; PHY412; PHY552; PHY421 (or an equivalent course); PHY431; PHY461

20.6 Minors in Physics

1. Quantum Mechanics: PSO 201/PHY114, PHY210M, PHY226M, PHY431
2. Statistical Mechanics: PSO201/PHY114, PHY210M, PHY226M, PHY412
3. Soft Matter: PHY210M, PHY205M, PHY412, PHY628
4. Gravity: PSO 201/PHY114, PHY210M, PHY226M, PHY407