

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 in 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.

20.7 Template for BS program in Physics (For Y25 and later)

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-3/UGP-3 (9)
E/SO-1(12) (MSO202M [§] , MSO203M [§] , PSO203M [§])	OE-1 (9)	PHY401 (11)	DE-1 (9-12) /UGP-1 (9) (PHY617 [§])		DE-4 (9)
PSO201(8)	PHY211 (11)	PHY431 (11)	PHY552 (11)	DE-2/UGP-2 (9)	DE-5 (9)
PHY226M (6)		PHY421 (11)	OE-2 (9)	OE-3 (9)	OE-5 (9)
	E/SO-3(9-11) (MSO201 [§])	PHY888(3) (S/X)		OE-4 (9)	OE-6 (9)
47-49	52-56	54	49	44	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.

*PSO203M will be considered as DE for PHY students if they do it over and above the minimum ESO/SO requirements.

NOTE: Y25s and later can credit up to 3 UGPs towards their graduation requirements

Course type	Credits in the department template
Institute Core (IC)	112
E/SO	28
Department requirements	149 (104 DC + 45 DE)
Open electives (OE)	54
SCHEME	54-58
Total for 4-year BT/BS	397-403

21.2 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 [§] , PSO203M [§])	OE-1 (9)	PHY421 (11)	DE-1 (9-12) /UGP-1 (9) (PHY617 [§])	DE-2 (9)	DE-3 (9)
PSO201(8)	PHY211 (11)	PHY431 (11)	PHY552 (11)	UGP-2 (9)	
PHY226M (6)		PHY401 (11)	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)
47-49	52-56	54	58-63	62-64	45-47

[§] 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.

- DEH from the basket of: PHY626, PHY625, PHY611, PHY612, PHY623, PHY628, PHY685
- CPI criteria for BSH: 8.5
- Doing UGP-2 and UGP-3 is mandatory for fulfilling BSH requirements.

21.3 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)	OE-2 (9)
E/SO-1(12) (MSO202M [§] , MSO203M [§] , PSO203M [§])	OE-1 (9)	PHY421 (11)	DE-1 (9-11)	DE-2 (9-11)	OE-3 (9)
PHY226M (6)	PHY211 (11)	PHY431 (11)	PHY552 (11)		MTB-4 (9)
PSO201 (8)		PHY401 (11)	MTB-1 (9)	MTB-2 (9)	MTB-5 (9)
	E/SO-2 (9-11) (MSO201 [§])	PHY888(3) (S/X)		MTB-3 (9)	MTB-6 (9)
47-49	52-56	54	49-51	45-47	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.

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

20.10 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]	

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
PHY224 (12)	ESC201 (14)	PHY315 (9)	PHY412 (11)	PHY461 (8)	DE-4/ UGP-2 (9)	OEPG-1 [9]	OEPG-2 [9]
E/SO-1(12) (MSO202M [§] , MSO203M [§] , PSO203M [§])	OE-1 (9)	PHY421 (11)	DE-1 (9- 12) (PHY617 [§])	DE-2 (9)	DE-5 (9)	PHY563 [9]	PHY566 [9]
PSO201 (8)	PHY211 (11)	PHY431 (11)	PHY552 (11)	DE-3/ UGP-1 (9)	OE-4 (9)	PHY565 [9]	PHY568 [9]
PHY226M (6)		PHY401 (11)	OE-2 (9)	OE-3 (9)	OE-5 (9)		
	E/SO-2(9-11) (MSO201 [§])	PHY888 (3)			OE-6 (9)		
47-49	52-56	54	49-52	44	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.

BS-MS: UG-requirements:

1. Category A: PHY625/PHY692; PHY626; PHY462; 1 of the *DE
2. Category B: PSO201/PHY114; PHY211 (or an equivalent course); PHY226M; PHY401; PHY412; 1 of the *DE; PHY552; PHY421 (or an equivalent course); PHY625/PHY692; PHY431; PHY626; PHY461; PHY462.
3. *DE courses: PHY611, PHY612, PHY623, PHY628, PHY685

20.11 Template for the double major: second major in Physics

PSO201/PHY114; PHY211 (or an equivalent course); PHY226M; PHY401; PHY412; PHY552; PHY421 (or an equivalent course); PHY431; PHY461

20.12 Minors in Physics

Title of Minor	Course Requirements	Credits
Quantum Mechanics	PSO201/PHY114, PHY431, PHY302/PHY626/PHY643	28-33
Statistical Mechanics	PSO201/PHY114, PHY211, PHY412	30-33
Gravity	PHY112/PHY113/PHY115, PHY226M, PHY407	28
Soft Matter	PSO203M, PHY412, PHY628	28