

Templates for programs Statistics and Data Sciences (SDS)

Template for the BS program in Statistics and Data Sciences

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
SCHEME-1 (9) ELC111/ELC112/ELC113 *	ETH111 (3) **	SCHEME-2 HSS-I (9-11)	SCHEME-3 EME (9-11)	MTH442 (10)	SCHEME-4 HSS-II (9)	SCHEME-5 HSS-II (9)	SCHEME-6 HSS-II (9)
MTH 111 (6)	MTH 113 (6)	ESC201 (14)	MTH211 (11)	MTH441 (10)	MTH422 (10)	DE-1 (9)	DE-4 (9)
MTH 112 (6)	MTH 114 (6)	MTH301 (11)	MTH210 (10)	E/SO-3: ESO207 (12)	MTH314 (10)	DE-2 (9)	DE-5 (9)
PHY 115 (11)	PHY 114 (11)	ESO/SO-1: MSO205 (11)	MTH212M (06) Modular 1st half)	E/SO-4 MSO202M (6)	MTH312 (5)	DE-3 (9)	OE-5 (9)
PHY 111 (3)	CHM 111 (3)	MTH207M (6)	MTH209 (5)		MTH443 (10)	OE-3 (9)	OE-6 (9)
TA 111 (9)	ESC 111 (7)	MTH208 (05)	ESO/SO-2 (9)	OE-1 (09)	OE-2 (09)	OE-4 (9)	
CHM 112 (4)	ESC 112 (7)						
CHM 113 (4)	LIF111 (6)						
PE111 (3)	PE112 (3)						
55	52	56-58	50-52	47	53	54	45

- Note 1: UGPs are NOT mandatory. However, depending on the consent of supervisor(s), a student may take up to 3 UGPs of 09 credits each against DE/OE (UGP will be counted as OE if taken outside the department as consented by the DUGC) requirements. A student can also take a 4th UGP, that however will NOT be counted towards fulfilling the graduation requirements.
- Note 2: (As per the existing Senate approved program) Up to 45 credits of internships in lieu of open electives can be taken. This can be done through the courses MTH321 Internship I, MTH322 Internship II, MTH323 Internship III, MTH324 Internship IV, MTH325 Internship V, of 9 credits each. One would have an option to earn 45 credits of OE through internship courses by spending a full semester in an industry or may do online internships (under one or more OEs) from industry, spread across different semesters. The process for enrolling in the internship courses is as follows: the student identifies a viable internship opportunity in the general realm of statistics and data science and identifies a supervisor in the MTH department. The student, in consultation with the host industry/organization submits a proposal to the Department Undergraduate Committee (DUGC) with the approval of the industry liaison and the departmental supervisor, upon which it will be evaluated for approval and requisite number of credits (in multiples of 9) will be decided. The grading scheme for the internship courses will be S/X.
- DC courses of BS/MTH will be counted as Open Elective only for BS/SDS.

Credit table for BS program in Statistics and Data Sciences		
Course type	Allowable Credit	Credits in the department
Institute Core (IC)	112	112
E/SO	18-45	38
Department	144-179	154 (109 DC + 45 DE)
Open electives (OE)	51-57	54
SCHEME	54-58	54-58
Total for 4-year BT/BS	391-420	412-416

Template for the BSH program in Statistics and Data Sciences

Template for 3 rd to 8 th semester BSH program in Statistics and Data Sciences					
Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
SCHEME-2 HSS-I (9-11)	SCHEME-3 EME (9-11)	MTH442 (10)	SCHEME-4 HSS-II (9)	SCHEME-5 HSS-II (9)	SCHEME-6 HSS-II (9)
ESC201 (14)	MTH211 (11)	MTH441 (10)	MTH422 (10)	DE-1 (9)	DE-2 (9)
MTH301 (11)	MTH210 (10)	E/SO-3: ESO207 (12)	MTH314 (10)	OE-3 (9)	DE-3 (9)
ESO/SO-1: MSO205 (11)	MTH212M (06) Modular 1st half)	E/SO-4 MSO202M (6)	MTH312 (5)	OE-4 (9)	OE-6 (9)
MTH207M (6) (Modular 2nd half)	MTH209 (5)		MTH443 (10)	OE-5 (9)	UGP-2 (9)
MTH208 (05)	ESO/SO-2 (9)	OE-1 (09)	OE-2 (09)	UGP-1 (9)	
			DEH-1 (9)	DEH-2 (9)	DEH-3 (9)
56-58	50-52	47	62	63	54

- CPI Criterion for BSH: 8.5
- Note 1: A student may take additional UGP3 of 09 credits against DE/OE (UGP will be counted as OE if taken outside the department as consented by the DUGC) requirements. A student can also take a 4th UGP that however will NOT be counted towards fulfilling the graduation requirements.
- Note 2: (As per the existing Senate approved program) Up to 45 credits of internships in lieu of open electives can be taken. This can be done through the courses MTH321 Internship I, MTH322 Internship II, MTH323 Internship III, MTH324 Internship IV, MTH325 Internship V, of 9 credits each. One would have an option to earn 45 credits of OE through internship courses by pending a full semester in an industry or may do online internships (under one or more OEs) from industry, spread across different semesters. The process for enrolling in the internship courses is as follows: the student identifies a viable internship opportunity in the general realm of statistics and data science and identifies a supervisor in the MTH department. The student, in consultation with the host industry/organization submits a proposal to the Department Undergraduate Committee (DUGC) with the approval of the industry liaison and the departmental supervisor, upon which it will be evaluated for approval and requisite number of credits (in multiples of 9) will be decided. The grading scheme for the internship courses will be S/X.
- For BSH, student has to do 27 credits of DEH courses from the Honors course basket given below.
- UGP-1 and UGP-2 are mandatory UGPs for BSH
- DC courses of BS/MTH will be counted as Open Elective only for BS/SDS.

Template for BSM program in Statistics and Data Sciences

Template for 3 rd to 8 th semester BSM program in Statistics and Data Sciences					
Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
SCHEME-2 HSS-I (9-11)	SCHEME-3 EME (9-11)	MTH442 (10)	SCHEME-4 HSS-II (9)	SCHEME-5 HSS-II (9)	SCHEME-6 HSS-II (9)
ESC201 (14)	MTH211 (11)	MTH441 (10)	MTH422 (10)	DE-1 (9)	DE-2 (9)
MTH301 (11)	MTH210 (10)	E/SO-3: ESO207 (12)	MTH314 (10)	OE-2 (9)	OE-3 (9)
ESO/SO-1: MSO205 (11)	MTH212M (06) Modular 1st half)	E/SO-4 MSO202M (6)	MTH312 (5)	MTB-2 (9)	MTB-5 (9)
MTH207M (6) (Modular 2nd half)	MTH209 (5)		MTH443 (10)	MTB-3 (9)	MTB-6 (9)
MTH208 (05)	ESO/SO-2 (9)	OE-1 (09)	MTB-1 (9)	MTB-4 (9)	
56-58	50-52	47	53	54	45

- DC courses of BS/MTH will be counted as Open Elective only for BS/SDS.

Template for five-year dual-degree program in Statistics and Data Sciences

BS-MS PG Part – Category A (from the same program)					
COURSES					
IX Semester			X Semester		
MS Project – (PGP 1, PGP 2)		18	MS Project - (PGP 3, PGP 4)		18
DE PG - I		09	DE PG-II		09
OE PG - I		09	OE PG-III		09
OE PG - II		09	OE PG - IV		09
Total		45			45

Minimum credit requirement in MS part for graduation: 90

36 OE credits may be waived off in the UG requirements

DC courses of BS/MTH will be counted as Open Elective only for BS/SDS.

BS-MS PG Part – Category B (from other programs)				
UG Pre-Requisites				
Odd Semester			Even Semester	
MTH301 – Analysis I		11	MTH211 – Theory of Statistics	11
			MTH210 – Statistical Computing	10
MTH207M – (Modular) Matrix Algebra and Linear Estimation (module II)		06	MTH212M – (Modular) Elementary Stochastic Processes-I	06
MTH442- Time Series Analysis		10	MTH422-An Introduction to Bayesian Analysis	10
MTH441 – Linear Regression and ANOVA		10	MTH314 – Multivariate Analysis	10
MTH208 - Data Science Lab I		05	MTH443-Statistical & AI Techniques in Data Mining	10
			MTH209 – Data Science Lab II	05
			MTH312 – Data Science Lab III	05
Total		42		67
PG Requirement				
Odd Semester			Even Semester	
MS Project – (PGP 1, PGP 2)		18	MS Project - (PGP 3, PGP 4)	18
DE PG - I		09	DE PG-II	09
OE PG - I		09	OE PG-III	09
OE PG - II		09	OE PG - IV	09
Total		45		45

36 OE credits may be waived off in the UG requirements

Pre-requisite courses are mandatory for DD-B

DC courses of BS/MTH will be counted as Open Elective only for BS/SDS.

Minors in in Statistics and Data Sciences Statistics and Data Science

1. MSO 205 - Introduction to Probability Theory or MSO201 or HSO 201 or CS 203
2. MTH 211 - Theory of Statistics
3. MTH 441 - Linear Regression and ANOVA
4. MTH 208 – Data Science Lab I

The incoming strength would be limited to 20% of the sanctioned strength of the program as per section 10.6.4 of UG manual.