A. Programme Details

1. Programme Name : M.Sc (Physics)
2. Division : Physical and Mathematical Sciences
3. Department : Jointly run by CHEP, IAP, Physics: Nodal department: CHEP
4. Degree Name : Master of Science (Physics)
5. Program Curriculum Committee :

   Justin David (Coordinator)

   Biplob Bhattacherjee (DCC, CHEP)

   Baladitya Suri (DCC, IAP)

   Aveek Bid (DCC, Physics)

B. Course Work Details : Total Credits 65

7. Pool Wise Course and credit limit

   Provide the course name and course code under each applicable pool, along with the minimum and maximum credit that a student can take from each pool

   a. Hardcore Pool

      - Courses:
      - PH 201 Classical Mechanics
      - PH 203 Quantum Mechanics I
      - PH 205 Mathematical Methods of Physics
      - PH 217 Fundamental of Astrophysics
      - PH 207 Electronics I
      - PH 202. Statistical Mechanics
      - PH 204 Quantum Mechanics II
      - PH 203 Electromagnetic Theory
      - PH 208 Condensed Matter I

- PH 301 Seminar Course
- PH 215 Nuclear and Particle Physics
- PH 354 Computational Physics
- PH 211 General Physics Lab
- PH 212 Experiments in Condensed Matter Physics

- Credit Requirement:

Minimum Credits: 41

Maximum Credits: 41

b. Softcore Pool

- Courses: Can be taken from the 4 pools below depending on the specializations
- Credit Requirement:

Minimum Credits: 9

Maximum Credits: 9

Softcore Pool : Astronomy and Astrophysics	Softcore Pool : Computational Physics	Softcore Pool: High Energy Physics	Softcore Pool: Condensed Matter and Applied Physics
PH 363 Introduction to Fluid Mechanics and Plasma Physics	PH 322 Molecular Simulations	HE 395 Quantum Field Theory I	PH 325 Advanced Statistical Physics
PH 362 Radiative Processes	IN 270 Digital Signal Processing	HE 397 Standard Model of Particle Physics	PH 320 Condensed Matter Physics II
PH 365 Galaxies and Interstellar Medium	HE xxx Statistics, Machine learning and AI*	HE 398 General Relativity	IN 214 Semiconductor Devices and Circuits

PH 367 Plasma Physics and Applications	HE 315 Advanced Mathematical Physics	HE 396 Quantum Field Theory 2	IN 252 Optical Material and Device
	HE xxx Quantum Computation*	HE 315 Advanced Mathematical Physics	PH 352 Semiconductor Physics
			PH 340 Quantum Statistical Field Theory
			PH 350 Physics of Soft Condensed Matter
			PH 213 Advanced Experiments in Condensed Matter Physics

c. Electives : Minimum Credits: 6 , Maximum Credits 15.
Electives can be taken from any Institute elective, including any soft core course other than those that contribute to the 9 credits for the specialisation.

d. Project: 9 Credits

8. Is there any Minor or Major specializations applicable? If yes, please specify the requirement for qualifying minor/major specialization.

Yes, there are 4 possible major specialisation's.

I. Astronomy and Astrophysics

II. Computational Physics

III. High Energy Physics

IV. Condensed Matter and Applied Physics

The requirement to major in these specializations is to take a minimum of 9 Credits in the soft core pool of that particular specialization.

*The courses mentioned with Asterix will be introduced on SAP at the appropriate time.