

MATHEMATICAL PHYSICS – SPECIALIZATION (SCIENCE) – BACHELOR OF SCIENCE (HONOURS)

MAPH-P-BSH

Subject: Administered by the Departments of Mathematics and Statistics and Physics, Engineering Physics and Astronomy.

Plan: Consists of 105.00 units as described below.

Program: The Plan, together with sufficient electives to total 120.00 units, will lead to a Bachelor of Science (Honours) Degree.

Note: Requirements for this program have been modified. Please consult the 2022-2023 (<https://www.queensu.ca/academic-calendar/archive/2022-2023/arts-science/>) *Calendar* for the previous requirements.

Code	Title	Units
1. Core		
– MATHEMATICS AND STATISTICS CORE –		
A. Complete the following:		
MATH 110	Linear Algebra	6.00
MATH 120	Differential and Integral Calculus	6.00
B. Complete the following:		
MATH 210	Rings and Fields	3.00
C. Complete the following:		
MATH 231	Differential Equations	3.00
MATH 280	Advanced Calculus	3.00
MATH 281	Introduction to Real Analysis	3.00
D. Complete the following:		
STAT 268	Statistics and Probability I	3.00
STAT 269	Statistics and Probability II	3.00
E. Complete the following:		
MATH 326	Functions of a Complex Variable	3.00
MATH 328	Real Analysis	3.00
MATH 335	Mathematics of Engineering Systems	3.00
– PHYSICS CORE –		
F. Complete 6.00 units from the following: 6.00		
PHYS 104	Fundamental Physics	
PHYS 106	General Physics	
G. Complete the following:		
PHYS 206	Dynamics	3.00
PHYS 212	Vibrations and Waves	3.00
PHYS 213	Computational Methods in Physics	3.00
PHYS 239	Electromagnetism	3.00
PHYS 242	Relativity and Quanta	3.00

PHYS 250 Foundations of Experimental Physics 3.00

H. Complete the following:

PHYS 321 Advanced Mechanics 3.00

PHYS 344 Introduction to Quantum Mechanics 3.00

PHYS 345 Quantum Physics of Atoms, Nuclei and Particles 3.00

PHYS 350 General Laboratory 6.00

PHYS 372 Thermodynamics 3.00

I. Complete the following:

PHYS 432 Electromagnetic Theory 3.00

PHYS 590 Research Thesis 6.00

2. Option

– MATHEMATICS AND STATISTICS OPTION –

A. Complete 3.00 units from the following: 3.00

MATH 341 Differential Geometry

MATH 421 Fourier Analysis

MATH 427 Introduction to Deterministic Dynamical Systems

MATH 429 Functional Analysis and Quantum Mechanics

MATH 436 Partial Differential Equations

B. Complete 9.00 units from the following: 9.00

BIOM at the 300-level or above

MATH at the 300-level or above

STAT at the 300-level or above

– PHYSICS OPTION –

C. Complete 3.00 units from the following: 3.00

PHYS at the 400-level or above

Electives

Elective Courses 15.00

Total Units 120.00

3. Notes

A. A maximum of 6.00 units from courses offered by other Faculties and Schools may be counted toward the program and/or Plan requirements. This includes courses in BMED, COMM, GLPH, HSCI, LAW, NURS, and courses in the Faculty of Engineering and Applied Science.