DEPARTMENT OF PHYSICS ADVISING FORM

TERM: F24 / W25

HONOURS PHYSICS WITH THESIS (WITHOUT CO-OP)

Student Name: _____

Student I.D. Number: _____ Year: □ First □Second □Third □ Fourth

Telephone Number: _____ E-mail: _____

REQUIREMENTS: Forty (40) courses

1. Two Thesis courses
2. Nineteen Physics courses
3. Six Math & Statistics courses
4. Three Chemistry/Biochemistry courses
5. Two Computer Science courses
6. One Digital Systems course
7. Two courses from Arts, Humanities and Social Sciences
8. Five additional courses from any area

Standing Required For Continuation in Programs

GPA Cumulative Average 60% □ GPA Major Average 60% □

Standing Required For Graduation in Programs

GPA Cumulative Average 60% □ GPA Major Average 70% □

SUMMARY OF COURSES ATTAINED TOWARDS DEGREE

Physics Core (Major average)	□ PHYS-1400 □ PHYS-1410 □ PHYS-1500 □ PHYS-2200 □ PHYS-2210 □ PHYS-2500 □ PHYS-3100 □ PHYS-3200 □ PHYS-3210 □ PHYS-3500 □ PHYS-3900 □ PHYS-4100 □ PHYS-4130 □ PHYS-4900 (fall) □ PHYS-4900 (winter) □ PHYS-3XXX or PHYS-4XXX _____ □ PHYS-3XXX or PHYS-4XXX _____ □ PHYS-3XXX or PHYS-4XXX _____ □ PHYS-3XXX or PHYS-4XXX _____ □ PHYS-3XXX or PHYS-4XXX _____ □ PHYS-3XXX or PHYS-4XXX _____	21
Mathematics	□ MATH-1250 □ MATH-1720 □ MATH-1730 □ MATH-2780 □ MATH-2790 □ MATH-3550	6
Chemistry and Biochem	□ CHEM-1100 □ CHEM-1110 □ CHEM-2400	3
Computer Science	□ COMP-1400 □ COMP-1410	2
Digital Systems: ONE of	□ ELEC-2170 □ COMP-2650	1
Arts, Humanities, and Social Science	□ XXXX _____ □ XXXX _____ The University recognizes all economics courses (ECON) as social science / humanities courses.	2
Any Area of Study	□ _____ □ _____ □ _____ □ _____ □ _____	5

HONOURS PHYSICS WITH THESIS-2024

*Required courses are in **bold font**.*

Fall term	Winter term
Year 1	
PHYS 1400 Introductory Physics I	**PHYS 1410 Introductory Physics II**
MATH 1720/MATH 1760 Differential calculus	**MATH 1730 Integral calculus** NOTE 1
CHEM 1100 Chemistry I	**CHEM 1110 Chemistry II**
MATH 1250/MATH 1260 Linear algebra	**PHYS 1500 From Symmetry to Chaos in the Universe**
COMP 1400 Introduction to Algorithms I	**COMP 1410 Introduction to Algorithms II**
Year 2	
PHYS 2200 Waves and Oscillations	**PHYS-2210 Modern Physics**
MATH 2780 Vector Calculus	**PHYS 2500 Classical Mechanics I**
MATH 2790 Differential Equations	**MATH 3550 Introduction to Fourier Series and Special Functions**
CHEM 2400 Introductory Physical Chemistry I	**COMP 2650/ELEC 2170 Digital Logic Design I**
Option NOTE 2	Option or Physics 3XXX or 4XXX NOTE 2
Year 3	
PHYS 3100 Quantum Mechanics I	**PHYS 4100 Quantum Mechanics II**
PHYS 3200 Electricity and Magnetism I	**PHYS 3210 Electricity and Magnetism II**
PHYS 3500 Classical Mechanics II	Option NOTE 2
PHYS 3900 Experimental Physics Laboratory I	Option NOTE 2
Physics 3XXX or 4XXX	Physics 3XXX or 4XXX
Year 4	
Physics 3XXX or 4XXX	**PHYS 4130 Introduction to Statistical Mechanics**
Physics 3XXX or 4XXX	Physics 3XXX or 4XXX
Option	Physics 3XXX or 4XXX
Option	Option
PHYS 4900 Research	**PHYS 4900 Research**

NOTE 1: Students who wish to "get ahead" on their schedule are advised to enrol in "MATH 2780 Vector Calculus" and/or "MATH 2790 Differential Equations" which are both offered in the summer prior to their second year of classes. Taking these important pre-requisites will free up slots during the second year.

NOTE 2: Students have great flexibility in choosing their options, the following courses are suggestions only. Students should choose courses that are in an area of interest: more mathematics or statistics (as shown), more computer science, more chemistry, or business administration. For a physics degree, as much mathematics, statistics and computer science as possible is recommended. The following options are listed in an appropriate order to satisfy prerequisites and include a mixture of mathematics, computer science, and physics.

OTHER POSSIBLE OPTIONS	
COMP 2120 Object-Oriented Programming Using Java	MATH 1020 Mathematical Foundations
MATH 2250 Linear Algebra II (Fall) *requires MATH 1020	MATH 3800 Numerical Methods (Winter) COMP 2560 System Programming
MATH 3590 Complex Variables	STAT 2920 Introduction to Probability (Fall)

PHYS-3000/PHYS-4000 OPTIONS (not all courses are always available – **seek advising**)	
PHYS 3700 Introduction to Medical Physics (Winter) PHYS 4720 Magnetic Resonance Imaging PHYS 4730 Radiobiology	PHYS 4700 Radiological Physics (Fall) PHYS 4710 Medical Imaging (Winter)
PHYS 4250 Design / Application of Lasers (Fall)	PHYS 4670 Special Techniques in Health Physics
PHYS 4160 Condensed Matter Physics (Winter)	PHYS 4000 Technical Communication Skills (Winter)
PHYS 3600 Computational Physics	PHYS 3610 The Mathematics of Physics
PHYS 3250 Optics	PHYS 3910 Techniques in Experimental Physics II (Winter)