Honours Physics with Thesis and Co-op

Students entering in an odd year: Fall 2027, 2029, 2031, … · Total courses: 43

University of Windsor

	FALL		WINTER		SUMMER
Year 1	**PHYS-1400**	Introductory Physics I	**PHYS-1410**	Introductory Physics II	Off
	MATH-1720	Differential Calculus	**MATH-1730**	Integral Calculus	
	CHEM-1100	General Chemistry I	**CHEM-1110**	General Chemistry II	
	MATH-1250	Linear Algebra I	**PHYS-1500**	From Symmetry to Chaos in the Universe	
	COMP-1400	Introduction to Algorithms and Programming I	**COMP-1410**	Introduction to Algorithms and Programming II	
Year 2	**PHYS-2200**	Oscillations, Waves, and Electromagnetism	**PHYS-2210**	Modern Physics	Work term
	MATH-2780	Vector Calculus[1]	**PHYS-2500**	Intermediate Classical Mechanics	
	MATH-2790	Differential Equations	**MATH-3550**	Introduction to Fourier Series and Special Functions	
	CHEM-2400	Introductory Physical Chemistry I	**COMP-2650** / **ELEC-2170**	Computer Architecture I: Digital Design, or Digital Logic Design	
	Option	Any area[2]	*Option*	Any area	
Year 3	**PHYS-3200**	Electromagnetism: Statics	Work term		Work term
	PHYS-3900	Techniques in Experimental Physics I			
	PHYS XXXX	Any 3000- or 4000-level physics course[3]			
	PHYS XXXX	Any 3000- or 4000-level physics course			
	Option	Any area			
Year 4	**PHYS-3100**	Quantum Mechanics I	**PHYS-4100**	Quantum Mechanics II	Work term
	PHYS-3500	Advanced Classical Mechanics	**PHYS-4130**	Introduction to Statistical Mechanics	
	PHYS-4900	Research (thesis)	**PHYS-4900**	Research (thesis)	
	PHYS XXXX	Any 3000- or 4000-level physics course	PHYS XXXX	Any 3000- or 4000-level physics course	
	Option	Any area	*Option*	Any area	
Year 5	Off or work term		**PHYS-3210**	Electromagnetism: Dynamics	
			PHYS XXXX	Any 3000- or 4000-level physics course	
			PHYS XXXX	Any 3000- or 4000-level physics course	
			Option	Any area	
			Option	Any area	

Bold: required · Physics · Mathematics · Chemistry and biochemistry · Computer science

CO-OP WORK TERMS

Students complete three work terms, **PHYS-2980**, **PHYS-3980** and **PHYS-4980**, in three of the four terms marked Work term, as arranged with their employers. The fall of year five may also be used for a work term. Transform, the co-op preparation, is completed in the fall of year two. Students must maintain major and cumulative averages of 65% or better to qualify for Co-op placements.

EXAMPLE PHYSICS ELECTIVES†

PHYS-3110 Atomic and Molecular Spectra · **PHYS-3250** Optics · **PHYS-3600** Computational Physics · **PHYS-3610** The Mathematics of Physics · **PHYS-3700** Introduction to Medical Physics (Winter)[4] · **PHYS-3910** Techniques in Experimental Physics II (Winter, even years) · **PHYS-4000** Technical Communication Skills · **PHYS-4160** Condensed-Matter Physics · **PHYS-4250** Design and Application of Lasers · **PHYS-4600** Special Topics in Physics · **PHYS-4670** Special Techniques in Health Physics · **PHYS-4700** Radiological Physics (Fall, odd years) · **PHYS-4710** Medical Imaging (Fall, even years) · **PHYS-4720** Magnetic Resonance Imaging · **PHYS-4730** Radiobiology.

† Which run in a given year varies: ask an advisor.

OTHER POSSIBLE OPTIONS

COMP-2120 Object-Oriented Programming Using Java (Fall, Winter, Summer) · **MATH-1020** Mathematical Foundations (Winter, Summer) · **MATH-2250** Linear Algebra II (Fall) · **MATH-3590** Complex Variables (Winter) · **MATH-3800** Numerical Methods (Fall, Winter) · **COMP-2560** Systems Programming (Fall, Winter, Summer) · **STAT-2920** Introduction to Probability (Fall)

NOTES

1. MATH-2780 (Vector Calculus) and MATH-2790 (Differential Equations) are also offered in the Summer before second year. Taking either one then frees a slot in second year.
2. Two of the options must be arts, humanities or social science courses; all economics (ECON) courses count. Keep in mind that at most fourteen 1000-level courses count toward the degree.
3. PHYS XXXX means any 3000- or 4000-level physics course; numbers beside it are the courses planned for that term, and are tentative. A PHYS XXXX course and an option may swap terms. Which electives run changes from year to year, so a Physics major must plan the final two years with an advisor to complete the six required physics electives.
4. Consider taking PHYS-3700 (Introduction to Medical Physics) in the Winter of third year. It is the prerequisite for four upper-year physics electives, which are closed without it.
5. To continue in the program, a student needs cumulative and major averages of 60% or better (65% in the Co-op program). To graduate, a student needs a cumulative average of 60% (65% with Co-op) and a major average of 70%.