

# Physical Systems and Applied Mathematics

Fall, Winter, Spring 2016 – 2017

[sites.evergreen.edu/psam1617](http://sites.evergreen.edu/psam1617)

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**Signature required:** Application materials available at [sites.evergreen.edu/psam1617](http://sites.evergreen.edu/psam1617).

**Prerequisites:** Proficiency in one year of introductory calculus (including both differential and integral calculus) for math portions of the program. For physics portions of the program, same math prerequisite as previous, but also one year of calculus-based physics (including introductory mechanics and electricity and magnetism); algebra-based physics with excellent calculus background also considered. See application at [sites.evergreen.edu/psam1617](http://sites.evergreen.edu/psam1617) for more details.

**Credit:** Full program is 16 credits. Partial credit options available, particularly for students seeking just the math portions of the program. See [sites.evergreen.edu/psam1617](http://sites.evergreen.edu/psam1617) for more details.

**Fall major topics:** Differential Equations (4 credits); Multivariable and Vector Calculus (4 credits); Classical Mechanics (4 or 6 credits; TBD (4 or 2 credits – choices vary from history & philosophy of math & physics, modern physics, scientific computing, advanced lab/project)

**Winter major topics:** Linear Algebra (4 credits); Electrodynamics (6 credits); Quantum Mechanics (4 credits); TBD (2 credits)

**Spring major topics:** Electrodynamics (6 credits); Quantum Mechanics (6 credits); TBD (4 credits)

**Tentative Fall Schedule (subject to change):**

Monday	Tuesday	Wednesday	Thursday
9:00 – 11:00 Multivariable & Vector Calculus	9:00 – 11:00 Differential Equations	9:00 – 11:00 Multivariable & Vector Calculus	9:00 – 11:00 Differential Equations
12:30 – 2:30 Physics	12:30 – 2:00 Physics	11:30 – 12:30 Physics	12:30 – 2:30 Physics
	2:30 – 4:00 Physics		

**Fall Quarter Texts:**

- **Elementary Differential Equations and Boundary Value Problems, 10th Edition.** Boyce and DiPrima. 2012. ISBN: 9780470458310. (for differential equations)
- **Calculus: Single and Multivariable, 6th Edition.** Hughes-Hallett, et.al. 2012. ISBN: 9780470888612. Actually only need **Calculus: Multivariable, 6th Edition** ISBN: 9780470888674, which includes Ch. 12-21 of the full Single and Multivariable text. Earlier editions acceptable, *but not recommended*, and students are responsible for adjusting to discrepancies between editions, especially in exercise and problem numbering. (for multivariable and vector calculus)
- **Div, Grad, Curl, and All That, (Fourth Edition).** Schey. 2004. ISBN: 9780393925166. Earlier editions are fine. (for multivariable and vector calculus in fall and for electrodynamics in winter)
- **Classical Mechanics.** Taylor. 2005. ISBN: 9781891389221. (for classical mechanics)
- TBD

**Winter Quarter Texts:**

- **Linear Algebra and its Applications (5th Edition).** Lay, et.al. 2015. ISBN: 9780321982384. (for linear algebra)
- **Introduction to Electrodynamics (4th Edition).** Griffiths. 2012. ISBN: 978-0321856562. (for electrodynamics)
- TBD (for quantum mechanics)
- TBD

**Spring Quarter Texts:**

- TBD