

Credit Level Restriction: Graduate credit only.
Registration Restriction(s): Minimum student level – graduate.

PHYS 503 Physics Colloquium (1)
SEC. 002 CRN 24002
TEXT: None
TIME: 2nd & 4th Thursday 3:30 – 5:00 H-111
PROF: Dr. Lloyd Davis

Lectures and discussion on current research topics. Continuous registration required for current graduate students.

Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 6 hours.

PHYS 541 Electromagnetic Theory (3)
SEC. 002 CRN 25561
TEXT: TBD
TIME: Monday and Thursday 10:45 – 12:00 E-113
PROF: Dr. Horace Crater

Review of electrostatics, magnetostatics, and quasi-static problems; Maxwell's field equations and their solutions in dielectric and conducting media; electrodynamics and relativity, retarded potentials and gauge transformations, radiation produced by accelerating charges.

(DE) Prerequisite(s): 571.

PHYS 571 Mathematical Methods in Physics I (3)
SEC. 001 CRN 26548 (Same as Math 517 001 CRN 26536)
TEXT: *Mathematical Methods for Physicists*; Elsevier 2012; 7th Edition; ISBN 13: 978-0123846549; Arfken, Weber, Harris.
Mathematical Methods in the Physical Sciences; Wiley 2005; 3rd Edition; ISBN 13: 978-0471198260; Boas. These two books will serve as the primary text for this course. Other books will be used as well, e.g., *Mathematical Physics with Partial Differential Equations* by J.R. Kirkwood (Elsevier, 2013)
TIME: Monday & Thursday 12:30 – 1:45 E-111
PROF: Dr. Christian Parigger

Linear vector spaces, matrices, tensors, curvilinear coordinates, functions of a complex variable, partial differential equations and boundary value problems, Green's functions, integral transforms, integral equations, spherical harmonics, Bessel functions, calculus of variations.

Cross-listed: (Same as Mathematics 517.)

Recommended Background: Advanced calculus and differential equations.

Comment: This course can be used for the Interdisciplinary Graduate Minor in Computational Science (see <http://igmc.utk.edu>)

PHYS 599 Seminars (1)
SEC. 007 CRN 24020
TEXT: None
TIME: 2nd & 4th Thursday 3:30 – 5:00 H-111
PROF: Dr. Lloyd Davis