COMPUTATIONAL MATERIALS GRADUATE MINOR

Minor Graduate Program Head	Susan Sinnott
Program Code	CMPMT
Campus(es)	University Park
The Graduate Faculty	View (https://secure.gradsch.psu.edu/gpms/?searchType=fac&prog=CMPMT)

The use of computational modeling tools is ubiquitous in materials research. The Computational Materials minor provides a fundamental graduate education in materials simulation techniques. The course work:

1. provides foundational courses in materials modeling, offered at various length scales,
2. integrates both broad foundational courses for students interested in a wide range of modeling techniques and/or specialized courses allowing students to develop depth in a specific modeling technique/scale, and
3. provides a flexible set of electives that will assure students are exposed to materials-related phenomena in their area of expertise.

The minor provides students the recognition of having built a background in Computational Materials, as well as the access and oversight of faculty in the minor to help them integrate these concepts with their doctoral research.

Admission Requirements

Admission to the minor will require completion of a first core course in the minor, approval from the student's major Graduate Program Head/Graduate Program Chair/Director of Graduate Studies or Professor-in-Charge, and submission of a minor plan of study (listing intended courses by semester and approved by the student's intended minor faculty dissertation committee member) submitted to the MATSE department graduate program coordinator. A form for the minor plan of study and its approval is available from the graduate minor program. Graduate students in good standing (with current graduate GPA at or above 3.0) who have approval and who have completed a minor core course with a grade of B or higher will be admitted to the minor.

Minor Requirements

Requirements listed here are in addition to requirements for minors in Graduate Council policy GCAC-218 Minors (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-218-minors/).

The doctoral minor consists of no fewer than 15 credits, 9 credits of which must be from a list of core minor courses, and 6 credits of which are elective courses. A minimum of 6 credits must be at the 500 level.

Code	Title	Credits
Core Minor Courses		
Select 9 credits from the following:		9
CHEM 565	Quantum Chemistry I	
CHEM 566	Quantum Chemistry II	
PHYS 561	Quantum Mechanics I	
PHYS 512	Quantum Theory of Solids I	
MATSE 419	Computational Materials Science and Engineering	
MATSE 544	Computational Materials Science of Soft Materials	
MATSE 580	Computational Thermodynamics	
MATSE 581	Computational Materials Science II: Continuum, Mesocale Simulations	
Electives		
Select 6 credits from list of electives		6
Total Credits		**15**

A list of elective courses is maintained by the Department of Materials Science and Engineering. The Department also maintains a list of faculty who may represent the minor on dissertation committees. The minor is only available to doctoral students. Official requests to add a minor to a doctoral student's academic record must be submitted to Graduate Enrollment Services prior to establishment of the dissertation committee and prior to scheduling the comprehensive examination. At least one Graduate Faculty member from the minor field must serve on the candidate's dissertation committee.

Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Contact

Campus	University Park
Graduate Program Head	Susan B Sinnott
Program Contact	Sue Hyde 221 Steidle Building 80 Pollock Road University Park PA 16802 esh17@psu.edu (814) 865-9857
Program Website	View (https://www.matse.psu.edu/degree-programs/graduate/computational-materials-doctoral-minor/)