

# Orientation for MS Students 2016

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# Introductions

- Name and undergraduate institution
- Area(s) of interest
- What do you hope to get from the program?
- What are your career plans?

# MS Program Overview

- **MSE Coursework:** fundamental depth, breadth in discipline
- **Colloquia and Seminars:** for updates on cutting edge research, and perspective on the discipline
- **Career Development:** leveraging Northwestern resources
- **Social and Extracurricular**

# Coursework

- 12 course requirement, all taken for a grade.
- Typically 4 per quarter.
- 8 MSE courses, 5 of which must be 400 level.

## **Special Programs and Curricula**

- Integrated Computational Materials Engineering
- Minor in Engineering Management
- SJTU Dual Degree Program

# Certificate in ICME

**Goal:** provide training in **I**ntegrated  
**C**omputational **M**aterials **E**ngineering

**Requirements:** 4 courses and 2 quarters of  
PSED graduate seminar.

## **Required Courses**

MSE 401: Thermodynamics

MSE 408: Phase Transformations in Materials

MSE 458: Atomic Scale Computational Materials  
Science

MSE 390: Materials Design

PSED 510-1,2: ICME Seminar

# Minor in Engineering Management

**Goal:** provide an understanding of basic engineering management principles for MS students at the McCormick School of Engineering & Applied Sciences.

**Requirements:** 2 required courses and 1 elective chosen from the list below:

## **Required Courses**

IEMS 402 Engineering Management

IEMS 407 Quantitative Methods for Decision-Making

## **Electives (Choose one)**

IEMS 415 Computer Simulation for Risk and Operations Analysis

IEMS 417 Product Development

IEMS 426 Project Management

IEMS 490 Managerial Analytics

Contact: [mem@northwestern.edu](mailto:mem@northwestern.edu)

# Colloquia and Seminars

- MSE Colloquia are on Tuesdays at 4 pm.
- There are many other seminar series of interest: IIN, ISEN, ANSER, MRSEC, plus departmental seminars.
- Colloquium attendance is required, seminar attendance encouraged.

# Career Development

1. Use McCormick Office of Career Development:  
<http://www.mccormick.northwestern.edu/mcd/>
2. Consult TGS Website for additional professional development opportunities:  
<http://www.tgs.northwestern.edu/prof-dev/nu-directions/index.html>
3. Take courses in management and entrepreneurship (IEMS, Kellogg)
4. Develop resume, pursue on-campus interviews, network.
5. Communicate with scientists and others.



# Research & Internships

- Research is not a required component of the courses-based MS program
- **499 Independent Study** can be taken in winter quarter- Prof. Chung can help find mentor.
- Note- *PhD students are looking for groups, so do not contact faculty right now.*
- Summer internships are possible.
  - Work with McCormick Career Development.
  - More information will be provided by the International Office and McCormick.

# Academic Integrity

- Submitted work must be your own.
- Check with instructor regarding permissibility of group work.
- Acknowledge contributions in group work.
- Cite original sources of written material, ideas, solutions, etc.
- In classes with laboratory activities, safety is the top priority.

*What should you do if you are not comfortable with an incident or situation?*

# Student Support & Conflict Management

- Do not wait to raise concerns.
- The Chair (Luijten) and Director of Graduate Studies (Shull) can be contacted at any time.
- Alice Camacho and Kathleen Stair also serve as non-faculty points of contact (confidential).
  - Is my concern concerning?
  - What is the best path to resolution?
- Consult TGS Website for University counseling resources.

<http://www.tgs.northwestern.edu/graduate-life/dealing-with-conflict/index.html>

# MSE grad electives Fall 2016:

- 337 Conductive Polymers (Huang)
- 357 Magnetic Properties of Materials (Petford-Long)
- 360 Intro to Electron Microscopy (Marks)- for BS & MS students
- 381 Energy Materials (Dunand)
- 391 Process Design (Chung)
  
- 415 Fundamentals of Thin Film Materials (Barnett)
- 445 Polymer Physics (Olvera)
- 451 Physics of Materials (Hersam)

Schedule: <http://www.matsci.northwestern.edu/courses/index.html>

Comments:

<http://www.registrar.northwestern.edu/courses/index.html#CTEC>

# Classmates

- BS Students
- BS/MS Students
- MSE PhD Students
- Other undergrad, graduate students

# Coursework- more details

- 12 course requirement, all taken for a grade.
- Typically 4 per quarter.
- 8 MSE courses, 5 of which must be 400 level.

## Fall 2016

- Course #1: Foundational course (401 Thermodynamics)
  - Course #2: 400 level MSE elective (often 451)
  - Courses #3 & #4: grad level elective (most 300, all 400 level courses)
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- Registration starts Sept 15 (Thur) at 9:00 AM
  - Last day to add a class: Sept 26
  - Last day to drop a class: Oct 28