**PURDUE UNIVERSITY**

REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE (10000-40000 LEVEL)

**DEPARTMENT:** School of Materials Engineering

**EFFECTIVE SESSION:** Fall 2010

**INSTRUCTIONS:** Please check the items below which describe the purpose of this request.

- 1. New course with supporting documents
- 2. Add existing course offered at another campus
- 3. Expiration of a course
- 4. Change in course number
- 5. Change in course title
- 6. Change in course credit type
- 7. Change in course attributes (department head signature only)
- 8. Change in instructional hours
- 9. Change in course description
- 10. Change in course requisites
- 11. Change in semesters offered (department head signature only)
- 12. Transfer from one department to another

**PROPOSED:**

- **Subject Abbreviation:** MSE
- **Course Number:** 27000
- **Long Title:** Atomistic Materials Science
- **Short Title:** Atom Mits Sci

**EXISTING:**

- **Subject Abbreviation:** MSE

**TERMS OFFERED:**

- Check all that apply:
  - Summer
  - Fall
  - Spring

**CAMPUS(ES) INVOLVED:**

- Calumet
- Cont Ed
- Ft. Wayne
- N. Central
- Tech Statewide
- W. Lafayette
- Indianapolis

**CREDIT TYPE:**

<table>
<thead>
<tr>
<th>1. Fixed Credit: Cr. Hrs.</th>
<th>2. Variable Credit Range: Min Credit Hrs</th>
<th>Maximum Credit Hrs</th>
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</thead>
</table>

**COURSE ATTRIBUTES:**

- 6 Registration Approval Type
- Department
- Instructor
- Variable Title
- Honors
- Full Time Privilege
- Off Campus Experience

**SCHEDULE TYPE:**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Recitation</th>
<th>Presentation</th>
<th>Laboratory</th>
<th>Lab Prep</th>
<th>Studio</th>
<th>Distance</th>
<th>Clinic</th>
<th>Experiential</th>
<th>Research</th>
<th>Ind. Study</th>
<th>Pract/Observer</th>
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<tbody>
<tr>
<td>Minutes Per Mgr</td>
<td>Week</td>
<td>% of Credit Offered</td>
<td>% of Credit Allocated</td>
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</tbody>
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**COURSE DESCRIPTION (INCLUDE REQUIREMENTS/RESTRICTIONS):**

MSE 27000 Atomistic Materials Science. Sem. 2, Cr. 3. Prerequisite: MA 261; Co-requisite: MA 265 and MSE 230 or consent of instructor.

Introductory course with an atomistic view point on material properties. Three primary class sections: bonding crystallography and statistical mechanics. Bonding topics include introduction to quantum mechanics, emphasis on understanding of metallic, ionic and covalent bonding. Crystallography topics include crystal descriptions and symmetry principles. Statistical mechanics developed with application to electronic and thermodynamic properties.

**COURSE LEARNING OUTCOMES:**

**OFFICE OF THE REGISTRAR**

[Signatures of approval]
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OR REVISION OF AN UNDERGRADUATE COURSE
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PROPOSED:

Subject Abbreviation: MSE

Course Number: 27000

Long Title: Atomic Materials Science

Short Title: Atom Mats Sci

TERMS OFFERED

Check All That Apply:

☐ Summer
☐ Fall
☐ Spring

CAMPUS(ES) INVOLVED

☐ Calumet
☐ Cont Ed
☐ Ft. Wayne
☐ Tech Statewide
☐ W. Lafayette
☐ Indianapolis

CREDIT TYPE

1. Fixed Credit: Cr. Hrs.:
☐ 3

2. Variable Credit Range:
Minimum Cr. Hrs: (Check One)
☐ To
☐ Or

Maximum Cr. Hrs:

3. Equivalent Credit:

Yes
No

% of Credit

Course Attributes: Check All That Apply

1. Pass/Not Pass Only
2. Satisfactory/Unsatisfactory Only
3. Repeatable
4. Credit by Examination
5. Special Fees
6. Registration Approval Type
7. Variable Title
8. Honors
9. Full Time Privilege
10. Off Campus Experience

Schedule Type

Lecture
Recitation
Presentation
Lab Prep
Studio
Distance
Clinic
Experiential
Research
Ind. Study
Prac/Observ

Minutes Per Mth
50

Meetings Per Week
3

Weeks Offered
16
18

Credit Hours
14

Cross-Listed Courses

Course Description (Include Requisites/Restrictions):

MSE 27000 Atomic Materials Science. Sem. 2, Class 3, C. 3. Prerequisite: MA 261; Corequisite: MA 265 and MSE 230 or consent of instructor

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Course Learning Outcomes

Calumet Department Head:
Date:

Calumet School Dean:
Date:

Fort Wayne Department Head:
Date:

Fort Wayne School Dean:
Date:

Indianapolis Department Head:
Date:

Indianapolis School Dean:
Date:

North Central Faculty Senate Chair:
Date:

Vice Chancellor for Academic Affairs:
Date:

West Lafayette Department Head:
Date:

West Lafayette College School Dean:
Date:

West Lafayette Registrar:
Date:

OFFICE OF THE REGISTRAR

EFD 41-10
TO: The Engineering Faculty
FROM: The Faculty of the School of Materials Engineering
RE: Prerequisite Change for MSE 27000, Atomistic Materials Science

The faculty of the School of Materials Engineering have approved the following changes to prerequisites for an undergraduate course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

From: MSE 27000 Atomistic Materials Science
Sem. 2. Lec. 3, Cr. 3.
Prerequisite: MA 26100 and MA 26500; Co-requisite: MSE 23000 or consent of instructor.

To: MSE 27000 Atomistic Materials Science
Sem. 2. Lec. 3, Cr. 3.
Prerequisite: MA 26100; Co-requisite: MA 26500 and MSE 23000 or consent of instructor.

Reason: Course instructors for MSE 27000 have deemed that it is acceptable for MA 26500 to be a co-requisite.

Keith J. Bowman, Professor and Head
School of Materials Engineering

APPROVED FOR THE FACULTY OF THE SCHOOLS OF ENGINEERING BY THE ENGINEERING CURRICULUM COMMITTEE

ECC Minutes #22
Date 4/6/10
Chairman ECC R. Gupta