Distance Ed Course Offerings
Fall 2018 08/27/18 - 12/07/18

Delivery Format Key

**CL = Classroom LIVE**
An integrated, web-based virtual environment that delivers programs in real time following the on-campus schedule from classrooms on Lehigh’s campus to students in their homes, at their workplace, or while traveling. These classes do require live participation and discussion and are also archived for later review.

**OL = Online**
An asynchronous online format that offers flexible scheduling and participation. A 3-credit online course includes approximately 36 hours of content and assignments. Each online course requires an additional $100 online fee.

**HY = Hybrid**
A combination of both Classroom LIVE segments and asynchronous online segments. All DE students are required to connect in real time for the Classroom LIVE sessions, dates of which will be determined by the instructor.

**IS = Independent Study**
Delivery requires contact with advisor to arrange a project or research.

Course Registration

Only officially admitted students are eligible to register for Lehigh University courses for academic credit.

All DE students will register online via Lehigh’s campus portal, using their alternate pin. Students must have department approval for their course selections.

Tuition


All courses with OL and HY delivery formats are subject to $100 support fee per course.

- Arts and Science Courses: $955 per credit (plus $100 support fee if OL/HY delivery format)
- Business Courses: $1,075 per credit (plus $100 support fee if OL/HY delivery format)
- Engineering Courses: $1,500 per credit (plus $100 support fee if OL/HY delivery format)
- Healthcare Systems Engineering Program: $1,500 per credit (plus $100 support fee if OL/HY delivery format)
- Management Science and Engr. Program: $1,500 per credit (plus $100 support fee if OL/HY delivery format)

Please click on the individual course Number/Sec fields to see the full Course Descriptions including:

- Course description
- Prerequisites
- Equipment or software requirements
- Attendance requirements
- Special course dates
- Textbooks

Spotlight on new courses for Fall 2018:

- BIOS 466 - Structure and Function of RNAs and Ribonucleoprotein Complexes
- CHE 496 - Understanding Pharmaceutical Regulations
- MAT 409 - Polymer Char & Analyses
- TE 401 - Integrated Product Development

Students should note there may be elective courses outside their program area that fit curriculum requirements. Students should review all course offerings, prerequisites and seek Program Advisor’s approval if interested in a course outside their program area.

When printing document, please adjust page range and print orientation if you only want to print the course list without all of the course descriptions.
## Distance Ed Course Offerings
### Fall 2018

**DELIVERY METHOD KEY**
- **Full** = full term session
- **SS1** = session 1
- **SS2** = session 2
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### Arts & Science

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Current Version: 4/30/18  
Fall 2018  
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</table>
## Distance Ed Course Offerings

### Fall 2018

**DELIVERY METHOD KEY**
- **CL** = Classroom LIVE
- **OL** = Online
- **IS** = Independent Study
- **HY** = Hybrid

**SESSION KEY**
- **Full** = full term session
- **SS1** = session 1
- **SS2** = session 2
- **CL** = Classroom LIVE

### Engineering

<table>
<thead>
<tr>
<th>NumberSec</th>
<th>Session</th>
<th>Delivery</th>
<th>Title</th>
<th>CRN</th>
<th>Cross Links/Courses Avai</th>
<th>Credits</th>
<th>Day(s)</th>
<th>Time (Eastern Standard)</th>
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*Term is 08/27/18-10/29/18*
Introduction to the Organization and Its Environment

Course Numbers: MBA 401-D10

Prerequisites: none

Instructor - Joshua Ehrig  jwe4@lehigh.edu

An MBA core course designed to provide a thorough understanding of business organizations by examining strategies middle and senior managers use to create and sustain organizational competitive advantage. The course examines the organization from an overall perspective within the context of the firm’s internal and external environment. The second aspect of this course deals with the ability to communicate effectively in today’s business and professional environment. Students will examine and practice the written and verbal communications strategies and skills that are essential to their success in business.

Additional Course Requirements:
This course is taught with heavy use of case studies and in-class discussion. Real-time participation is mandatory. Distance students are required to attend at the scheduled course time.
This course does not have a textbook. Instead, a course packet will be available for purchase online (approximately $45.) MSE students must take this course in conjunction with MSE 403, Global Competitive Environment (1 credit).

Equipment/Software Requirements:
Because this course requires real-time participation, online students MUST use the recommended headset/microphone, which is the Logitech Clear Chat USB headset and microphone. Several presentations are required as a part of this class. Distance students are required to have a web camera to present to the instructors and other students. Alternatively, distance students may attend class on campus on presentation days.

Notes:
*Term is 8/27/18 - 10/29/18

Textbooks:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:
Course Descriptions  Fall 2018

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:

Original List Run Date: 4/5/2018  Current Version: 4/30/18
Introduction to the Organization and Its Environment

Course Numbers: MSE 402-D10

Prerequisites: none

Instructor - Joshua Ehrig  jwe4@lehigh.edu

An MBA core course designed to provide a thorough understanding of business organizations by examining strategies middle and senior managers use to create and sustain organizational competitive advantage. The course examines the organization from an overall perspective within the context of the firm’s internal and external environment. The second aspect of this course deals with the ability to communicate effectively in today’s business and professional environment. Students will examine and practice the written and verbal communications strategies and skills that are essential to their success in business.

Additional Course Requirements:
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- This course does not have a textbook. Instead, a course packet will be available for purchase online (approximately $45.) MSE students must take this course in conjunction with MSE 403, Global Competitive Environment (1 credit).

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- Because this course requires real-time participation, online students MUST use the recommended headset/microphone, which is the Logitech Clear Chat USB headset and microphone. Several presentations are required as a part of this class. Distance students are required to have a web camera to present to the instructors and other students. Alternatively, distance students may attend class on campus on presentation days.

Notes:
*Term is 08/27/18-10/29/18
(May be continued on next page)

Textbooks:

Title: None Required

Author(s):  
Edition:  
Publisher:  ISBN(s):  
Additional Info:
Course Descriptions  Fall 2018

Title: None Required
None Required

Author(s):

Edition:

Publisher:

ISBN(s):

Additional Info:
Integrated Product Development

Course Numbers: TE 401-D10

Prerequisites: none

Instructor - Marsha Timmerman  mwt217@lehigh.edu

Instructor - Brandon Krick  (610) 758-5772  bak213@lehigh.edu

An integrated and interdisciplinary approach to engineering design, concurrent engineering design and manufacturing, industrial design and the business of new product development. Topics include design methods, philosophy and practice, the role of modeling and simulation, decision making, risk, cost, material and manufacturing process selection, platform and modular design, mass customization, quality, planning and scheduling, intellectual property issues, teamwork, creativity and innovation. The course uses case studies and team projects with geographically dispersed partners.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:

(May be continued on next page)

Textbooks:

Required  Title: Product Design and Development

Author(s): Karl Ulrich, Steven Eppinger  Edition: 5th Edition

Additional Info:
Link to Lehigh Bookstore
Course Title: Understanding Pharmaceutical Regulations

Course Numbers: CHE 496-D10 OL

Prerequisites:

Instructor - R. Sam Niedbala, PhD
Email: san204@lehigh.edu

Course Description:
The impact of pharmaceuticals and biopharmaceuticals on world health is dramatic. From the early years of drug discovery to today’s sophisticated methods of discovery and development; regulations act as the gate-keeper to assuring safety and efficacy of any compound. This course will explore the history of the pharma and biopharmaceutical industry and how this has created today’s regulatory requirements and processes. Students will develop an understanding of how new compounds are brought to market worldwide along with the regulations that govern the processes.

Additional Course Requirements: None

Equipment/Software Requirements: None, Access to Internet

TEXTBOOKS:
Required: TITLE: FDA Regulatory Affairs
Authors: Douglas Pisano, David Mantus
Edition: Second
Publisher: Informa Healthcare
Research - Biology

Course Numbers: BIOS 407-D10

Prerequisites: none

Instructor - Prof. Vassie Ware  (610) 758-3690  vcw0@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
Need Student's Advisor.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Dissertation - Biology and Chemistry

Course Numbers: BIOS 499-D10

Prerequisites: none

Instructor - Prof. Vassie Ware  (610) 758-3690  vcw0@lehigh.edu

Contact Prof. Miller (Chemistry) or Prof. Ware (Biology) for further instructions

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:
Dissertation - Chemical Engineering

Course Numbers: CHE 499-D10

Prerequisites: none

Instructor - Prof. Mayuresh Kothare (610) 758-6654 mvk2@lehigh.edu

Instructor - Prof. Kemal Tuzla (610) 758-4628 kt01@lehigh.edu

Please contact Prof. Kemal Tuzla or Prof. Mayuresh Kothare for information.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:
Research - Biology

Course Numbers: BIOS 407-D28

Prerequisites: none

Instructor - Michael Layden (610) 758-3625 mjl514@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
Need Student's Advisor.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Introduction to Healthcare Systems

Course Numbers: ISE 470-D10 OL

Prerequisites: none

Instructor - Robert McDonald (802) 233-6806 rbm216@lehigh.edu


Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes: (May be continued on next page)

Textbooks:

Title: TBD
To Be Determined.

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:
Dissertation - Materials Science

Course Numbers: MAT 499-D10

Prerequisites: none

Instructor - Prof. Raymond Pearson (610) 758-3857 rp02@lehigh.edu

Contact Prof. Ray Pearson for further instructions.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes: (May be continued on next page)

Textbooks:
Research - Biology

Course Numbers: BIOS 407-D20

Prerequisites: none

Instructor - Daniel Babock

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:

Need Student's Advisor.

Equipment / Software Requirements:

none specified

Notes:

(May be continued on next page)

Textbooks:
Polymer Blends and Composites

Course Numbers: MAT 485-D10 OL

Prerequisites: An introductory course in polymers

Instructor - Eric Daniels Phone: (610) 758-6355 Email: Eric.Daniels@Lehigh.edu

This course will emphasize polymer blends but will also cover polymeric composites. The polymer blends part will cover the fundamentals including thermodynamics, phase behavior and phase separation characteristics. In addition, specific lectures will emphasize compatibilization methods for optimizing polymer blends, types of various polymer blends, properties and applications. Composite lectures will cover particulate and fiber-filled systems.

Additional Course Requirements:

none specified

Equipment / Software Requirements:

none specified

Notes:

(May be continued on next page)

Textbooks:

Required

Title: Polymer Blends: Comprehensive Review
Author(s): L.M. Robeson; Hanser
Publisher: HANSER-G
Edition: 2007
ISBN(s): 9781569904084

Additional Info: Link to Lehigh Bookstore

Required

Title: Polymer Blends: Comprehensive Review
Author(s): L.M. Robeson; Hanser
Publisher: HANSER-G
Edition: 2007
ISBN(s): 9781569904084

Additional Info: Link to Lehigh Bookstore

Required

Title: Polymer Blends: Comprehensive Review
Author(s): L.M. Robeson; Hanser
Publisher: HANSER-G
Edition: 2007
ISBN(s): 9781569904084

Additional Info: Link to Lehigh Bookstore
Applied Data Mining

Course Numbers: ISE 465-D10 OL

Prerequisites: IE/ISE 121 or IE/ISE 328

Instructor - Derya Pamukcu
dp00@lehigh.edu

Introduction to the data mining process including business problem understanding, data understanding and preparation, modeling and evaluation, and model deployment. Emphasis on hands-on data preparation and modeling using techniques from statistics, artificial intelligence, such as regression, decision trees, neural networks, and clustering. A number of application areas are explored. This course is a graduate version of IE 365 possessing some advanced assignments. Credit will not be given for both IE 365 and IE 465.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:

(May be continued on next page)

Textbooks:

Required

Title: Data Mining: Concepts and Techniques

Author(s): Han, Kamber, and Pei
Edition: 3rd Edition
Publisher:

Additional Info:
Link to Lehigh Bookstore
Topics in Polymer Science - Emulsion Polymers

Course Numbers: CHE 483-D10 OL

Prerequisites: none

Instructor - Eric Daniels (610) 758-6355 Eric.Daniels@Lehigh.edu

Fundamental concepts important in manufacture, characterization, and application of polymer latexes. Topics include colloidal stability, polymerization mechanisms and kinetics, reactor design, characterization of particle surfaces, latex rheology, morphol

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Integrated Product Development

Course Numbers: MSE 401-D10

Prerequisites: none

Instructor - Brandon Krick (610) 758-5772 bak213@lehigh.edu
Instructor - Marsha Timmerman mwt217@lehigh.edu

An integrated and interdisciplinary approach to engineering design, concurrent engineering design and manufacturing, industrial design and the business of new product development. Topics include design methods, philosophy and practice, the role of modeling and simulation, decision making, risk, cost, material and manufacturing process selection, platform and modular design, mass customization, quality, planning and scheduling, intellectual property issues, teamwork, creativity and innovation. The course uses case studies and team projects with geographically dispersed partners.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

Required Title: Product Design and Development
Author(s): Karl Ulrich, Steven Eppinger Edition: 5th Edition
Additional Info: Link to Lehigh Bookstore

Required Title: Product Design and Development
Author(s): Karl Ulrich, Steven Eppinger Edition: 5th Edition
Additional Info: Link to Lehigh Bookstore

Required Title: Product Design and Development
Author(s): Karl Ulrich, Steven Eppinger Edition: 5th Edition
Additional Info: Link to Lehigh Bookstore
Research - Biology

Course Numbers: BIOS 407-D14

Prerequisites: none

Instructor - Prof. Lynne Cassimeris  (610) 758-6275  lc07@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
Need Student's Advisor.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Research - Biology

Course Numbers:  BIOS 407-D19

Prerequisites:  none

Instructor - Prof. Linda Lowe-Krentz  (610) 758-5084  lj10@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
   Need Student's Advisor.

Equipment / Software Requirements:
   none specified

Notes:
   (May be continued on next page)

Textbooks:
Research - Biology

Course Numbers: BIOS 407-D26

Prerequisites: none

Instructor - Prof. Robert Skibbens (610) 758-6162 rvs3@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
Need Student's Advisor.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Advanced Cell Biology

Course Numbers: BIOS 411-D10 OL

Prerequisites: none

Instructor - Prof. Robert Skibbens  (610) 758-6162  rvs3@lehigh.edu

Cell structure and biochemistry, as related to specialized cell functions.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

Optional  Title: Molecular Biology of the Cell

Author(s): Bruce Alberts  
Edition: 6th

Publisher: Garland Science, Taylor and Francis Group  
ISBN(s): 978-0815344322

Additional Info: Do Not need both books, can choose one.

Link to Lehigh Bookstore

Optional  Title: Lewin’s Cells

Author(s): George Plopper, David Sharp and Eric Sikorski  
Edition: 3rd (Dec 2013)

Publisher: Jones & Bartlett Learning  

Additional Info: Do Not need both books, can choose one.

Link to Lehigh Bookstore
Thesis - Manufacturing Systems Engineering

Course Numbers: MSE 490-D10

Prerequisites: none

Instructor - Gregory Tonkay  (610) 758-4040  glt0@lehigh.edu

Please contact your Advisor for more information.

Additional Course Requirements:
Instructor Permission

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:
Project - Engineering

Course Numbers: MAT 460-D10

Prerequisites: none

In-depth study of a problem in the area of materials engineering or design. The study is to lead to specific conclusions and be embodied in a written report.

Additional Course Requirements:
Intended for candidates for the M.Eng. May be repeated for a total of three credit hours

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:

Title: None Required

Author(s):
Edition:

Publisher:
ISBN(s):

Additional Info:
Thesis - Manufacturing Systems Engineering

Course Numbers: MAT 490-D10

Prerequisites: none

Instructor - Prof. Raymond Pearson  (610) 758-3857  rp02@lehigh.edu

Please contact your Advisor for more information.

Additional Course Requirements:
   Instructor Permission

Equipment / Software Requirements:
   none specified

Notes:
   (May be continued on next page)

Textbooks:

Title: None Required
Author(s):  
Publisher:  
Additional Info:

ISBN(s):

Title: None Required
Author(s):  
Publisher:  
Additional Info:

ISBN(s):
Managing People

Course Numbers: MBA 405-D10

Prerequisites: MBA 401

Instructor - Douglas Mahony (610) 758-4935  dmm309@lehigh.edu

An MBA core course that focuses on how organizations create or sustain a competitive advantage through people. In this course you will learn to apply principles of organizational behavior toward effective human resource management. Topics covered in this course include organization and job fit, employee attraction and selection, motivation principles, negotiation and conflict management, organizational culture, job design, and change management. This course also offers students the opportunity to learn about their leadership strengths and weaknesses including decision making, communication, and team building. The course material will be covered using lectures, class exercises and discussion, current topics and case analyses.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

Title: TBA

Author(s):

Edition:

Publisher:

ISBN(s):

Additional Info:
Course Descriptions  Fall 2018

Structure/Fct Rna & Complexes

Course Numbers:  BIOS 466-D10

Prerequisites:  none

Instructor - Prof. Mike Kuchka  (610) 758-3687  mrk5@lehigh.edu

Biochemistry and function of small nuclear RNPs, RNase P, ribosomes, self-splicing introns, signal recognition particle, RNA viruses. Functions of RNA in DNA replication, in regulation, as an enzyme, and as a repressor.

Additional Course Requirements:  none specified

Equipment / Software Requirements:  none specified

Notes:  Hybrid Course, Some Classroom LIVE attend required.

(May be continued on next page)

Textbooks:
Integrated Product Development

Course Numbers: ME 401-D10

Prerequisites: none

Instructor - Brandon Krick
(610) 758-5772 bak213@lehigh.edu

Instructor - Marsha Timmerman
mwt217@lehigh.edu

An integrated and interdisciplinary approach to engineering design, concurrent engineering design and manufacturing, industrial design and the business of new product development. Topics include design methods, philosophy and practice, the role of modeling and simulation, decision making, risk, cost, material and manufacturing process selection, platform and modular design, mass customization, quality, planning and scheduling, intellectual property issues, teamwork, creativity and innovation. The course uses case studies and team projects with geographically dispersed partners.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:

(May be continued on next page)

Textbooks:

Required
Title: Product Design and Development
Author(s): Karl Ulrich, Steven Eppinger
Publisher: McGraw/Hill

Required
Title: Product Design and Development
Author(s): Karl Ulrich, Steven Eppinger
Publisher: McGraw/Hill

Required
Title: Product Design and Development
Author(s): Karl Ulrich, Steven Eppinger
Publisher: McGraw/Hill

Link to Lehigh Bookstore
Elements of Biochemistry I

Course Numbers: BIOS 371-D11 OL

Prerequisites: One year of organic chemistry

Instructor - Prof. Michael Behe
(610) 758-3474  mjb1@lehigh.edu

A general study of carbohydrates, proteins, lipids, nucleic acids, and other biological substances and their importance in life processes. Protein and enzyme chemistry are emphasized.

Additional Course Requirements:
Permission required for non CAS students.

Equipment / Software Requirements:
none specified

Notes:

(May be continued on next page)

Textbooks:

Required
Title: Biochemistry
Author(s): Reginald H. Garrett, Charles M. Grisham
Edition: 6th
Publisher: Cengage

Additional Info: Cengage offers electronic access to textbook (in lieu of physical copy) for a substantial discount. If interested, contact the Lehigh Bookstore directly.

Lehigh Bookstore

Required
Title: Biochemistry Study Guide with Student Solutions Manual and Problems Book
Author(s): Reginald H. Garrett, Charles M. Grisham
Edition: 6th
Publisher: Cengage

Required
Title: Biochemistry
Author(s): Reginald H. Garrett, Charles M. Grisham
Edition: 6th
Publisher: Cengage

Additional Info: Cengage offers electronic access to textbook (in lieu of physical copy) for a substantial discount. If interested, contact the Lehigh Bookstore directly.

Lehigh Bookstore
Course Descriptions  Fall 2018

Required
Title:  *Biochemistry Study Guide with Student Solutions Manual and Problems Boc*
Author(s):  Reginald H. Garrett, Charles M. Grisham
Publisher:  
Edition:  6th

Additional Info:
Seminar - Chemistry

Course Numbers:  CHM 481-D10

Prerequisites:  none

Instructor - Prof. James Roberts  (610) 758-4841  jer1@lehigh.edu

Student presentations on current research topics in the student’s discipline but not on subjects close to the thesis. A one-hour presentation.

Additional Course Requirements:
  none specified

Equipment / Software Requirements:
  none specified

Notes:
(May be continued on next page)

Textbooks:

Title:  None Required

Author(s):  Edition:
Publisher:  ISBN(s):

Additional Info:
Techniques in Cell and Molecular Biology

Course Numbers: BIOS 427-D10

Prerequisites: none

Instructor - Prof. Vassie Ware (610) 758-3690 vcw0@lehigh.edu

Independent research with approval of advisor. Laboratory experiences in three or more cell and molecular biological techniques: gel electrophoresis of nucleic acids/proteins; polymerase chain reaction; DNA/RNA sequencing; molecular hybridization techniques; fluorescence microscopy; confocal microscopy; flow cytometry; electron microscopy tissue preparation; immunological detection methods; molecular cloning techniques; molecular cloning techniques; oocyte microinjection techniques; tissue culture methods and autoradiography.

Additional Course Requirements:
Contact Prof. Ware for further instructions

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Title: None Required

Author(s):
Edition:
Publisher:
ISBN(s):
Additional Info:
Dissertation - Mechanical Engineering

Course Numbers: ME 499-D10

Prerequisites: none

Instructor - Prof. Jacob Kazakia (610) 758-3785 jyk0@lehigh.edu

Please contact Prof. Jacob Kazakia for more information.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes: (May be continued on next page)

Textbooks:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:
Independent Study in Materials

Course Numbers: MAT 310-D10

Prerequisites: none

- Prof. Raymond Pearson (610) 758-3857 rp02@lehigh.edu

Provides an opportunity for advanced, independent study of selected topics in materials science and engineering not covered in other formal courses. Please contact Prof. Raymond Pearson for more information.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks: Title: None Required

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:
Integrative Experience-Simulation

Course Numbers: MBA 406-D10

Prerequisites: MBA 401, MBA 402, MBA 403, MBA 404, MBA 405 All other core courses must be completed.

Instructor - Staff

The MBA Integrative Experience places an emphasis on strategic management as a key tool for creating and sustaining organizational competitive advantage. By taking the point of view of the general manager, we will view the organization from an overall perspective in the context of the firm’s internal and external environment. We will examine historical perspectives, contemporary theories, and practical applications all in the spirit of helping you develop a broad understanding of strategic management issues and solutions. This course will expose you to rigorous theoretical analysis while providing you with hands-on, simulated real world business experience.

As the capstone experience in the College of Business & Economics’ MBA program, this course requires that you integrate the concepts, knowledge, and skills acquired in previous functional courses and creatively apply them toward understanding and analyzing strategic management issues.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
Because this course requires real-time participation, online students MUST use the recommended webheadset/microphone, which is the Logitech Clear Chat USB headset and microphone. Several presentations are required as a part of this class. Distance students are required to have a web camera to present to the instructors and other students. Alternatively, distance students may attend class on campus on presentation days.

Notes:
(May be continued on next page)

Textbooks:

**Required**     Title: Strategic Management: Competitiveness and Globalization
Author(s): Hitt, Ireland, and Hoskisson
Publisher: Southwestern Publishing
ISBN(s): 978-1-285-42517-7

Additional Info:
Link to Lehigh Bookstore
Polymer Blends and Composites

Course Numbers: CHE 485-D10 OL

Prerequisites: An introductory course in polymers

Instructor - Eric Daniels (610) 758-6355 Eric.Daniels@Lehigh.edu

This course will emphasize polymer blends but will also cover polymeric composites. The polymer blends part will cover the fundamentals including thermodynamics, phase behavior and phase separation characteristics. In addition, specific lectures will emphasize compatibilization methods for optimizing polymer blends, types of various polymer blends, properties and applications. Composite lectures will cover particulate and fiber-filled systems.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes: (May be continued on next page)

Textbooks:
 Required Title: Polymer Blends: Comprehensive Review
Author(s): L.M. Robeson; Hanser
Publisher: HANSER-G
Edition: 2007
ISBN(s): 9781569904084

Required Title: Polymer Blends: Comprehensive Review
Author(s): L.M. Robeson; Hanser
Publisher: HANSER-G
Edition: 2007
ISBN(s): 9781569904084

Required Title: Polymer Blends: Comprehensive Review
Author(s): L.M. Robeson; Hanser
Publisher: HANSER-G
Edition: 2007
ISBN(s): 9781569904084

Link to Lehigh Bookstore
Game Theory

Course Numbers: ISE 358-D10 OL

Prerequisites: a Calculus course and Eco 105 or 115

Instructor - Prof. Eugene Perevalov (610) 758-4031 eup2@lehigh.edu

Mathematical analysis of how people interact in strategic situations. Applications include strategic pricing, negotiations, voting, contracts and economic incentives, and environmental issues. In this course there will be an emphasis on the fundamentals with a fair degree of mathematical rigor while applications relevant for IE/OR will also be considered. The goal of this course is to develop main game theory tools to the extent sufficient to read and understand current research papers.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:

(May be continued on next page)

Textbooks:

Title: Game Theory
Author(s): D. Fudenberg and J. Tirole
Publisher: MIT Press
ISBN(s):
Additional Info: Reference Text

Title: A Course in Game Theory
Author(s): M. J. Osborne and A. Rubinstein
Publisher: MIT Press
ISBN(s):
Additional Info: Reference Text

Required Title: An Introduction to Game Theory
Author(s): M. J. Osborne
Publisher: Oxford University Press
ISBN(s):
Thesis (MOC) - Biology and Chemistry

Course Numbers: ARTS 490-D10

Prerequisites: none

Instructor - Staff

Contact Prof. Miller (Chemistry) or Prof. Ware (Biology) for further instructions

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):

Additional Info:
Research - Biology

Course Numbers: BIOS 407-D11

Prerequisites: none

Instructor - Matthias Falk (610) 758-5896 mmf4@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements: Need Student's Advisor.

Equipment / Software Requirements: none specified

Notes: (May be continued on next page)

Textbooks:
Molecular Cell Biology II

Course Numbers: BIOS 422-D10

Prerequisites: BIOS 345 or equivalent

Instructor - Staff

Molecular aspects of gene expression, including genome structure and replication, RNA synthesis/processing, and protein synthesis.

Additional Course Requirements:
Attendance via ClassroomLive is required

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Title: None Required

Author(s): Edition:
Publisher: ISBN(s):

Additional Info:
Transportation and Logistics Management

Course Numbers: GBUS 453-D10

Prerequisites: none

Additional Course Requirements: none specified

Equipment / Software Requirements:
The LINKS Supply Chain Simulation ($50) - additional information can be found on the website - http://www.links-simulation.com

Notes:
(May be continued on next page)

Textbooks:

Required
Title: Logistics Management: Enhancing Competitiveness and Customer Value

Author(s): Lisa Ellram, Stan Fawcett, Thomas Goldsby, Christian Hofer and Dale Rogers
Edition: Copyright 2014-2015
Publisher: MyEducator
ISBN(s):
Additional Info: Available on-line at myeducator.com

Instructor - Dr. Zach Zacharia (610) 758-4433 zg208@lehigh.edu

This course provides a variety of tools and frameworks that will help students understand the basis behind effective transportation and logistics planning and how it relates to broader issues in managing the entire supply chain and supporting the strategic objectives of a firm. The course will cover global supply chain issues as well as focus on the various modes of transportation, warehousing and distribution, material handling, inventory management, customer service, and logistics outsourcing. The methods used to convey and develop these ideas include a mix of lecture, interactive discussion, case study analysis, and independent research. The course material is drawn from a number of sources, including a published textbook, articles from the popular business press, published research, and real-world business experiences. Course may be used in the SCM Certificate Program.
Managing Financial and Physical Resources

Course Numbers: MBA 402-D10

Prerequisites: MBA 401, GBUS 401 or equivalent

Instructor - Prof. Samuel Weaver (610) 758-5282 scw0@lehigh.edu
Instructor - Neal Snow (610) 758-3451 nes315@lehigh.edu

An MBA core course designed to integrate financial and managerial concepts into operations decisions. Disciplines of accounting, finance and economics are combined to provide substantive foundations for discussing and analyzing data. Implications of analysis are applied to facilitate decision-making in other areas such as marketing, operations (manufacturing, logistics and engineering), human resources, information technology and general management. The major learning objectives will be applied through a series of "living" cases that are centered on analyzing historical financial performance, preparing a business plan, and valuing a business.

Equipment / Software Requirements:
none specified

Notes:
Recommended: Wall Street Journal - Subscribe at the special student rate ($1/week).

Textbooks:

Required
Title: The Essentials of Financial Analysis
Author(s): Samuel C. Weaver
Publisher: McGraw Hill

Required
Title: Understanding Financial Statements
Author(s): Lyn Fraser, Aileen Ormiston
Publisher:

Recommended
Title: Python for Data Analysis
Author(s): Wes McKinney
Publisher:
Special Topics - Manufacturing Systems Engineering

Course Numbers: MSE 472-D10

Prerequisites: none

Instructor - Gregory Tonkay  (610) 758-4040  glt0@lehigh.edu

Special Topics

Additional Course Requirements:
   Instructor Permission

Equipment / Software Requirements:
   none specified

Notes:
   (May be continued on next page)

Textbooks:
Investments

Course Numbers:    GBUS 420-D10

Prerequisites:    none

Instructor - Ke Shen    kes317@lehigh.edu

This is a graduate course in investments. The aim is to learn investing concepts, techniques, and applications that professional and individual investors employ. Many of the techniques will serve the students well regardless of their fields. In learning these techniques, it is incumbent on the students to understand when it is appropriate to apply them and how to evaluate the techniques' strengths and weaknesses. Some of the techniques students will learn include: how to evaluate risk, how to value an asset, how to calculate price sensitivities and how to measure performance.

Upon completing this course, the student should be able to:

a) Understand and calculate various risk and return measures and apply them to the financial decision making process within the financial service arena.

b) Understand the basic concepts of the various money market and capital market securities and their relationship to risk/return tradeoffs.

c) Communicate effectively and comfortably using the language of finance.

Additional Course Requirements:

Wall Street Journal

Financial calculator

Case Studies

Equipment / Software Requirements:

Excel

Notes:

(May be continued on next page)

Textbooks:

**Required**

Title: Investments

Author(s): Zvi Bodie, Alex Kane, Alan J. Marcus    Edition: 11th


Additional Info:

Link to Lehigh Bookstore
Research - Biology

Course Numbers: BIOS 407-D18

Prerequisites: none

Instructor - Prof. Mike Kuchka

(610) 758-3687  mrk5@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
   Need Student's Advisor.

Equipment / Software Requirements:
   none specified

Notes:
   (May be continued on next page)

Textbooks:
Physical Polymer Science

Course Numbers: CHM 393-D10 OL

Prerequisites: 1 year of physical chemistry

Instructor - Prof. Raymond Pearson  (610) 758-3857  rp02@lehigh.edu

Structural and physical aspects of polymers (organic, inorganic, natural). Molecular and atomic basis for polymer properties and behavior. Characteristics of glassy, crystalline, and paracrystalline states (including viscoelastic and relaxation behavior) for single- and multi-component systems. Thermodynamics and kinetics of transition phenomena. Structure, morphology, and behavior.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:

Required
Title: Introduction to Physical Polymer Science
Author(s): Les Sperling
Publisher:
Additional Info: Link to Lehigh Bookstore
Edition: 4th
ISBN(s): 978-0471706069

Required
Title: Introduction to Physical Polymer Science
Author(s): Les Sperling
Publisher:
Additional Info: Link to Lehigh Bookstore
Edition: 4th
ISBN(s): 978-0471706069

Required
Title: Introduction to Physical Polymer Science
Author(s): Les Sperling
Publisher:
Additional Info: Link to Lehigh Bookstore
Edition: 4th
ISBN(s): 978-0471706069
Project - Manufacturing Systems Engineering

**Course Numbers:** MSE 451-D10

**Prerequisites:** none

Instructor - Gregory Tonkay (610) 758-4040 glt0@lehigh.edu

Please contact your Advisor for more information.

**Additional Course Requirements:**
Instructor Permission

**Equipment / Software Requirements:**
none specified

**Notes:**
(May be continued on next page)

**Textbooks:**

Title: *None Required*

Author(s): 
Edition:

Publisher: 
ISBN(s):

Additional Info:
Special Topics in Molecular Biology

Course Numbers:  BIOS 405-D10

Prerequisites:  none

Instructor - Prof. Vassie Ware  (610) 758-3690  vcw0@lehigh.edu

Research, conferences, and reports on selected topics not covered in the general graduate offerings. May be taken more than once for credit.

Additional Course Requirements:  none specified

Equipment / Software Requirements:  none specified

Notes:  
(May be continued on next page)

Textbooks:  
Title:  None Required

Author(s):  Edition:
Publisher:  ISBN(s):
Additional Info:
Polymer Char & Analysis

Course Numbers: MAT 409-D10 OL

Prerequisites: none

Instructor - Eric Daniels  (610) 758-6355 Eric.Daniels@Lehigh.edu

This course will survey the details of a wide variety of methods that are used to characterize polymers in their various states. These will include rheology, viscoelasticity, morphology, spectroscopy, mechanical; and thermal analysis, particle size, molecular weight, etc. During the semester we will examine the types of polymer properties that can be obtained using these different characterization methods. We will also learn to analyze the data that can be extracted from these methods and discuss what information these analyzes will give in terms of polymer properties. Prior exposure to a course in polymers would be helpful for students taking this class.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:
Chemical Engineering Thermodynamics

Course Numbers: CHE 400-D10 OL

Prerequisites: An introductory course in thermodynamics

Instructor - Jeetain Mittal   (610) 758-4791   jem309@lehigh.edu

Applications of thermodynamics in chemical engineering. Topics include energy and entropy, heat effects accompanying solution, flow of compressible fluids, refrigeration including solution cycles, vaporization and condensation processes, and chemical equilibria.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

** Required

Title: *An Introduction to Statistical Thermodynamics*

Author(s): Terrell L. Hill
Publisher: Dover, NY
Edition: 1986
ISBN(s):

Additional Info: Link to Lehigh Bookstore

** Required

Title: *Molecular Driving Forces: Statistical Thermodynamics in Biology, Chemistry, Physics, and Nanoscience*

Author(s): Ken Dill and Sarina Bromberg
Publisher: Garland Science, NY
ISBN(s):

Additional Info: Link to Lehigh Bookstore
Thesis (MOC) - Engineering

Course Numbers: ENGR 490-D10

Prerequisites: none

Instructor - Prof. John Coulter (610) 758-6310 je0i@lehigh.edu

Please contact your advisor.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):

Additional Info:
Research - Biology

Course Numbers: BIOS 407-D29

Prerequisites: none

Instructor - Prof. Mary Kathryn Iovine (610) 758-6981 mki3@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
   Need Student's Advisor.

Equipment / Software Requirements:
   none specified

Notes:
   (May be continued on next page)

Textbooks:
Managing Information

Course Numbers: MBA 403-D10

Prerequisites: MBA 401, GBUS 401 and GECO 401 or equivalents

Instructor - Prof. David Zhang (610) 758-4225 daz215@lehigh.edu

An MBA core course dealing with concepts and methods involved in the collection, organization and dissemination of information that helps managers make operational and strategic decisions and examines enterprise-wide impacts of local decisions. Revenue, cost, time and quality-based information are accorded equal emphasis, while students are exposed to alternative evaluation methods for decisions related to different parts of the value chain. Topics include: activity-based costing; activity-based management; trans-action analysis; operational and strategic investment analysis for short life-cycle investments; evaluation of uncertainty, risk and ambiguity; metrics development; compensation policies; segment evaluation methods; target costing and functional analysis; quality function deployment; total cost of ownership; and transfer pricing. In addition, the course deals with information technology enablers which allow firms to improve value delivered to customers; and evaluation and management of emerging forms of cooperation, such as joint ventures and project based strategic alliances.

Additional Course Requirements: none specified

Equipment / Software Requirements: Microsoft Excel

Notes: (May be continued on next page)

Textbooks:

**Required**

Title: *Accounting for Decision Making and Control*

Author(s): Zimmerman
Publisher: McGraw Hill
Edition: Custom Lehigh Bookstore Version or 8th Edition
ISBN(s): (Lehigh) 978-1-12-1876484 (McGraw Hill) 978-0-07-802574-7

Additional Info: Link to Lehigh Bookstore

**Required**

Title: *Business Analytics-Data Analytics and Decision Making*

Author(s): Albright and Winston
Publisher: Cengage Learning
Edition: Sixth Edition

Additional Info: CD not required, 4th or 5th editions are also acceptable

Link to Lehigh Bookstore
Numerical Methods in Mechanical Engineering

Course Numbers: ME 413-D10 OL

Prerequisites: none

Instructor - Hannah Dailey (610) 758-4112 hlr3@lehigh.edu


Additional Course Requirements:
none specified

Equipment / Software Requirements:
MATLAB and Microsoft Excel. Access to MATLAB is available to distance education students by using Lehigh's Virtual Public Site. Instructions on using the Virtual Public Site will be provided to registered students on the course web site.

Notes:
(May be continued on next page)

Textbooks:

Required
Title: Numerical Mathematics and Computing
Author(s): W. Cheney and D. Kincaid
Publisher: Brooks/Cole: Cengage Learning
Edition: 7th Edition

Optional
Title: Student Solutions Manual
Author(s): W. Cheney and D. Kincaid
Publisher: Brooks/Cole: Cengage Learning
Edition: 7th Edition

Additional Info:
Link to Lehigh Bookstore

Link to Lehigh Bookstore
Quality and Process Improvement in Healthcare

Course Numbers: ISE 471-D10 OL

Prerequisites: none

Instructor - Ana Alexandrescu (610) 758-3865 aia210@lehigh.edu

Dimensions of healthcare quality and their definitions, quality metrics, accreditation and other benchmarking and evaluation methods. Change management, project planning and team management. Continuous improvement tools including "lean," "six-sigma," and "TQM."

Additional Course Requirements:
none specified

Equipment / Software Requirements:
Excel

Notes:

(May be continued on next page)

Textbooks:
Intro to Industrial Engineering Mathematics

Course Numbers: ISE 357-D10 OL

Prerequisites: none

Instructor - Janos Pinter (610) 758-4430 jdp416@lehigh.edu

The objective of this course is to present a review of linear algebra and an introduction to quantitative analysis, manipulation of matrices, core concepts associated with systems of linear equations and linear optimization, algebraic and geometric models.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
MATLAB. Access to MATLAB is available to distance education students by using Lehigh's Virtual Public Site. Instructions on using the Virtual Public Site will be provided to registered students on the course web site.

Notes:
(May be continued on next page)

Textbooks:

Required

Title: Linear Algebra

Author(s): David C. Lay
Publisher:

Edition: 4th

Additional Info:
Link to Lehigh Bookstore
Metabolic Engineering

Course Numbers: CHE 449-D10 OL

Prerequisites: Graduate standing in Chemical Engineering or Bioengineering, or permission of instructor.

Instructor - Prof. Lori Herz (610) 758-6831 loh208@lehigh.edu

Quantitative perspective of cellular metabolism and biochemical pathways. Methods for analyzing stoichiometric and kinetic models, mass balances, flux in reaction networks, and metabolic control. Solving problems using advanced mathematics and computer programming. While the lecture content will be the same as that of BIOE 349, students enrolled in CHE 449 (BIOE 449) will have more advanced assignments. Closed to students who have completed BIOE 349.

Additional Course Requirements:
Closed to students who have completed BIOE 349.

Equipment / Software Requirements:
Matlab

Notes:

(May be continued on next page)

Textbooks:

Required Title: The Metabolic Pathway Engineering Handbook, Fundamentals (Vol. 1)

Author(s): Christina D. Smolke
Publisher:

Additional Info: Chapters 2, 3, 6, 7, 9, 11.
Link to Lehigh Bookstore

Textbooks:

Required Title: Metabolic Engineering Principles and Methodologies

Author(s): Stephanopoulos et al.
Publisher:

Additional Info: Chapters 2, 3, 4, 8, 9, 11
Link to Lehigh Bookstore

The compilation by University Readers will be available at the campus bookstore. An online version will be available too.
Topics in Polymer Science - Emulsion Polymers

Course Numbers: MAT 492-D10 OL

Prerequisites: none

Instructor - Eric Daniels (610) 758-6355 Eric.Daniels@Lehigh.edu

Fundamental concepts important in manufacture, characterization, and application of polymer latexes. Topics include colloidal stability, polymerization mechanisms and kinetics, reactor design, characterization of particle surfaces, latex rheology, morphology considerations, polymerization with functional groups, film formation and various application problems.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Topics in Polymer Science - Emulsion Polymers

Course Numbers: CHM 492-D10 OL

Prerequisites: none

Instructor - Eric Daniels (610) 758-6355 Eric.Daniels@Lehigh.edu

Fundamental concepts important in manufacture, characterization, and application of polymer latexes. Topics include colloidal stability, polymerization mechanisms and kinetics, reactor design, characterization of particle surfaces, latex rheology, morphol

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Elements of Biochemistry I

Course Numbers: CHM 371-D11 OL

Prerequisites: One year of organic chemistry

Instructor - Prof. Michael Behe (610) 758-3474 mjb1@lehigh.edu

A general study of carbohydrates, proteins, lipids, nucleic acids, and other biological substances and their importance in life processes. Protein and enzyme chemistry are emphasized.

Additional Course Requirements:
Permission required for non CAS students.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:

**Required**

Title: *Biochemistry*

Author(s): Reginald H. Garrett, Charles M. Grisham
Publisher: Cengage

Lehigh Bookstore

**Required**

Title: *Biochemistry Study Guide with Student Solutions Manual and Problems Boc*

Author(s): Reginald H. Garrett, Charles M. Grisham
Publisher: Cengage

Lehigh Bookstore

**Required**

Title: *Biochemistry*

Author(s): Reginald H. Garrett, Charles M. Grisham
Publisher: Cengage

Lehigh Bookstore
Course Descriptions  Fall 2018

Required

Title: Biochemistry Study Guide with Student Solutions Manual and Problems Book

Author(s): Reginald H. Garrett, Charles M. Grisham  Edition: 6th

Additional Info:
Physical Polymer Science

Course Numbers: MAT 393-D10 OL

Prerequisites: 1 year of physical chemistry

Instructor - Prof. Raymond Pearson (610) 758-3857 rp02@lehigh.edu

Structural and physical aspects of polymers (organic, inorganic, natural). Molecular and atomic basis for polymer properties and behavior. Characteristics of glassy, crystalline, and paracrystalline states (including viscoelastic and relaxation behavior) for single-and multi-component systems. Thermodynamics and kinetics of transition phenomena. Structure, morphology, and behavior.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

Required

Title: Introduction to Physical Polymer Science

Author(s): Les Sperling

Edition: 4th

Publisher:

ISBN(s): 978-0471706069

Link to Lehigh Bookstore

Required

Title: Introduction to Physical Polymer Science

Author(s): Les Sperling

Edition: 4th

Publisher:

ISBN(s): 978-0471706069

Link to Lehigh Bookstore

Required

Title: Introduction to Physical Polymer Science

Author(s): Les Sperling

Edition: 4th

Publisher:

ISBN(s): 978-0471706069

Link to Lehigh Bookstore
Course Descriptions  Fall 2018

Thesis - Biology

Course Numbers: BIOS 490-D10

Prerequisites: none

Instructor - Prof. Vassie Ware  (610) 758-3690  vcw0@lehigh.edu

Contact Prof. Ware for instructions.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes: (May be continued on next page)

Textbooks:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):

Additional Info:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):

Additional Info:
Financial Reporting for Managers and Investors

Course Numbers:  GBUS 401-D10

Prerequisites:  none

Instructor - Robert Duquette  red209@lehigh.edu


Additional Course Requirements:  none specified

Equipment / Software Requirements:  none specified

Notes:

(May be continued on next page)

Textbooks:

Required
Author(s):  LIBBY
Publisher:  MCG/CREATE
Additional Info:  Students to purchase "Financial Accounting 9e-Libby"; packaged with Connect bundle for Lehigh students.

Title:  Financial Accounting 9th, Edition: 16
Edition:  9th, Edition: 16
ISBN(s):  9781308821672

Link to Lehigh Bookstore
Elements of Engineering Analysis

Course Numbers: EMA 350-D10 OL

Prerequisites: none

Instructor - Prof. Jacob Kazakia  (610) 758-3785  jyk0@lehigh.edu

Engineering Mathematics (EMA) 350 is designed to be a refresher of mathematics and computation skills for graduate students who have been away from formal college level studies for some time. After completing this course students should be able to successfully participate in those graduate courses of the department which heavily utilize mathematics and computations. Examples of these courses are ME 442 (Math Methods), ME 443 (Advanced Math Methods), ME 413 (Numerical Methods), ME 423 (Heat & Mass Transfer), etc. This course may be appropriate to students in other departments of RCEAS needing some refresher course in Math and Computations. Please Note: The EMA 350-D10 will count towards any graduate degree within the constraints of the program. By the end of EMA 350 students will know how to perform the following tasks.

A) Solving analytically basic differential equations
B) Utilizing mathematical modeling to study basic engineering problems
C) Working with vectors, arrays, matrices, determinants and performing mathematical operations with them.
D) Solving systems of linear algebraic equations using analytical methods as well as numerical methods via MATLAB.
E) Using MATLAB and Excel to solve and plot the results of certain simple engineering problems.
F) Writing a computer program using either C++ or MATLAB in the context of an engineering problem.
G) Using numerical methods in the following tasks: 1. solving transcendental equations 2. curve fitting data 3. differentiating and integrating functions 4. solving simple differential equations.

Additional Course Requirements:

This course is available only to students currently enrolled in the M.S. or M.Eng. In Mechanical Engineering program; other students with an undergraduate background in Mechanical Engineering or Chemical Engineering; or by permission of instructor.

Equipment / Software Requirements:

MATLAB, Excel and C++. Access to MATLAB is available to distance education students by using Lehigh's Virtual Public Site. Instructions on using the Virtual Public Site will be provided to registered students on the course web site.

Notes:

(May be continued on next page)

Textbooks:

Required

Title: The Mathematics Companion: Essential and Advanced Mathematics for Scientists and Engineers

Author(s): A. C. Fischer-Cripps
Publisher: TAYLOR
Edition: 05
ISBN(s): 9780750310208

Additional Info:

Link to Lehigh Bookstore
Course Descriptions  Fall 2018

Required Title: *Getting Started with MATLAB 7*
Author(s): Rudra Pratap  Edition: 10
Publisher: OXF  ISBN(s): 9780199731244
Additional Info: Most of you may already use Matlab or instructions to access this program will be sent to you.

Required Title: *Mathematical Methods in Chemical Engineering*
Author(s): V.G. Jenson and G.V. Jeffreys  Edition: 2nd
Publisher: Academic Press  ISBN(s): 9780195098211
Additional Info: This book will be provided through Distance Education with the cost of a handling fee to you. Upon completion, the book may be returned to Distance Education or you may have the option of purchasing the book from Distance Education at cost.

Required Title: *Essential C++ for Engineers and Scientists*
Author(s): Jeri Hanly  Edition: 2nd 02
Publisher: PEARSON  ISBN(s): 9780201741254
Additional Info: Can be purchased on Lehigh’s Bookstore website; (C++ compiler will be downloaded for free.)

Link to Lehigh Bookstore
Research - Biology

Course Numbers: BIOS 407-D17

Prerequisites: none

Instructor - Gregory Lang (610) 758-6359  gil213@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
Need Student's Advisor.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Design of Experiments

Course Numbers:  ISE 410-D10 OL

Prerequisites: Some statistical background and experimentation in prospect.

Instructor - Prof. Eugene Perevalov  (610) 758-4031  eup2@lehigh.edu

Experimental procedures for sorting out important casual variables, finding optimum conditions, continuously improving processes, and trouble shooting. Applications to laboratory, pilot plant and factory.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

Required  Title: Design and Analysis of Experiments

Author(s): MONTGOMERY  Edition: WILEY
Publisher: WILEY  ISBN(s): 9780470128664

Additional Info:
Link to Lehigh Bookstore
Planning & Scheduling in Manufacturing & Services

Course Numbers:  ISE 419-D10 OL

Prerequisites:  none

Instructor - Prof. Eugene Perevalov  (610) 758-4031  eup2@lehigh.edu

Models for the planning and scheduling of systems that produce goods or services. Resource allocation techniques utilizing static and dynamic scheduling methods and algorithms. Application areas include manufacturing and assembly systems, transportation system timetabling, project management, supply chains, and workforce scheduling.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Adhesion and Adhesives Tech

Course Numbers: MAT 487-D10 OL

Prerequisites: none

Instructor - Prof. Raymond Pearson   (610) 758-3857   rp02@lehigh.edu

Basics of intermolecular forces, surface science, and mechanics of materials and how these relate to adhesion. Processing and design of adhesive joints. Formulation and behavior of pressure sensitive and structural adhesives. Background in polymers is helpful.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:
Composite Materials

Course Numbers: MAT 309-D10 OL

Prerequisites: MAT 33 or MAT 393, Mech 3

Instructor - Prof. Raymond Pearson  (610) 758-3857  rp02@lehigh.edu

The principles and technology of composite materials. Processing, properties, and structural applications of composites, with emphasis on fiber-reinforced polymers.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
Mathematica

Notes:
(May be continued on next page)

Textbooks:
Title: Composite Materials: Science and Engineering
Author(s): Chawla, Krishan K.  Edition: 3rd
Publisher: Springer Science & Bus. Media  ISBN(s): 0387743642

Additional Info:
Link to Lehigh Bookstore
Research - Biology

Course Numbers: BIOS 407-D13

Prerequisites: none

Instructor - Prof. Michael Behe (610) 758-3474 mjb1@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
Need Student's Advisor.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Course Descriptions  Fall 2018

Research - Biology

Course Numbers:  BIOS 407-D25

Prerequisites:  none

Instructor - Prof. Vassie Ware  (610) 758-3690  vcw0@lehigh.edu

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
Need Student's Advisor.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Thesis - Mechanical Engineering

Course Numbers: ME 490-D10

Prerequisites: none

Instructor - Prof. Jacob Kazakia (610) 758-3785 jyk0@lehigh.edu

Please contact Prof. Jacob Kazakia for information.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):

Additional Info:
Managing Products and Services

Course Numbers: MBA 404-D10

Prerequisites: MBA 401

Instructor - Robert Trent                (610) 758-4952    rjt2@lehigh.edu
Instructor - Prof. Steven Savino         (610) 758-5342    sls209@lehigh.edu

An MBA core course focusing on the management of products and services within a firm’s value chain. The course addresses exceeding customer expectations, establishing total quality as the core foundation, developing a strong customer focus, creating value through supply chain management, developing new products for competitive advantage, matching aggregate supply with customer demand, and designing market channels & influencing customers.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

Required

Title: Managing Products and Services - Select Chapters from "A Framework for Marketing Management"

Author(s): Kotler & Keller; Articles and Cases
Publisher:

Additional Info: Pearson Custom Coursepack available in bookstore
Lehigh Bookstore

Required

Title: Operations Management for MBAs

Author(s): Jack Meredith and Scott Shafer
Edition: 5th Edition
Publisher:

Additional Info: Order online - not available in the Lehigh Bookstore.
Physical Polymer Science

Course Numbers: CHE 393-D10 OL

Prerequisites: 1 year of physical chemistry

Instructor - Prof. Raymond Pearson  
(610) 758-3857  rp02@lehigh.edu

Structural and physical aspects of polymers (organic, inorganic, natural). Molecular and atomic basis for polymer properties and behavior. Characteristics of glassy, crystalline, and paracrystalline states (including viscoelastic and relaxation behavior) for single-and multi-component systems. Thermodynamics and kinetics of transition phenomena. Structure, morphology, and behavior.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes:

(May be continued on next page)

Textbooks:

Required
Title: Introduction to Physical Polymer Science
Author(s): Les Sperling
Publisher:
Additional Info: 
Link to Lehigh Bookstore

Required
Title: Introduction to Physical Polymer Science
Author(s): Les Sperling
Publisher:
Additional Info: 
Link to Lehigh Bookstore

Required
Title: Introduction to Physical Polymer Science
Author(s): Les Sperling
Publisher:
Additional Info: 
Link to Lehigh Bookstore
Global Competitive Environment

Course Numbers: MSE 403-D10

Prerequisites: none

Instructor - Staff

Experimental projects in selected fields of manufacturing systems engineering, approved by the instructor. Projects discuss the global competitive environment in the context of material covered in MBA401/MSE 495. MSE students must take this course in conjunction with MSE 402, Introduction to the Organization and its Environment (2 credits).

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:

(May be continued on next page)

Textbooks:
Polymer Blends and Composites

Course Numbers: CHM 485-D10 OL

Prerequisites: An introductory course in polymers

Instructor - Eric Daniels (610) 758-6355 Eric.Daniels@Lehigh.edu

This course will emphasize polymer blends but will also cover polymeric composites. The polymer blends part will cover the fundamentals including thermodynamics, phase behavior and phase separation characteristics. In addition, specific lectures will emphasize compatibilization methods for optimizing polymer blends, types of various polymer blends, properties and applications. Composite lectures will cover particulate and fiber-filled systems.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:

Required
Title: Polymer Blends: Comprehensive Review
Author(s): L.M. Robeson; Hanser
Publisher: HANSER-G
Additional Info:
Link to Lehigh Bookstore

Required
Title: Polymer Blends: Comprehensive Review
Author(s): L.M. Robeson; Hanser
Publisher: HANSER-G
Additional Info:
Link to Lehigh Bookstore

Required
Title: Polymer Blends: Comprehensive Review
Author(s): L.M. Robeson; Hanser
Publisher: HANSER-G
Additional Info:
Link to Lehigh Bookstore
Research - Biology

Course Numbers: BIOS 407-D**

Prerequisites: none

Instructor - Advisor

Laboratory investigations in one of the department’s research areas.

Additional Course Requirements:
Need Student's Advisor.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks: