Distance Ed Course Offerings
Summer 2017  05/23/17 - 08/10/17

Full Session: 5/23/17 - 8/10/17
Session 1: 5/23/17 - 6/29/17
Session 2: 7/5/17 - 8/10/17

**Delivery Format Key**

<table>
<thead>
<tr>
<th>CL = Classroom LIVE</th>
<th>OL = Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IS = Independent Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery requires contact with advisor to arrange a project or research.</td>
</tr>
</tbody>
</table>

**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**


Tuition rates below are per credit hour.

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

- Arts and Science Courses: $940 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: $1,460 per credit (plus $100 support fee if OL/HY delivery format)
- Healthcare Systems Engineering Program: $1,460 per credit (plus $100 support fee if OL/HY delivery format)
- Management Science and Engr. Program: $1,460 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

When printing document, please adjust:
- page range
- print orientation

if you only want to print the course list without all of the course descriptions.
## Distance Ed Course Offerings
### Summer 2017

**DELIVERY METHOD KEY**
- **Full** = full term session
- **SS1** = session 1
- **SS2** = session 2
- **CL** = Classroom LIVE
- **OL** = Online
- **IS** = Independent Study
- **HY** = Hybrid

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

### Arts & Science

<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>
<th>Room</th>
<th>Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 490-D10</td>
<td>Full</td>
<td>IS</td>
<td>Thesis (MOC) - Biology and Chemistry</td>
<td>20705</td>
<td>Arts 490</td>
<td>1</td>
<td></td>
<td>-</td>
<td></td>
<td>Staff</td>
</tr>
<tr>
<td>BIOS 345-D10 OL</td>
<td>SS-1</td>
<td>OL</td>
<td>Molecular Genetics</td>
<td>20915</td>
<td>BIOS 345</td>
<td>3</td>
<td></td>
<td>-</td>
<td></td>
<td>Kuchka</td>
</tr>
<tr>
<td>BIOS 371-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Elements of Biochemistry I</td>
<td>20369</td>
<td>BIOS 371/CHM 371</td>
<td>3</td>
<td></td>
<td>-</td>
<td></td>
<td>Behe</td>
</tr>
<tr>
<td>BIOS 404-D10</td>
<td>SS-1</td>
<td>CL</td>
<td>Behavioral Neuroscience</td>
<td>21305</td>
<td>BIOS 404</td>
<td>3</td>
<td>TR</td>
<td>04:10 PM - 07:00 PM</td>
<td>E301</td>
<td>Swann</td>
</tr>
<tr>
<td>BIOS 405-D10</td>
<td>SS-1</td>
<td>IS</td>
<td>Special Topics in Molecular Biology</td>
<td>20398</td>
<td>Bios 405</td>
<td>1-3</td>
<td></td>
<td>-</td>
<td></td>
<td>Ware</td>
</tr>
<tr>
<td>BIOS 405-D11</td>
<td>SS-2</td>
<td>IS</td>
<td>Special Topics in Molecular Biology</td>
<td>20577</td>
<td>Bios 405</td>
<td>1-3</td>
<td></td>
<td>-</td>
<td></td>
<td>Ware</td>
</tr>
<tr>
<td>BIOS 407-D**</td>
<td>SS-1</td>
<td>IS</td>
<td>Research - Biology</td>
<td>BIOS 407</td>
<td></td>
<td>1-9</td>
<td></td>
<td>-</td>
<td></td>
<td>Advisor</td>
</tr>
<tr>
<td>BIOS 407-D**</td>
<td>SS-2</td>
<td>IS</td>
<td>Research - Biology</td>
<td>BIOS 407</td>
<td></td>
<td>1-9</td>
<td></td>
<td>-</td>
<td></td>
<td>Advisor</td>
</tr>
<tr>
<td>BIOS 407-D10</td>
<td>Full</td>
<td>IS</td>
<td>Research - Biology</td>
<td>20399</td>
<td>BIOS 407</td>
<td>1-9</td>
<td></td>
<td>-</td>
<td></td>
<td>Ware</td>
</tr>
<tr>
<td>BIOS 427-D10</td>
<td>Full</td>
<td>IS</td>
<td>Techniques in Cell and Molecular Biology</td>
<td>20401</td>
<td>BIOS 427</td>
<td>1-3</td>
<td></td>
<td>-</td>
<td></td>
<td>Ware</td>
</tr>
</tbody>
</table>

**Run Date:** 3/24/2017
**Current Version:** 05/23/17
**Summer 2017**
## Distance Ed Course Offerings
### Summer 2017

#### Arts & Science

<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>
<th>Room</th>
<th>Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 371-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Elements of Biochemistry I</td>
<td>20368</td>
<td>CHM 371/BIOS 371</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td></td>
<td>Behe</td>
</tr>
<tr>
<td>CHM 425-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Pharmaceutical Regulatory Affairs I: Drug Discovery to Approval</td>
<td>20991</td>
<td>CHM 425</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td></td>
<td>Niedbala</td>
</tr>
<tr>
<td>CHM 442-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Pharmaceutical Regulatory Affairs III: Validation of Analytical Assays</td>
<td>20370</td>
<td>CHM 442</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td></td>
<td>Fliszar</td>
</tr>
<tr>
<td>CHM 477-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Pharmaceutical Regulatory Affairs VI: Biologics</td>
<td>21318</td>
<td>CHM 477</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td></td>
<td>Bakhtiar</td>
</tr>
<tr>
<td>CHM 477-D11 OL</td>
<td>Full</td>
<td>OL</td>
<td>Pharmaceutical Regulatory Affairs VII: Chemistry Lab to Clinical Trials</td>
<td>20780</td>
<td>CHM 477</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td></td>
<td>Baney</td>
</tr>
</tbody>
</table>

**Run Date:** 3/24/2017

**Current Version:** 05/23/17
## Distance Ed Course Offerings
### Summer 2017

**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

### Business

<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>
<th>Room</th>
<th>Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBUS 424-D10</td>
<td>SS-2</td>
<td>CL</td>
<td>Advanced Topics in Financial Management: Financial Analysis &amp; Modeling</td>
<td>20785</td>
<td>GBUS 424</td>
<td>3</td>
<td>MW</td>
<td>06:00 PM - 09:00 PM</td>
<td>RBC 161</td>
<td>Weaver</td>
</tr>
<tr>
<td>GBUS 432-D10</td>
<td>Full</td>
<td>CL</td>
<td>Demand and Supply Chain Planning</td>
<td>20619</td>
<td>GBUS 432</td>
<td>3</td>
<td>W</td>
<td>06:00 PM - 09:00 PM</td>
<td>RBC 171</td>
<td>Myerson</td>
</tr>
<tr>
<td>GBUS 450-D10</td>
<td>Full</td>
<td>HY</td>
<td>Strategic Supply Management</td>
<td>20396</td>
<td>GBUS 450</td>
<td>3</td>
<td>-</td>
<td></td>
<td></td>
<td>Tyler</td>
</tr>
<tr>
<td>GBUS 471-D10</td>
<td>SS-1</td>
<td>CL</td>
<td>Strategic Brand Management</td>
<td>21374</td>
<td>GBUS 471</td>
<td>3</td>
<td>TR</td>
<td>06:00 PM - 09:00 PM</td>
<td>RBC 161</td>
<td>Savino</td>
</tr>
<tr>
<td>PMGT 409-D10</td>
<td>Full</td>
<td>CL</td>
<td>Project Management Fundamentals</td>
<td>21461</td>
<td>PMGT 409</td>
<td>3</td>
<td>T</td>
<td>06:00 PM - 09:00 PM</td>
<td>RBC 171</td>
<td>Rennie</td>
</tr>
</tbody>
</table>

*Students must be available for Blackboard Collaborate Sessions, dates/times TBD.*
## 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>
<th>Room</th>
<th>Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 499-D10</td>
<td>Full</td>
<td>IS</td>
<td>Dissertation - Chemical Engineering</td>
<td>20700</td>
<td>CHE 499</td>
<td>1-6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Kothare</td>
</tr>
<tr>
<td>ENGR 490-D10</td>
<td>Full</td>
<td>IS</td>
<td>Thesis (MOC) - Engineering</td>
<td>20648</td>
<td>ENGR 490</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Coulter</td>
</tr>
<tr>
<td>ISE 328-D10 OL</td>
<td>SS-2</td>
<td>OL</td>
<td>Engineering Statistics</td>
<td>20810</td>
<td>ISE 328</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Anselm</td>
</tr>
<tr>
<td>MAT 309-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Composite Materials</td>
<td>21483</td>
<td>MAT 309/ME 309</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Pearson</td>
</tr>
<tr>
<td>MAT 310-D10</td>
<td>Full</td>
<td>IS</td>
<td>Independent Study in Materials</td>
<td>20327</td>
<td>MAT 310</td>
<td>1-3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Pearson</td>
</tr>
<tr>
<td>MAT 486-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Polymer Nanocomposites</td>
<td>20923</td>
<td>MAT 486</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Pearson</td>
</tr>
<tr>
<td>MAT 490-D10</td>
<td>Full</td>
<td>IS</td>
<td>Thesis - Materials Science</td>
<td>20716</td>
<td>MAT 490</td>
<td>1-6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Pearson</td>
</tr>
<tr>
<td>MAT 499-D10</td>
<td>Full</td>
<td>IS</td>
<td>Dissertation - Materials Science</td>
<td>20794</td>
<td>MAT 499</td>
<td>1-15</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Pearson</td>
</tr>
<tr>
<td>ME 309-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Composite Materials</td>
<td>21484</td>
<td>ME 309/MAT 309</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Pearson</td>
</tr>
<tr>
<td>ME 430-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Advanced Fluid Mechanics</td>
<td>20420</td>
<td>ME 430</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Smith</td>
</tr>
</tbody>
</table>
### 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>
<th>Room</th>
<th>Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME 490-D10</td>
<td>Full</td>
<td>IS</td>
<td>Thesis - Mechanical Engineering</td>
<td>20323</td>
<td>ME 490</td>
<td>1-6</td>
<td>-</td>
<td></td>
<td></td>
<td>Kazakia</td>
</tr>
<tr>
<td>ME 499-D10</td>
<td>Full</td>
<td>IS</td>
<td>Dissertation - Mechanical Engineering</td>
<td>20318</td>
<td>ME 499</td>
<td>1-15</td>
<td>-</td>
<td></td>
<td></td>
<td>Kazakia</td>
</tr>
<tr>
<td>MECH 413-D10 OL</td>
<td>Full</td>
<td>OL</td>
<td>Fracture Mechanics</td>
<td>20863</td>
<td>MECH 413</td>
<td>3</td>
<td>-</td>
<td></td>
<td></td>
<td>Nied</td>
</tr>
<tr>
<td>MSE 451-D10</td>
<td>Full</td>
<td>IS</td>
<td>Project - Manufacturing Systems Engineering</td>
<td>20350</td>
<td>MSE 451</td>
<td>1-3</td>
<td>-</td>
<td></td>
<td></td>
<td>Gardiner</td>
</tr>
<tr>
<td>MSE 472-D10</td>
<td>Full</td>
<td>IS</td>
<td>Special Topics - Manufacturing Systems Engineering</td>
<td>21250</td>
<td>MSE 472</td>
<td>1-3</td>
<td>-</td>
<td></td>
<td></td>
<td>Gardiner</td>
</tr>
<tr>
<td>MSE 490-D10</td>
<td>Full</td>
<td>IS</td>
<td>Thesis - Manufacturing Systems Engineering</td>
<td>20351</td>
<td>MSE 490</td>
<td>1-6</td>
<td>-</td>
<td></td>
<td></td>
<td>Gardiner</td>
</tr>
</tbody>
</table>
Pharmaceutical Regulatory Affairs I: Drug Discovery to Approval

Course Numbers: CHM 425-D10 OL

Prerequisites: This course is offered as part of the Regulatory Affairs Certificate and the MS online CHEM program. Any questions should be directed to the Chemistry Graduate Advisor, Dr. Rebecca Miller (rebecca.miller@lehigh.edu)

Instructor - Prof. Sam Niedbala (610) 758-6504 san204@lehigh.edu

Coverage includes the stages of the drug approval process and how these relate to the laboratory activities that provide the scientific basis for the New Drug Application (NDA). Lectures treat drug discovery, chemical process development of the active pharmaceutical ingredient (API), and pharmaceutical process development of the drug product. Regulatory issues in screening and testing, the management of the preclinical trials, and the management of clinical trials will be covered. The regulatory requirements for the production of the drug substance (API) from bench to pilot plant to full-scale manufacturing will also be covered. Included in the discussions will be Good Laboratory Practices (GLPs) and Good Manufacturing Practices (GMPs). The regulatory issues concerning the use of Contract Research Organizations (CROs) and Contract Manufacturing Organizations (CMOs) will also be treated. The processes for approvals of diagnostics and devices will also be covered. All topics are presented by practicing professionals in the regulatory affairs area. This course is one of four courses required to fulfill the requirements for a Certificate in Regulatory Affairs. It may be applied as one of the 400-level credits in any of the Chemistry degree tracks.

Additional Course Requirements:

This course is one of four courses required to fulfill the requirements for a Certificate in Regulatory Affairs. It may be applied as one of the 400-level credits in any of the Chemistry degree tracks.

Equipment / Software Requirements:

none specified

Notes:

(May be continued on next page)

Textbooks:

Required

Title: Development of FDA-Regulated Medical Products Prescription Drugs, Biologics and Medical Devices

Author(s): Elaine Whitmore
Publisher: ASQC Publishers

Edition: 2ND 04
ISBN(s): 9780873896139

Additional Info:

Link to Lehigh Bookstore
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:
Independent Study in Materials

Course Numbers: MAT 310-D10

Prerequisites: none

Instructor - 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:
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:
Thesis - Materials Science

Course Numbers: MAT 490-D10

Prerequisites: none

Instructor - Prof. Raymond Pearson

(610) 758-3857 rp02@lehigh.edu

Please contact Prof. Ray Pearson for more information.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:

(May be continued on next page)

Textbooks:
Project Management Fundamentals

Course Numbers: PMGT 409-D10

Prerequisites: none

Adjunct - Jody Rennie  jvr208@lehigh.edu

Introduction to project management - survey of the knowledge areas and approaches to managing projects. Looks at the relationship of projects to organizational strategy and culture, how to initiate a project, principles of planning and project execution and control, managing stakeholders, and communicating effectively. A review of the competencies required to address the complexities and challenges of projects. Hands-on approach to developing project management work artifacts and simulated project management game are used.

Additional Course Requirements:
none specified

Equipment / Software Requirements:

Notes:
(May be continued on next page)

Textbooks:

Required  Title: A Guide to the Project Management Body of Knowledge (PMBOK Guide)
Publisher:  ISBN(s): 978-1935589679
Additional Info: Members of PMI may get a free pdf version of the book
Link to Lehigh Bookstore

Required  Title: Information Technology Project Management: Providing Measurable Organizational Value
Publisher:  ISBN(s): 978-1118911013
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-D54

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:
Pharmaceutical Regulatory Affairs III: Validation of Analytical Assays

Course Numbers: CHM 442-D10 OL

Prerequisites: This course is offered as part of the Regulatory Affairs Certificate and the MS online CHEM program. Any questions should be directed to the Chemistry Graduate Advisor, Dr. Rebecca Miller (rebecca.miller@lehigh.edu)

Instructor - Kyle Fliszar kaf505@lehigh.edu, kyle_fliszar@merck.com

This lecture course covers the design and implementation of validation protocols in the analytical laboratory along with relevant regulatory requirements and guidelines. The course will illustrate how the analytical methodology provides insight and characterization of the underlying process involved (drug product manufacture, biological sample analysis, or active pharmaceutical ingredient manufacture). The course outline is based on two 60-75 minute lectures per week for 13 weeks, with one regular class period scheduled as a final exam. While not a pre-requisite, previous undergraduate-level science or engineering coursework will provide a sound basis for understanding the technical and regulatory discussions within the lectures.

Additional Course Requirements:
Permission required for non CAS students.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Title: None Required

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

Course Numbers: BIOS 404-D10

Prerequisites: Graduate standing or consent of instructor.

Instructor - Jennifer Swann (610) 758-5484 jms5@lehigh.edu

Anatomy and physiology of the nervous system with a focus on its role in behavior, health and disease. Students explore their understanding through a final presentation of a novel idea, approach or hypothesis. No previous coursework is required or assumed.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
none specified

Notes:

(May be continued on next page)

Textbooks:
Recommended Title: Behavioral Neuroscience 8e
Author(s): Breedlove & Watson Edition: 8th, 2016
Publisher: Sinauer Associates ISBN(s): 160535418X/9781605354187
Additional Info: Old editions are completely acceptable.
Research - Biology

Course Numbers: BIOS 407-D65

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:
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:
Special Topics in Molecular Biology

Course Numbers: BIOS 405-D11

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:

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:
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:

Title: None Required

Author(s): Edition:
Publisher: ISBN(s):
Additional Info:
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:
Advanced Topics in Financial Management: Financial Analysis & Modeling

Course Numbers:  GBUS 424-D10

Prerequisites:  GBUS 419 or designated finance representative approval

Instructor - Prof. Samuel Weaver  (610) 758-5282  scw0@lehigh.edu

Advanced topics relating to specific areas of corporate finance such as: theoretical and empirical examination of recent developments in financial management, asset valuation and capital budgeting including the role of uncertainty, imprecise forecasts, risk preferences, inflation, market conditions, and the global marketplace, working capital management, leasing, mergers, and financing.

Additional Course Requirements:
Numerous articles and chapters will be distributed throughout the semester via CourseSite.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Required  Title:  The Essentials of Financial Analysis
Author(s):  Samuel C. Weaver  Edition:  2012

Additional Info:
Link to Lehigh Bookstore
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:
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:
Dissertation - Chemical Engineering

Course Numbers: CHE 499-D10

Prerequisites: none

Instructor - Prof. Mayuresh Kothare (610) 758-6654 mvk2@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): 
Publisher: 
ISBN(s): 

Additional Info:
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:
Pharmaceutical Regulatory Affairs VI-Biologics

Course Numbers: CHM 477-D10 OL

Prerequisites: This course is offered as part of the Regulatory Affairs Certificate and the MS online CHEM program. Any questions should be directed to the Chemistry Graduate Advisor, Dr. Rebecca Miller (rebecca.miller@lehigh.edu)

Instructor - Ray Bakhtiar rab210@lehigh.edu

Bio-macromolecules are regarded as the most promising therapeutics of the 21st century, supplementing the long-established small molecule organic drugs. Whether poly-peptide, poly-nucleotide, or even poly-saccharide, properly designed, tested, and registered (with FDA) bio-macromolecules can regulate blood pressure, glycolysis, immunity, pain, malignancy, inflammation and a host of other human dysfunctions. Since the first biopharmaceutical approval in 1982 the biotechnology derived product market has been rapidly growing with introduction of a number of promising advances in medicine such as therapeutic monoclonal antibodies (humanized and fully human MABs), cancer vaccines, cytokines, anti-sense technology, interference RNA, and growth factors. As with traditional drugs (small molecules), the regulatory framework for approval of a biotechnology derived product (biologics) is complicated. In addition, there has been much debate about the introduction of follow-on-biologics (FOBs) or biosimilars using an abbreviated approval process. An overall biologics-based process map beginning with pre-clinical through the post-marketing stage will be discussed. Topics such as therapeutic proteins/peptides, gene therapy, stem cells, vaccines, interference RNAs, PK-PD, world-wide regulatory filings, preclinical IND-enabling studies, BLA/CTD filing, FOBs biologics, immunogenicity, comparability studies, manufacturing challenges, clinical trials, market exclusivity, and related regulatory guidelines will be discussed.

Additional Course Requirements:
This course is one of four courses required to fulfill the requirements for a Certificate in Regulatory Affairs. It may be applied as one of the 400-level credits in any of the Chemistry degree tracks.

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:
Research - Biology

Course Numbers: BIOS 407-D51

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 Genetics

Course Numbers: BIOS 345-D10 OL

Prerequisites: none

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

The organization and replication of genetic material; mutagenesis; mechanisms of regulation; mechanisms of gene transmission involving prokaryotes and eukaryotes and their viruses; techniques for intervention into genetic organization and expression.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes: (May be continued on next page)

Textbooks:

Required Title: Molecular Biology, Principles of Genome Function
Author(s): Craig et al Edition: 2nd edition
Publisher: Oxford University Press ISBN(s): 978-0-19-870597-0

Additional Info:
Link to Lehigh Bookstore
Research - Biology

Course Numbers: BIOS 407-D58

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:
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:
one 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  ljl0@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:
(5ay be continued on next page)

Textbooks:
Course Descriptions  Summer 2017

Research - Biology

Course Numbers: BIOS 407-D59

Prerequisites: none

Instructor - Prof. Linda Lowe-Krentz  (610) 758-5084  ljl0@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 Fluid Mechanics

Course Numbers: ME 430-D10 OL

Prerequisites: Undergraduate courses in fluid mechanics and differential equations.

Instructor - Prof. Charles Smith
(813) 909-2047 crs1@lehigh.edu

This course is a first graduate course in incompressible fluid mechanics, providing a broad coverage of key areas of viscous and inviscid fluid mechanics. Topics covered include: Flow kinematics, differential equations of motion, viscous and inviscid solutions, vorticity dynamics and circulation, vorticity equation, circulation theorems, potential flow behavior, irrotational and rotational flows, simple boundary layer flows and solutions, and real fluid flows and consequences, including aerodynamic drag and lift, and basic effects of turbulence.

Equipment / Software Requirements:
Must have access to a scanner, and ability to scan material to pdf files.

Notes:
(May be continued on next page)

Textbooks:
Provided with course at no charge
Title: Introduction to Graduate Fluid Mechanics
Author(s): C. R. Smith
Publisher:
Edition: Electronic Book
ISBN(s):

Additional Info:
Research - Biology

Course Numbers: BIOS 407-D66

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:
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:
Fracture Mechanics

Course Numbers: MECH 413-D10 OL

Prerequisites: MATH 205, MECH 305 or equivalent course in advanced mechanics of materials.

Instructor - Herman Nied (610) 758-4128 hfn2@lehigh.edu

Elementary and advanced fracture mechanics concepts; analytical modeling; fracture toughness concept; fracture toughness testing; calculation of stress intensity factors; elastic-plastic analysis; prediction of crack trajectory; fatigue crack growth and environmental effects; computational methods in fracture mechanics; nonlinear fracture mechanics; fracture of composite structures; application of fracture mechanics to design.

Additional Course Requirements:
none specified

Equipment / Software Requirements:
MATLAB, C and/or Fortran compilers, ANSYS, and specialized finite element software. Students will be provided with application access by course instructor.
Access to MATLAB is available to distance education students by using Lehigh's Virtual Public Site

Notes:
(May be continued on next page)

Textbooks:

Required
Author(s): Sanford, R. J. Edition: 2003
Publisher: Prentice Hall ISBN(s): 0-13-092992-1

Required
Title: Principles of Fracture Mechanics

Link to Lehigh Bookstore
Course Descriptions    Summer 2017

Demand and Supply Chain Planning

Course Numbers:  GBUS 432-D10

Prerequisites:  none

Instructor - Paul Myerson  (610) 758-1576  pam313@lehigh.edu

Students will learn how businesses work with other businesses to build relationships and integrate demand and supply planning activities across the supply chain to deliver value to customers. They will learn about tools and technologies enabling integration, and the critical drivers and key metrics of supply chain performance.

Additional Course Requirements:
  none specified

Equipment / Software Requirements:
  none specified

Notes:
(May be continued on next page)

Textbooks:

Required       Title:  Demand and Supply Planning -- SCM 340, Lehigh University, Pearson Cust Library

Author(s):  
Publisher:  ISBN(s):  1-269-79122-2

Additional Info:  This is a combination of parts of the two texts listed below. Students have the option of buying both texts used if it is less expensive that way. Make sure to have the text "in hand" by the second class.

Required       Title:  Operations Management: Processes and Supply Chains

Author(s):  Krajewski, Ritzman and Malhotra  Edition:  10th Edition

Additional Info:  Option of buying this text. See Note above.

Required       Title:  Supply Chain Management-Strategy, Planning and Operation

Author(s):  Sunil Chopra and Peter Meindl  Edition:  5th Edition or later (some minor differences in later versions)

Additional Info:  Option of buying this text. See Note above.

Link to Lehigh Bookstore
Thesis (MOC) - Engineering

Course Numbers: ENGR 490-D10

Prerequisites: none

Instructor - Prof. John Coulter  (610) 758-6310  jc0i@lehigh.edu

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:
Pharmaceutical Regulatory Affairs VII-Chemistry Lab to Clinical Trials

Course Numbers: CHM 477-D11 OL

Prerequisites: This course is offered as part of the Regulatory Affairs Certificate and the MS online CHEM program. Any questions should be directed to the Chemistry Graduate Advisor, Dr. Rebecca Miller (rebecca.miller@lehigh.edu)

Instructor - Tara Baney (862) 246-9940 tsbaney@gmail.com

Using basic biochemistry data, preclinical data, and the key documentation outlining results, this course covers how the clinical protocol is designed and how the trial is monitored. The use of transitional biomarkers, genetic analyses, PK/PD, dose-limiting toxicities, immunogenicity, imaging, and drug-drug interactions observed in preclinical studies serve as guideposts to the design of an optimum clinical protocol. The integration of chemistry, biology, and medicine proves essential to formulation of the first-in-man clinical study. The pathway from the chemistry lab to the clinic will be detailed with a focus on early development phase trials.

Additional Course Requirements:
Permission required for non CAS students.

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:

Title: **None Required**

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

Additional Info:
Elements of Biochemistry I

Course Numbers: BIOS 371-D10 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:

**Recommended**

Title: *Biochemistry-w/CD Solutions Manual*
Author(s): Voet
Publisher: Wiley
Additional Info: [Link to Lehigh Bookstore](#)

**Required**

Title: *Biochemistry-W/ CD*
Author(s): Voet and Voet
Publisher: Wiley
Additional Info: [Link to Lehigh Bookstore](#)

**Recommended**

Title: *Biochemistry-w/CD Solutions Manual*
Author(s): Voet
Publisher: Wiley
Additional Info: [Link to Lehigh Bookstore](#)
Course Descriptions

Summer 2017

Required

Title: Biochemistry-W/ CD

Author(s): Voet and Voet
Publisher: Wiley
Edition: 4th
ISBN(s): 978-0470-57095-1

Additional Info:

Link to Lehigh Bookstore
Research - Biology

Course Numbers: BIOS 407-D53

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:
Elements of Biochemistry I

Course Numbers: CHM 371-D10 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:
one specified

Notes:
(May be continued on next page)

Textbooks:

Recommended
Title: Biochemistry-w/CD Solutions Manual
Author(s): Voet
Publisher: Wiley
Edition: 4th
ISBN(s): 978-1-118-00814-0

Required
Title: Biochemistry-W/ CD
Author(s): Voet and Voet
Publisher: Wiley
Edition: 4th
ISBN(s): 978-0470-57095-1

Recommended
Title: Biochemistry-w/CD Solutions Manual
Author(s): Voet
Publisher: Wiley
Edition: 4th
ISBN(s): 978-1-118-00814-0

Link to Lehigh Bookstore
Course Descriptions  Summer 2017

Required  Title:  *Biochemistry-W/ CD*

Author(s):  Voet and Voet  Edition:  4th
Publisher:  Wiley  ISBN(s):  978-0470-57095-1

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:
Project - Manufacturing Systems Engineering

Course Numbers: MSE 451-D10

Prerequisites: none

Instructor - Prof. Keith Gardiner  (610) 758-5070  kg03@lehigh.edu

Please contact Prof. Keith Gardiner for 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 - Manufacturing Systems Engineering

Course Numbers: MSE 472-D10

Prerequisites: none

Instructor - Prof. Keith Gardiner (610) 758-5070 kg03@lehigh.edu

Special Topics

Additional Course Requirements:
Instructor Permission

Equipment / Software Requirements:
none specified

Notes:
(May be continued on next page)

Textbooks:
Thesis - Manufacturing Systems Engineering

Course Numbers: MSE 490-D10

Prerequisites: none

Instructor - Prof. Keith Gardiner  (610) 758-5070  kg03@lehigh.edu

Please contact Prof. Keith Gardiner 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:
Research - Biology

Course Numbers: BIOS 407-D57

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:
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:
Strategic Supply Management

Course Numbers: GBUS 450-D10 OL

Prerequisites: none

Instructor - Staff

A course designed to introduce the MBA/MSE student to the vital role played by supply management in today’s global economy. The structure of the course includes a framework that shows how leading firms create competitive advantage from supply management. Topics covered include measurement, organizational design, human resources, information systems, longer-term contracting, supplier relationship management, cost management, early supplier involvement, global sourcing, and the formation of supply alliances. The course consists of lectures, web-based discussion, current readings, and case analysis.

Additional Course Requirements:
Blackboard Collaborate sessions required on 6/4, 6/18, 7/9, and 7/30 from 7:00 to 8:30 PM. There will be a link to the Collaborate software download on the Course Site page.

Equipment / Software Requirements:
none specified

Notes:
Students must be available for Blackboard Collaborate Sessions, dates/times TBD.

(May be continued on next page)

Textbooks:
Required
Title: Strategic Supply Management-Creating the Next Source of Competitive Adv
Author(s): Robert J. Trent
Edition:
Publisher: J. Ross
ISBN(s): 978-1-932159-67-7
Additional Info: Students should order the book from www. Amazon.com or www.jrosspub.com
Engineering Statistics

Course Numbers: ISE 328-D10 OL

Prerequisites: none

Instructor - Maxwell Anselm
(410) 575-4198  m.b.anselm@gmail.com

Random variables, probability functions, expected values, statistical inference, hypothesis testing, regression and correlation, analysis of variance, introduction to design of experiments, and intro of quality control.

Additional Course Requirements:
none specified

Equipment / Software Requirements:

Notes:

Textbooks:

Recommended
Title: OpenIntro Statistics

Author(s): David Diez, Christopher Barr, Mine Cetinkaya-Rundel
Edition: 3rd Edition

Publisher: ISBN(s): 978-1943450053

Additional Info:
Lehigh Bookstore
Research - Biology

Course Numbers: BIOS 407-D69

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:
Strategic Brand Management

Course Numbers: GBUS 471-D10

Prerequisites: MBA 404

Instructor - Prof. Steven Savino (610) 758-5342 sls209@lehigh.edu

This course will focus on theories, models, and other tools to manage brands, products, and product lines. Specific attention will be focused on building, measuring, and managing brand equity. The course will be a mixture of lectures, discussions, case analyses, and group exercises.

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:
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:**
(Man be continued on next page)

**Textbooks:**
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:
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

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
Composite Materials

Course Numbers: ME 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

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
Polymer Nanocomposites

Course Numbers: MAT 486-D10 OL

Prerequisites: An introductory polymer course (MAT 204 or MAT 393) or consent of the department chair.

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

Synthesis, morphology and properties of polymer nanocomposites. Comparisons with traditional particulate composites will be made and models predicting properties will be emphasized. Melt viscosity, mechanical properties, barrier properties and flame retardancy will be discussed.

Additional Course Requirements: none specified

Equipment / Software Requirements: none specified

Notes: (May be continued on next page)

Textbooks:

Required
Title: Polymer Nanocomposites: Processing, Characterization, and Applications
Author(s): Joseph H. Koo
Publisher: McGraw Hill, New York
Edition: 2006
ISBN(s):

Additional Info:
Link to Lehigh Bookstore