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This handbook is intended as a guide to assist the BMCE graduate students as they progress through and complete their degree programs. It is not all-inclusive of University policies, and the information provided does not supersede the Academic Rules as provided in the online Course Catalog for 2011 (http://coursecatalog.syr.edu/2012/rules). Please refer to the Course Catalog for additional information.

CHANGES TO CURRICULA

The New York State Department of Education approved changes to the curricula for the MS and PhD programs in Bioengineering and the PhD program in Chemical Engineering in June 2009.

Students beginning their degree programs in Fall 2009 or later must follow the new curricula for their respective programs.

A student enrolled before Fall 2009 is considered to be continuing in the old curriculum, unless he/she requests a change to the new curriculum. Requests must be in the form of a Petition to the Faculty. Master’s of Science (MS) students must identify in their petitions which plan (thesis, non-thesis, or non-thesis with cognate field (Bioengineering only)) they intend to follow.

POLICY ON ACADEMIC INTEGRITY

Responsibilities of Students

Students are obligated to fully inform themselves of their obligations and responsibilities in the conduct of their academic work, where work includes classroom/laboratory assignments, deliverables such as reports and term papers, as well as examinations. The expectations for individual and teamed student work differ between courses and programs. It is the student’s responsibility to establish his/her obligations and be knowledgeable as to the performance standards expected in each course.

Academic Integrity

At Syracuse University, academic integrity is expected of every community member in all endeavors. Academic integrity includes a commitment to the values of honesty, trustworthiness, fairness, and respect. These values are essential to the overall success of an academic society. In addition, each member of the university community has a right to expect the highest standards of academic integrity from all other community members. An individual’s academic dishonesty threatens and undermines the central mission of the University. It is unfair to other community members who do not cheat, because it devalues efforts to learn, to teach, and to conduct research.
Academic dishonesty interferes with moral and intellectual development, and poisons the atmosphere of open and trusting intellectual discourse. Syracuse University’s academic integrity policy and procedures are administered by the Academic Integrity Office in the Division of Academic Affairs, and all schools and colleges (see supplemental policy and procedures for the College of Law).¹

**POLICY ON AWARDING CURRICULAR PRACTICAL TRAINING FOR GRADUATE STUDENTS**

The faculty of the Department of Biomedical and Chemical Engineering has adopted the following policy with regard to the awarding of Curricular Practical Training (CPT) for graduate students in all Department programs. To be eligible for CPT, a student must:

- be in good standing with the Department and College;
- have a minimum overall grade point average (GPA) of 2.8;
- have completed at least 15 credits of coursework toward his/her degree.

A student will be allowed only one semester of CPT during his/her course of study, with the summer counting as a semester.

**REGISTRATION, POLICIES, TUITION CREDITS, FORMS**

**Course Registration Procedures**

Syracuse University’s computerized registration system is accessed using the University portal, MySlice. You will need a Syracuse University computer account and pin number to register for classes.

The MySlice portal is open for schedule adjustment until the last day to add a class. After the add deadline, you will be required to fill out an ADD/DROP form (available in the Department office) to add a class. The Department will also have to prepare a memo to the Registrar stating why you should be allowed to add the class after the deadline. Both these documents will have to be submitted to the Registrar’s Office.

In order to drop a class after the financial and academic drop deadlines, you will also need to use the ADD/DROP form, obtain the required signatures, and submit the form to the Registrar’s Office for processing.

**Note:** The Time Schedule of Classes is no longer being printed and can only be accessed via MySlice.

¹ From [http://coursecatalog.syr.edu/2012/rules/1729_academic_integrity](http://coursecatalog.syr.edu/2012/rules/1729_academic_integrity) Please refer to this website for additional information and clarification.
**Full-time Status**

A graduate student is considered to have full-time status if any of the following apply:
- Registration for 9 credits for the Fall or Spring semesters (or 6 credits during a given summer session) in an approved program;
- Appointment as a graduate assistant (teaching or research) or Syracuse University Fellow;
- The student’s academic unit certifies that the student is pursuing a full-time program as defined on the Certification of Full-time Status for Graduate Students Form (CFTS; to download form see section Forms You May Need).

**Registration for Teaching Assistants and Research Assistants**

All graduate students holding an assistantship in a given semester, be it a Teaching Assistantship (TA) or Research Assistantship (RA), must be registered for classes by the first day of classes in EVERY semester during which they have an assistantship. This means the registration must be complete by the first day of classes, not on the first day of classes. If a graduate assistant is not registered by the first day of the semester, they will not be allowed to work until we are registered as a full-time student.

Registration on or after the first day of classes is considered “late” registration. Students will be charged a $50 late registration fee.

A student who has completed all of the coursework for his/her degree must register for GRD 998-Degree in Progress for zero credits to maintain official student status (see below).

**Reconfiguration of Tuition Reduction Credits**

If you have been awarded tuition reduction credits as part of a TA or RA, please note the following, as stated in your appointment letter:

> You will need to seek the permission of our academic department if you wish to reconfigure the scholarship to accommodate anticipated changes in credit loads.

Requests for tuition reconfigurations must be made before the affected semester has started. They will not be granted after a semester has begun. This applies to summer credits, as well.

**Registration for GRD 998 – Degree in Progress**

A student must register for GRD 998 – Degree in Progress for zero credits to maintain active, full-time status as a graduate student in every semester in which he/she is not registering for any other classes. Students must also be engaged in making progress towards completing degree requirements during every semester for which they register for this class. Do not register for GRD 998 if you are registered for any other class.

This registration requirement does not apply to the Summer sessions, unless the student plans to complete his/her degree during the Summer.

**Registering for Correct Class Section**

There are several classes in the College that are cross-listed, meaning they are offered as courses in two different programs, such as CEN741/MAE746 and CEN561/BEN741. Make sure you
register for the section for your degree program. If you register for the wrong section of a course, it cannot count toward the required number of CEN or BEN credit hours unless you petition to have it count and the petition is accepted.

**Joint Graduate-Undergraduate (500-level) Courses**

Joint graduate and undergraduate courses are those numbered 500-599. These may be accepted for graduate credit at the discretion of the Department. For MS students, such coursework may not make up more than one-half (50%) of the Syracuse coursework for the degree. For Ph.D. students, such coursework may not make up more than one-third (33.33%) of that for a doctoral program. This information can be found in the Academic Rules in the Course Catalog at: [http://coursecatalog.syr.edu/2012/rules/2657_degree_and_certificate_programs](http://coursecatalog.syr.edu/2012/rules/2657_degree_and_certificate_programs).

For our 30-credit MS programs (thesis and non-thesis), no more than 15 credits can be at the 500-level. For our 36-credit MS program (BEN non-thesis with cognate field), no more 18 credits can be at this level. For both 42-credit Ph.D. programs, no more than 14 credits can be at the 500-level. Students may be required to take additional classes at the 600+-level if they do not meet this requirement.

**500-Level Courses That Do Not Count Toward Graduate Programs**

The following 500-level courses are for undergraduates only and will not count toward our graduate degree programs:

- CEN 542 – Heat & Mass Transfer Operations
- CEN 574 – Process Design

**Minimum GPA to Continue Graduate Work**

Graduate students must earn at least a 2.8 GPA in the first 30 credits of graduate study at Syracuse University. The academic unit may recommend that the Graduate School cancel matriculation if this requirement is not met.

**Programs of Study**

At the beginning of the academic year in which you plan to graduate, all graduate students must complete a Program of Study form with their advisor and submit it to the Program Director for approval. This form, which lists the entire sequence of planned courses, must be approved in order to qualify for a degree. If you have any questions about the course requirements, it is suggested that you and your advisor fill out a draft version of this form at the end of your first year of classes and submit it to the Program Director in order to get feedback about your planned program. (This form can be downloaded from the following page on the Graduate School’s website: [http://www.syr.edu/gradschool/em/current_whatyouneed.html](http://www.syr.edu/gradschool/em/current_whatyouneed.html).

**Graduation Dates for Graduate Students**

Graduate students at Syracuse University have four possible graduation dates each year: the end of the Fall semester, the end of the Spring semester, the end of June, and the end of August. The exact graduation dates vary every year based on the calendar. The Graduation Dates and Related
Processing Deadlines for each year can be found on the Graduate School’s website at:  

Registration for Completion of Degree

A student must be registered as an active student in the semester during which he/she completes a degree. This also applies to students graduating in June or August.

Documentation of All Prior Degrees

By the end of their first semester of study, all graduate students must submit acceptable documentation of all degrees earned prior to matriculation in their graduate program at Syracuse University. After completion of the first semester of graduate study, the Graduate School may prohibit further registration for any student who has not met this requirement. The hold on registration will only be released when this requirement has been met.2

The documentation referred to in the paragraph above is generally called Degree-Bearing Transcripts (DBT). All students must have Official DBT(s) on file with the University in order to receive any graduate degree at Syracuse University. For international students, the transcripts or degree certificates must state that the degree has been “awarded, conferred, or earned” in order to be accepted as an official DBT. International students are also required to submit eight semesters of mark sheets with their undergraduate Degree-Bearing Transcripts.

Requests for Optional and Curricular Practical Training

It is the Department policy that all requests for Optional Practical Training (OPT) and Curricular Practical Training (CPT) by international students be submitted to the Department Chair. Even though the sample letters for OPT and CPT from the Slutzker Center for International Services are entitled “Sample Advisor’s Letter…”, only the BMCE Department Chair will give approval for such requests. Do not ask your faculty advisor for either of these letters.

Forms You May Need

- ADD/DROP Form – obtain in the BMCE Main Office.
- Certification of Full-Time Status for Graduate Students Form (CFTS) – download from the Slutzker Center for International Services website: http://international.syr.edu/forms/index.html.
- Graduate Enrollment Internal Admission Application (to pursue concurrent degrees, to complete one degree and pursue another, to be admitted to the doctoral program in the same program in which you are currently pursuing an MS degree) – download from the Graduate School’s website at: http://www.syr.edu/gradschool/em/graduate-admissions-forms.html.
- Graduate Program/Plan Transfer Form (to change from MS to PhD in same program; change to different program, same college; changed to different program, different School/College) – download from the Graduate School’s website at: http://www.syr.edu/gradschool/em/graduate-admissions-forms.html.
- Petition to the Faculty – download from the University Registrar’s Office at: http://www.syr.edu/registrar/forms/index.html.

• Program of Study – download from the Graduate School’s website at:
• Proposal for Independent Study (also used for Experience Credit) – download at:
  http://www.syr.edu/registrar/forms/index.html.
• Request for Examination Form (required of all students defending a Master’s thesis or
  Doctoral dissertation; must be submitted to the Graduate Enrollment Management Center
  (GEMC) at least three full weeks prior to the defense) – download from the Graduate

BMCE Degree Completion Checklist

This checklist is included on page 15 of this handbook. At the beginning of the academic year,
not the semester, in which the student expects to complete his/her degree requirements, he/she
should refer to this checklist and complete it. All parts of the checklist should be completed
BEFORE the Request for Examination Form is submitted to the GEMC.

GRADUATE DEGREES OFFERED:

Bioengineering

• Master’s of Science (MS) in Bioengineering
  (30 or 36 credit program, effective June 2009)

• Doctor of Philosophy (PhD) in Bioengineering
  (42 credit program, effective June 2009)

Chemical Engineering

• Master’s of Science (MS) in Chemical Engineering
  (30 credit program, thesis or non-thesis options)

• Doctor of Philosophy (PhD) in Chemical Engineering
  (42 credit program, effective June 2009)
DESCRIPTION OF DEGREES

MASTER’S OF SCIENCE (MS) DEGREES

Bioengineering

<table>
<thead>
<tr>
<th>MASTER’S DEGREE PROGRAMS – REQUIREMENTS</th>
<th>Total Credit Hours</th>
<th>Cognate Field</th>
<th>Thesis</th>
<th>Capstone Project</th>
<th>Independent Study</th>
<th>Degree Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master’s of Science (MS) – After June 2009, Three Plans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan 1 – 30</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>MS</td>
<td></td>
</tr>
<tr>
<td>Plan 2 – 30</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>MS</td>
<td></td>
</tr>
<tr>
<td>Plan 3 – 36</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>MS</td>
<td></td>
</tr>
</tbody>
</table>

DEGREE REQUIREMENTS EFFECTIVE JUNE 2009

Master’s of Science with Thesis (Plan 1)

- 30 total credits
  - 15 credits of Bioengineering (BEN) courses
  - 3 credits of Ethics (Bio-ethics or engineering ethics);
  - 6 credits of thesis;
  - remaining 6 credits selected from engineering, mathematics or science courses;
  - student must complete a thesis and defend it in an oral examination (see below);
  - no more than 50% of coursework at 500-level;
  - minimum GPA of 3.0 for coursework included on the Program of Study for the degree;
  - minimum GPA of 2.8 for all credits earned.

Master’s of Science Non-Thesis (Plan 2)

- 30 total credits
  - 15 credits of Bioengineering (BEN) courses,
  - 3 credits of Ethics (Bio-ethics or engineering ethics);
  - 3 credits of Independent Study (i.e., BEN 690);
  - remaining 9 credits selected from engineering, mathematics or science courses;
  - a capstone project (see below);
  - student must complete an oral comprehensive examination based on the Capstone Project completed during the independent study, and the coursework (see below);
  - no more than 50% of coursework at 500-level;
  - minimum GPA of 3.0 for coursework included on the Program of Study for the degree
  - minimum GPA of 2.8 for all credits earned.
**Master’s of Science Non-thesis with Cognate Field (Plan 3)**

- **36 total credits** (minimum of 24 credits of technical coursework and 12 credits of tailored concentrations)
  - 24 credits of technical coursework must include:
    - 15 credits of Bioengineering (BEN) courses,
    - 3 credits of Ethics (Bio-ethics or engineering ethics);
    - remaining 6 credits selected from engineering, mathematics or science courses.
  - 12 credits of tailored concentrations in areas such as Technology Transfer and Law (College of Law), Engineering Management (College of Engineering and Computer Science), or a customized sequence of courses of a non-technical nature;
  - a capstone project (see below);
  - student must complete an oral comprehensive examination based on the Capstone Project and the coursework (see below);
  - no more than 50% of coursework at 500-level;
  - minimum GPA of 3.0 for coursework included on the Program of Study for the degree
  - minimum GPA of 2.8 for all credits earned.

**Chemical Engineering**

The Master’s of Science degree can be earned according to one of two plans.

**Master’s of Science with Thesis (Plan 1)**

- **30 total credits:**
  - 24 credit hours of coursework, including at least 12 credits in chemical engineering (CEN);
  - 6 credit hours of thesis;
  - student must complete a master’s thesis and defend it in an oral examination (see below);
  - no more than 50% of coursework at 500-level;
  - minimum GPA of 3.0 for coursework included on the Program of Study for the degree
  - minimum GPA of 2.8 for all credits earned.

**Master’s of Science Non-Thesis (Plan 2)**

- **30 total credits:**
  - at least 15 credits of coursework in chemical engineering (CEN);
  - at least 3 credit hours of an independent study course;
  - after completion of the coursework, the student must pass an oral comprehensive examination based on the independent study and the coursework (see below);
  - no more than 50% of coursework at 500-level;
  - minimum GPA of 3.0 for coursework included on the Program of Study for the degree
  - minimum GPA of 2.8 for all credits earned.
GENERAL INFORMATION FOR MS DEGREE PROGRAMS

**Residence Time:** The MS degree typically requires three to four semesters to complete.

**Graduate Seminar:** Attendance at the BMCE Graduate Seminars is expected of students in all graduate programs.

**Capstone Project Requirements (Bioengineering only):** The capstone project is based on an independent study project done under the guidance of a faculty member, typically over the course of one semester, or a report from a Cognate Field option. **A report describing the project must be submitted to, and approved by, the project supervisor/faculty sponsor and one other BMCE faculty member in order to fulfill the requirements of the degree. A copy of the final approved report must be submitted to the Department.**

**Oral Comprehensive Examination (Bioengineering and Chemical Engineering):** After completion of all coursework, the student must pass an oral comprehensive examination based on the independent study and the coursework.

For all students entering the MS program in Fall 2012, the Oral Comprehensive Examination will be in poster format. All eligible students will prepare posters for display and discussion during a poster session. One poster session will be held toward the end of each semester (Fall, Spring, and Summer) at a specific date and time determined by the Department. An examination committee composed of at least three department faculty, including the student’s advisor will be assigned by the Graduate Program Director. Students will be expected to present information about their projects and coursework to the examination committee and answer related questions during the poster session, but all department faculty can participate. A written project report is not required for the examination. The examination committee will meet separately to determine if the student has passed the examination and the students will be informed of the decision. Students are required to submit an electronic copy and a printed copy on standard-size paper of each poster to the Department prior to the poster presentation. Students enrolled in the MS program prior to Fall 2012 will have the option of the poster format or the previous format for the Oral Comprehensive Examination. The previous Oral Comprehensive Examination format consists of the following: an Oral Comprehensive Examination Committee, consisting of at least three program faculty, including the student’s advisor, must be assigned by the Graduate Program Director at least two weeks before the examination. Materials for the examination, such as a report, must be circulated to the Committee at least two weeks before the Examination. **If a report is prepared, a copy of the final approved report must be submitted to the Department.**

**Thesis Defense Requirements:** Completion of the MS degree with thesis requires a written MS thesis and an oral defense. Students must submit a Request for Examination Form to the GEMC at least three full weeks prior to the oral defense. The thesis document must be delivered to the MS Thesis defense committee at least two weeks prior to the date of the oral defense.

Defenses must comply with the requirements of the Graduate School as described in the Graduate Course Catalog (http://coursecatalog.syr.edu/2012/rules/2657_degree_and_certificate_programs). The MS Thesis defense committee consists of four members. The committee must include the thesis advisor, no fewer than two tenure-track members of the BMCE faculty, and the Chair of the Oral Examination Committee. If a proposed committee member is not a full-time or adjunct faculty member at Syracuse University (e.g. from SUNY-ESF, Upstate Medical University, etc.), the
student must petition the Department to allow this person to serve as a committee member. The Chair of the Oral Examination Committee must be a Syracuse University tenured or tenure-track faculty member outside the department and program.

All students must submit a copy of the final version of the thesis, with the signed title page, to the Department in fulfillment of the requirements for the MS degree.

For information on the formatting of the final thesis document for submission to the Graduate School, see http://www.syr.edu/gradschool/em/current_whatyouneed.html.
DOCTOR OF PHILOSOPHY (PhD) DEGREES

<table>
<thead>
<tr>
<th>PHD DEGREE PROGRAMS – REQUIREMENTS</th>
<th>Required Coursework</th>
<th>Transferable from MS</th>
<th>Thesis Credits</th>
<th>Thesis Required</th>
<th>Dissertation Credits</th>
<th>Residence Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioengineering</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42-credit program, effective June 2009</td>
<td>36 credits as described below</td>
<td>Up to 30 credits, including thesis credits</td>
<td>Up to 6 transferable from MS</td>
<td>No</td>
<td>0</td>
<td>At least 3 years, post-baccalaureate</td>
</tr>
<tr>
<td><strong>Chemical Engineering</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42-credit program, effective June 2009</td>
<td>24 credits in CEN</td>
<td>Up to 30 credits, including thesis credits</td>
<td>Up to 6 transferable from MS</td>
<td>No</td>
<td>0</td>
<td>At least 3 years, post-baccalaureate</td>
</tr>
</tbody>
</table>

**Bioengineering**

The requirements for the PhD degree in Bioengineering, effective June 2009, are:

- **42 total credits including:**
  - at least 36 credits of coursework;
    - 15 credits of Bioengineering (BEN) courses,
    - 3 credits of ethics
    - 18 credits of technical electives, to be chosen in consultation with the dissertation advisor.
  - 6 credits of thesis or additional technical electives.
  - up to 6 credits of thesis can be transferred from the MS;
  - successful completion of the Qualifying and Candidacy examinations;
  - student must complete a dissertation and defend it in an oral examination, but no dissertation credits are required;
  - no more than 33.3% of coursework at 500-level;
  - minimum GPA of 3.0 for coursework included on the Program of Study for the degree;
  - minimum GPA of 2.8 for all credits earned.

Required coursework can include Independent Study (BEN 690) credits. Those entering the program post-BS degree can take up to 6 credits. Those entering the program, post-MS degree, can take up to 3 credits. **The independent study cannot be supervised by the dissertation advisor.**

**Note:** A student must be enrolled for at least three academic years of full-time graduate level study beyond the baccalaureate degree.
Chemical Engineering

The requirements for the PhD degree in Chemical Engineering, effective June 2009, are:

- **42 total credits**, including at least 24 credits in chemical engineering (CEN);
- successful completion of the Qualifying and Candidacy Examinations;
- student must complete a dissertation and defend it in an oral examination, but no dissertation credits are required;
- no more than 33.3% of coursework at 500-level;
- minimum GPA of 3.0 for coursework included on the Program of Study for the degree;
- minimum GPA of 2.8 for all credits earned.

Required coursework can include Independent Study credits. Those entering the program post-BS degree can take up to 6 credits. Those entering the program, post-MS degree, can take up to 3 credits. **The independent study cannot be supervised by the dissertation advisor.**

**Note:** A student must be enrolled for at least three academic years of full-time graduate level study beyond the baccalaureate degree.

PHD EXAMINATIONS – THE GRADUATE PATHWAY

**Timing**

The Department has standardized the milestone requirements with regard to the timing of examinations for the 42-credit doctoral programs in Bioengineering and Chemical Engineering.

**Timing – Post BS**

<table>
<thead>
<tr>
<th>Milestones</th>
<th>Bioengineering (BEN) &amp; Chemical Engineering (CEN)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qualifying Exam</strong></td>
<td>Within 1st month of 4th semester of study</td>
</tr>
<tr>
<td><strong>Candidacy Exams</strong></td>
<td>By end of 5th semester of study</td>
</tr>
<tr>
<td>Proposal Defense (BEN) or</td>
<td></td>
</tr>
<tr>
<td>Oral Comprehensive (CEN)</td>
<td></td>
</tr>
<tr>
<td><strong>Dissertation Defense</strong></td>
<td>By end of 4th year of study</td>
</tr>
</tbody>
</table>

**Timing – Post MS**

<table>
<thead>
<tr>
<th>Milestones</th>
<th>Bioengineering (BEN) &amp; Chemical (CEN) Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qualifying Exam</strong></td>
<td>Within 1st month of beginning of 3rd semester of study</td>
</tr>
<tr>
<td><strong>Candidacy Exams</strong></td>
<td>By end of 4th semester of study</td>
</tr>
<tr>
<td>Proposal Defense (BEN) or</td>
<td></td>
</tr>
<tr>
<td>Oral Comprehensive (CEN)</td>
<td></td>
</tr>
<tr>
<td><strong>Dissertation Defense</strong></td>
<td>By end of 3rd year of study</td>
</tr>
</tbody>
</table>
Description of Examinations

The Department has standardized how examinations are to be conducted for the 42-credit doctoral programs in Bioengineering and Chemical Engineering.

Qualifying Examination (formerly the Screening Examination)

<table>
<thead>
<tr>
<th>Milestones</th>
<th>Bioengineering (BEN) &amp; Chemical Engineering (CEN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisites</td>
<td>Minimum 3.0 GPA in graduate coursework</td>
</tr>
<tr>
<td>Mechanism</td>
<td>Critical analysis of a research publication assigned by the Committee chair in consultation with the student’s advisor and other committee members.</td>
</tr>
<tr>
<td>Faculty Participation</td>
<td>Committee consisting of at least 3 BMCE faculty, assigned by the Graduate Program Director, evaluates student performance based on technical content of written and oral presentation. The dissertation advisor is a non-voting member of committee.</td>
</tr>
<tr>
<td>Voting</td>
<td>Examination Committee votes on outcome of the oral examination. All BMCE faculty votes on passing to candidacy examination, based on examination results and review of the student’s academic and research records.</td>
</tr>
</tbody>
</table>
| Outcomes            | Pass  
                          Conditional pass, with revisions to report  
                          Fail (may retake exam once within 6 weeks of first exam) |

Outcome of oral examination will be communicated to the student by the committee at the time of the examination. Decision to continue to candidacy will be communicated to the student after the faculty vote.

Candidacy Examination (formerly Proposal Defense (BEN) and Oral Comprehensive Exam (CEN))

<table>
<thead>
<tr>
<th>Milestones</th>
<th>Bioengineering (BEN) &amp; Chemical Engineering (CEN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendations</td>
<td>Student, in consultation with advisor, should form committee several months in advance of the examination. This committee should ultimately be the Oral Examination Committee for the Dissertation Defense, minus the Committee Chair.</td>
</tr>
<tr>
<td>Pre-approval</td>
<td>Approval of student’s advisor is required to initiate examination.</td>
</tr>
</tbody>
</table>
| Documents Required  | Candidacy Examination Form: Student must obtain form from the Graduate Secretary and submit this form to the Department in order to schedule the examination. Form must include the title and abstract of the proposal, names of the committee members, and the advisor’s signature. The Graduate Program Director’s signature is also required, effectively assigning the committee. The Program Director then assigns a committee chair for the examination.  
                          Proposal: A written proposal must be circulated to the committee no later than 2 weeks prior to the examination. Student should ask committee members if a hard-copy or electronic copy is preferred. The proposal is limited to 10 pages, single-spaced, Times Roman 12 pt. font. Page limit does not include figures, tables, and references. No appendices may be included. |
Committee Requirements
Committee must have at least 5 members including the dissertation advisor, at least 3 of which must be BMCE tenured or tenure-track faculty members.

Faculty Participation
The examination is open to all faculty members.

Voting
After the presentation, the committee meets in executive session and votes. The student is informed of the result of this vote immediately afterward. 
**Candidacy Examination Outcome Form:** This form is prepared at the time of the examination by the committee and will include the date of the examination, the names of the committee members, the results of the members votes, and whether the student passes or fails the examination. It will be signed by the examination chair. The student will receive a copy and with the original retained in the student’s records.

Outcomes
- **Pass**
  - Student enters candidacy, with oversight of the dissertation work turned over to the committee.
- **Fail**
  - Further refinement of proposal is necessary.
  - Exam must be repeated for student to enter candidacy.

Dissertation Defense

<table>
<thead>
<tr>
<th>Milestones</th>
<th>Bioengineering (BEN) &amp; Chemical Engineering (CEN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of Dissertation</td>
<td>It is recommended that the student meet with the examination committee to review dissertation progress 3-6 months in advance of the request for the dissertation defense.</td>
</tr>
<tr>
<td>Request for Exam</td>
<td>Request for Examination Form must be submitted to the GEMC at least three full weeks prior to the oral defense.</td>
</tr>
<tr>
<td>Distribution of Dissertation</td>
<td>Must be delivered to oral defense committee at least 2 weeks prior to the date of the defense.</td>
</tr>
<tr>
<td>Committee Requirements</td>
<td>6 members are required:</td>
</tr>
<tr>
<td></td>
<td>- Research advisor;</td>
</tr>
<tr>
<td></td>
<td>- 4 tenured/tenure-track faculty from SU or other institutions if appropriate (by petition);</td>
</tr>
<tr>
<td></td>
<td>- Committee chair – must be tenured/tenure-track SU faculty member from outside of BMCE.</td>
</tr>
<tr>
<td>Nature of Exam</td>
<td>The examination is open to all students and faculty.</td>
</tr>
<tr>
<td>Voting</td>
<td>All committee members vote.</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Candidate must pass oral defense in order to complete the Ph.D. degree.</td>
</tr>
</tbody>
</table>

Defenses must comply with the requirements of the Graduate School as described in the Graduate Course Catalog ([http://coursecatalog.syr.edu/2012/rules/2657_degree_and_certificate_programs](http://coursecatalog.syr.edu/2012/rules/2657_degree_and_certificate_programs)).

For information on the formatting of the final dissertation document for submission to the Graduate School, see [http://www.syr.edu/gradschool/em/current_whatyouneed.html](http://www.syr.edu/gradschool/em/current_whatyouneed.html).
BMCE DEGREE COMPLETION CHECKLIST

Check that you’ve done the following BEFORE you schedule your defense:

☐ Undergraduate and/or MS Degree-Bearing Transcript submitted to the University.

☐ Program and degree are accurate in MySlice. Are you in the correct program for the degree you wish to receive?

☐ Expected grad term is correct in MySlice. Go online and File a Diploma Request with the Registrar.

☐ Program of Study submitted to the Department for approval and then to the Graduate School. Total credits to be counted for the degree program are correct.

☐ Approved documentation for substituted courses/and or waived courses (petitions) must be on file with the Department and the GEMC Degree Certification Office.

☐ Required courses or documented substitutions appear on your transcript.

☐ Transfer credits: Have you petitioned to transfer credits, including those from a Master’s degree, toward your degree? Transfer credits accepted by Syracuse University must appear on your transcript.

☐ Class registration: You MUST BE registered in the semester in which you are graduating. This includes summer graduation dates. If no coursework is required, have you registered for GRD 998-Degree in Progress for zero credits?

☐ All coursework was completed by the graduation date. (If a grade is posted beyond the graduation date, there must be written confirmation from the instructor that the work was completed and submitted by the graduation date.)

☐ Exit requirement (final project, comprehensive exam, thesis defense, dissertation defense) was completed by the graduation date.

☐ Program GPA 3.0 or better. Calculate Program GPA using credits on the Program of Study only.

☐ Overall GPA 2.8 or better.

Once all the above is done:

☐ Request for Examination Form submitted to the GEMC.
BIOMEDICAL AND CHEMICAL ENGINEERING FACULTY AND THEIR RESEARCH

Full-time Faculty

• REBECCA A. BADER  Assistant Professor; Ph.D., Materials Science, Oregon State University, 2006. Drug delivery; molecular biotechnology; nanotechnology.

• JESSE Q. BOND  Assistant Professor; Ph.D., Chemical Engineering, University of Wisconsin-Madison, 2009. Sustainability of transportation fuels and chemical products.

• KATIE D. CADWELL  Assistant Professor; Ph.D., Chemical Engineering, University of Wisconsin-Madison, 2007. Mass and energy balances; chemical engineering laboratory instruction.

• ANDREW L. DARLING  Assistant Professor; Ph.D., Mechanical Engineering, Drexel University, 2005. Biomaterials/tissue engineering; molecular biotechnology; nanotechnology.

• JEREMY L. GILBERT  Professor; Affiliate Professor of Mechanical, Aerospace and Manufacturing Engineering; Adjunct Research Professor of Orthopedic Surgery, SUNY Upstate Medical University; Ph.D. Metallurgical Engineering and Materials Science, Carnegie Mellon University, 1987. Biomaterials/tissue engineering; corrosion and electrochemistry; multi-phase systems; nanotechnology.

• JULIE M. HASENWINKEL  Associate Professor & LCS Associate Dean for Student Affairs; Ph.D., Biomedical Engineering, Northwestern University, 1999. Biomaterials/tissue engineering; nerve regeneration; rheology; drug delivery; nanotechnology.

• JAMES H. HENDERSON  Assistant Professor & Bioengineering Graduate Program Director; Ph.D., Mechanical Engineering, Stanford University, 2004. Biomaterials/tissue engineering; mechanobiology; regenerative medicine.

• JOHN C. HEYDWEILLER  Associate Professor; Ph.D., Chemical Engineering, Kansas State University, 1977. Mathematical and numerical analysis.

• GEORGE C. MARTIN  Professor; Ph.D., Chemical Engineering, University of Minnesota, 1976. Physical properties of polymers; polymer and composites processing; thermosetting polymers.

• PATRICK T. MATHER  Stevenson Professor of Biomedical and Chemical Engineering & Director of the Syracuse Biomaterials Institute; Professor of Physics; Ph.D. Materials, University of California at Santa Barbara, 1994. Biomaterials/tissue engineering; complex fluids, soft condensed matter, rheology; corrosion and electrochemistry; drug delivery; molecular biotechnology; nanotechnology.

• SHIKHA NANGIA  Assistant Professor; Ph.D., Chemistry, University of Minnesota, 2006. Multiscale modeling; nanomedicine; cancer drug delivery; catalysis.

• DACHENG REN  Associate Professor & Chemical Engineering Graduate Program Director; Ph.D., Chemical Engineering, University of Connecticut, 2003. Biomaterials; microbial control; systems biology; molecular biotechnology; corrosion and electrochemistry; sustainable energy production.

• ASHOK SANGANI  Professor; Ph.D., Chemical Engineering, Stanford University, 1982. Complex fluids, soft condensed matter, rheology; molecular biotechnology; multi-phase systems; mathematical and numerical analysis.
• RADHAKRISHNA SURESHKUMAR  Professor and Department Chair; Professor of Physics; Ph.D. Chemical Engineering, University of Delaware, 1996. Complex fluids, soft condensed matter, rheology; multi-phase systems; nanotechnology; sustainable energy production; systems biology/metabolic engineering; mathematical and numerical analysis.

• LAWRENCE L. TAVLARIDES  Professor; Ph.D., Chemical Engineering, University of Pittsburgh, 1968. Indoor air quality/environmental engineering; multi-phase systems; sustainable energy production.

Part-time Faculty

• SHELLEY KUMMER  Part-time Assistant Professor; Ph.D. Upstate Medical University, 2007. Tissue engineering.

• KENT OGDEN  Part-time Associate Professor; Medical Physicist, Department of Radiology, SUNY Upstate Medical University; Ph.D., Medical College of Wisconsin, 1999. Diagnostic radiology, biophysics.

Affiliate Faculty

• JOSEPH CHAIKEN  Professor, Department of Chemistry, Ph.D. University of Illinois, 1982. Spectroscopy.

• ANDRIA COSTELLO STANIEC  Associate Professor, Department of Civil and Environmental Engineering; Ph.D., California Institute of Technology, 1999. Environmental microbiology.

• MARTIN FORSTNER  Assistant Professor, Physics; Ph.D., University of Texas, Austin, 2003. Biophysics; experimental soft condensed matter; biophotonics.

• YAN-YEUNG LUK  Assistant Professor, Department of Chemistry; Ph.D. University of Chicago, 2001. Bio-organic and chemical biology, nanomaterials, biosurfaces.

• CHRISTINA MARCHETTI  Professor and Chair, Department of Physics; Ph.D. University of Florida, 1982. Soft condensed matter physics; superconductivity and vortex matter; nonequilibrium statistical physics.

• SURESH SANTANAM  Associate Professor; Associate Director, Syracuse Center of Excellence in Environmental and Energy Systems; Sc.D., Air pollution control, Harvard University, 1989. Air pollution, hazardous waste management.

Research Faculty

• BART FARELL  Research Associate Professor; Affiliate Member, Institute for Sensory Research; Ph.D., McGill University, 1977. Visual psychophysics, functional imaging of brain activity.

• GEORGE A. GESCHEIDER  Research Professor; Affiliate Member, Institute for Sensory Research; Ph.D. Psychology, University of Virginia, 1964. Cutaneous sensitivity, psychophysical measurement, tactile communication for the deaf and blind.

• ADAM K. PACK  Adjunct Assistant Professor; Affiliate Member, Institute for Sensory Research; Assistant Professor of Biology, Utica College; Ph.D., SUNY Upstate Medical University, 2001. Sensory neuroanatomy, auditory sensory organs.
Other Faculty

• MARC HOWARD  Adjunct Assistant Professor; Assistant Professor, Psychology, Syracuse University; Ph.D., Brandeis University, 1999. Neural engineering.

• KENNETH MANN  Adjunct Professor; Associate Professor of Orthopedic Surgery, SUNY Upstate Medical University; Ph.D., Cornell University, 1991. Mechanical and biological factors in total joint replacement.

• BANDARU V. RAMARAO  Adjunct Professor; Ph.D. Chemical Engineering, Clarkson University, 1986. Fluid particle separation.

• JOSEPH A. SPADARO  Adjunct Professor; Research Professor of Orthopedic Surgery, SUNY Upstate Medical University; Ph.D., Syracuse University. Biophysics of materials.

• FREDERICK W. WERNER  Adjunct Professor; Research Professor of Orthopedic Surgery, SUNY Upstate Medical University; MS, Cornell University, 1975. Biomechanics, prosthesis design and evaluation.

Emeriti Faculty

• GUSTAV A. ENGBRETSON  Professor Emeritus; Member, Institute for Sensory Research; Research Associate Professor of Cellular and Developmental Biology and Ophthalmology, SUNY Upstate Medical University; Ph.D., Zoology, University of Oklahoma, 1976. Vision neuroscience.

• PHILIP A. RICE  Professor Emeritus and Research Professor; Ph.D., Chemical Engineering, University of Michigan, 1963. Bioreactors, transport in biological systems, heat and mass transfer with phase change.

• KLAUS SCHRODER  Professor Emeritus and Research Professor; Ph.D., University of Gottingen, 1954. Metal physics, magnetic and electrical properties of materials.

• ROBERT L. SMITH  Professor Emeritus; Director, Institute for Sensory Research; Ph.D., Syracuse University, 1973. Auditory electrophysiology.

• CHI TIEN  Distinguished Professor Emeritus, Ph.D., Northwestern University, 1958. Fluid-particle technology, heat transfer, fixed-bed processes.

• JOZEF J. ZWISLOCKI  Distinguished Professor Emeritus, Founder, Institute for Sensory Research; Professor, Communication Sciences and Disorders; Research Professor of Otolaryngology and Communication Sciences, SUNY Upstate Medical University; Member, National Academy of Science; Sc.D., Federal Institute of Technology, Zurich, 1948. Auditory biophysics and psychophysics.

*(See Department website, http://bmce.syr.edu for additional information, including recent publications and research projects.)
CONTACT INFORMATION

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