# Academic Catalog 2020 - 2021 / Graduate

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Doctoral Degree Requirements

Doctoral Research

In addition to the other requirements of the University, a candidate for a doctoral degree must complete an acceptable dissertation. The dissertation must satisfy the following criteria:

1. It should demonstrate the candidate's intellectual competence and maturity in the field of concentration;
2. It should make an original and valid contribution to knowledge; and
3. It should be an individual achievement and the product of independent research.

Although doctoral dissertations may result from a project involving collaboration of several scholars, the individual contribution of each doctoral candidate must be substantial, clearly identifiable, and presented separately. The Committee will judge the completed dissertation in terms of the candidate's ability to review and make critical use of the literature; to formulate a problem, develop appropriate methodology, and work systematically toward a solution; and to summarize the material or data and draw conclusions from them. The writing should be of publishable quality.

Dissertation Committee

After a student has chosen an area of research and a research supervisor, a Dissertation Committee is selected by the student and his or her research advisor in accordance with the policy of the department. The Dissertation Committee shall consist of at least three members, one of whom is the research supervisor and at least two of whom shall be from the student's major department. An outside expert from industry or another university may be a member of the committee, but that individual must possess academic credentials which would qualify him or her to serve as a member of the University of Massachusetts Lowell faculty. The responsibilities of the Dissertation Committee shall be to:

1. Approve the research topic;
2. Supervise the progress of the dissertation;
3. Read, evaluate, and approve or disapprove of the written dissertation;
4. Hear, evaluate and approve or disapprove of the oral defense of the dissertation;
5. Report the completion of all dissertation requirements to the department and the Registrar's Office.

Dissertation Credits

If the graduate student requires the use of University resources to continue his or her dissertation but has completed the required number of credits for doctoral research, he or she may sign up for 3, 6, or 9 credits of Continuing Graduate Research (see General Policies).

Graduate students who have completed all the requirements except the writing and defense of the dissertation and who do not need to use university resources must register for Continued Matriculation (CM.601) and pay a fee each semester until they graduate.

Note: International students on F-1 or J-1 visas must be registered for a minimum of nine credits each semester. Contact the International Students and Scholars Office for more information.

Dissertation Preparation

Every graduate student who completes a dissertation is required to bear the cost of binding two copies of the manuscript for the University's files. Copywriting is optional and available for an additional fee.

Dissertation Defense

Two weeks prior to the dissertation defense, announcements of the defense, listing the graduate student's name, dissertation title, and place and time of the defense, must be submitted to the chairperson of the department, the college dean, the Registrar's Office and posted and distributed throughout the university. The defense is open to the public.

Doctoral Degree Requirements

The doctoral degree is conferred upon graduate students who have met all the requirements listed below:
1. The student must successfully complete the graduate courses in the major field, including the GPA requirement, and the number of course and dissertation credits required by the particular program.

2. If indicated, the language requirement specified by the major department must be satisfactorily completed.

3. A qualifying examination, oral and/or written, conducted by the major department, must be passed before any work is begun on the dissertation. If the student fails the qualifying examination he or she may, at the discretion of the department, be permitted a second and final opportunity. At this point, having completed steps 1 through 3, the student is admitted to candidacy for the doctorate.

4. A dissertation based upon the results of original research, and which is satisfactory to the Dissertation Committee of the major department, must be completed.

5. A final oral dissertation defense conducted by the Dissertation Committee, based primarily upon, but not necessarily limited to, the contents of the candidate’s dissertation must be passed. The examination cannot be scheduled until all members of the Dissertation Committee have had seven working days in which to read the dissertation. The oral examination is to be conducted by the Dissertation Committee, whose membership may be augmented by the non-voting faculty. In order to pass the defense, the candidate may not receive more than one dissenting vote from the members of the Dissertation Committee.

6. All financial obligations (tuition, fees, and expenses) must be satisfied as evidenced by the completion and submission of a Graduate Degree Clearance form to the Registrar’s Office.

**Procedure for Opting Out with a Master’s Degree**

Students accepted into a doctoral program who elect to instead obtain the master’s degree and leave the university must follow the following procedure:

1. The student must file an Academic Petition requesting to be changed from the doctorate to the master’s degree program.

2. The student must complete all required courses for the master’s degree, compile a minimum 3.0 grade point average, successfully defend his/her thesis, and complete the clearance process at the Registrar’s Office.

3. All graduate courses (and undergraduate course work used for graduate credit), whether taken for the original doctoral program or for the master’s degree, will be included in the grade point average and listed on the student’s graduate transcript.

**Master’s Degree Requirements**

**Advising**

**General Requirements for the Master’s Degree**

**Research Option for the Master’s Degree**

**Research Project**

**Thesis**

**Thesis Committee**

**Thesis Preparation**

**Thesis Defense**

**Students Continuing on to a Doctoral Program**

**Advising**

An entering graduate student should meet with the departmental graduate coordinator as soon as possible after arrival on campus. The coordinator will:

1. Help design and then approve the student’s complete program leading to the master’s degree.

2. Recommend course credits from within and outside the University for transfer into the student’s degree program.

3. Monitor the student’s progress toward the degree, which
must be completed within a five-year time period in most programs (see Time for Limit for Degree Completion).

General Requirements for the Master’s Degree

To be recommended for a masters degree, a candidate must satisfy all requirements of the University and the specific requirements of the department in which he or she is enrolled. The requirements of the University are listed below, and the specific requirements established by the various departments may be found in the section describing the particular programs.

A candidate for the master’s degree must complete the following within five years of matriculation in order to receive the degree: (Note: Master’s degrees which require 45 or more credits have a limit of six years.)

1. A course of study designed by the department in which he or she is enrolled and approved by the University. The course of study must have a minimum of 30 credit hours of graduate work including, where applicable, a thesis or project in the student’s chosen field.
2. A student must successfully pass an oral or written examination on his or her complete master’s program if required by the department.
3. Satisfactory grades in all subjects offered for the degree must be earned (see Academic Standing).
4. All financial obligations, including tuition, fees, and expenses, must be satisfied as evidenced by completion and submission of a signed Graduate Degree Clearance form to the Registrar’s Office.

Research Option for the Master’s Degree

If required by the program, a student must complete a master’s project or a thesis. The proposal must be approved by the department in which the student is enrolled and the final project or thesis must be of graduate level quality.

Project

The project must consist of a scholarly investigation, such as a review, report, synthesis, design or experiments in the student’s field resulting in a comprehensive written document. Usually, if a student chooses the project option, he or she is required to take additional course credits. Each project is awarded only three to four credits and is intended to be completed within the time limit of one semester. If the work for a project is not completed by the end of the semester, the instructor will give the student an Incomplete which is to be treated the same as an incomplete for a regular course.

Thesis

The requirements for a thesis are much more extensive, including the completion of acceptable research and its defense before a thesis committee. The completed thesis must conform to the format specified in the "Thesis Guide (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)" which is available in the Registrar’s Office. The time required for completion may vary; if a student has not completed the thesis by the end of the semester, but is making satisfactory progress, he or she is given the grade of "PR". If the student requires the use of university resources to continue thesis research, but has completed the required number of credits for the master’s thesis, he or she may sign up for 3, 6, or 9 credits of Continuing Graduate Research (see Course Descriptions). However, if the student is not using University resources, but is in the process of writing the thesis, he or she may register for Continuing Matriculation for the semester(s) during which the work is completed. Continuing Matriculation is available to international students only under special circumstances. International students should contact the International Student Office (https://www.uml.edu/ISSO/default.aspx) for more information and to make sure they comply with visa and immigration regulations.

Upon successful completion of the thesis, the grade of "S" will be awarded for all the semesters in which the student is registered for thesis research. Only the Registrar’s Office can issue this grade.

Thesis Committee

As soon as a student has chosen an area of research, a Thesis Committee is selected by the student and his or her research advisor in accordance with the policy of the department. The Thesis Committee shall consist of at least three members, at least two of whom shall be from the student’s major department. One member of the committee shall be the student’s thesis advisor. An outside expert, such as the supervisor of a research project conducted at an industrial setting or a faculty member from another institution, may be a member of the committee, but that individual must possess academic credentials which would qualify him or her to serve as a member of the University of Massachusetts Lowell faculty. The responsibilities of the Thesis Committee shall be to:

1. Approve the research topic.
2. Supervise the progress of the thesis.
3. Read, evaluate and approve or disapprove of the written thesis.
4. Hear, evaluate and approve or disapprove of the oral defense of the thesis.
5. Report the completion of all thesis requirements to the
Thesis Preparation

Every graduate student who completes a thesis is required to bear the cost of binding two copies of the manuscript for the University’s files. Copy writing is optional and available for an additional fee.

Thesis Defense

Two weeks prior to the thesis defense, announcements of the defense listing the candidate’s name, thesis title, and place and time of the defense, must be submitted to the chairperson of the department, the college dean, and the Registrar’s Office, and posted and distributed throughout the University. The defense is open to the public.

For Students Continuing on to a Doctoral Program

Students accepted into a master’s degree program who decide to continue on for the doctorate but want to first complete their master’s degree must adhere to the following procedure.

1. The student must complete all required courses, compile a 3.0 grade point average, and successfully defend his/her thesis, if required.
2. The student must complete the Registrar’s Office clearance process for the master’s degree.
3. A student is prohibited from enrolling in doctoral research until he or she has completed the clearance process for the master’s degree.
4. The student must then apply to the doctoral program by completing the standard Graduate Admissions application process.
5. Official admission into a doctoral program and receipt of a letter of acceptance are contingent upon completion of the clearance process for the master’s degree.

Application Procedure

Institutional Admissions Requirements

The general requirements for admission to graduate study at the university are listed below.

1. The applicant must show official evidence of having earned a baccalaureate degree or its U.S. equivalent from an accredited college or university. If an international transcript does not adequately demonstrate that an applicant has the equivalent of an American bachelor’s or master’s degree, the Office of Graduate Admissions will require such verification by an independent service such as the Center for Educational Documentation (http://www.cedevaluations.com/), (www.cedevaluations.com) Boston, MA (617-338-7171).
2. The degree must have been earned with a satisfactory scholastic average to demonstrate that the applicant has had adequate preparation for the field in which graduate studies are to be undertaken.
3. Certain graduate programs require graduate entrance examinations. The applicant must have obtained a satisfactory score on the appropriate entrance examination if required for admission by
the program or department to which admission is sought. The official score report must be submitted; a photocopy of the examinee’s report is unacceptable.

4. The Commonwealth of Massachusetts requires that all full-time graduate students (9 or more credits) must be immunized against measles, mumps, rubella, tetanus, and diphtheria. In addition, all students in programs in the health professions, regardless of age or enrollment status, must show proof of immunization. Students will not be permitted to register for courses at the University unless proof of immunization has been sent directly to the Director of Health Services, University of Massachusetts Lowell, Lowell, MA 01854 978-934-4991.

Departmental Requirements

The rules, regulations, and policies delineated by the University constitute only the minimum requirements for admission, retention, and graduation. Each department may have additional requirements mandated by the unique nature of its programs. It is the responsibility of the graduate student to be aware of the minimum requirements of the University and, in addition, to fulfill the special requirements of the particular program in which he or she is enrolled.

Application Procedure for Graduate Admission

Applicants can apply using the online application.

1. A completed application form.
2. Official transcripts of all undergraduate and graduate records.
3. Letters of recommendation written by individuals qualified to judge the ability of the applicant to carry on graduate work and research as requested by the department. Refer to the department page to learn about the number of required recommendations.
4. Official scholastic test scores specified for various degree programs at the University (see individual departmental requirements). An applicant who has earned a graduate degree from an accredited university may petition the department graduate coordinator to waive the scholastic test requirements (e.g. GRE).
5. The official score report for an institutionally approved language test for students from
countries where English is not the national language. The thresholds for English tests are set by the department.

Institutionally approved English tests: TOEFL, IELTS, Duolingo. All test scores must be official and sent directly by the testing agency.

Application Deadline

The University of Massachusetts Lowell Graduate Admissions Office has a "rolling admissions" policy. However, some programs have early, fixed application deadlines. Consequently, the applicant is strongly urged to contact the department of interest to determine the last date on which applications may be received. In general, early applications will ensure that all materials are processed on time and that a student who wishes to apply for a teaching assistantship will be given due consideration. Many programs will fill available openings several months before the beginning of the semester. A student who has been accepted into a graduate program must attend within a year of acceptance or may, at the discretion of the department, be required to submit a new application. Application files for individuals who do not matriculate will be retained for only two years from the date of application.

Types of Admission

A student may be admitted to graduate study at the University of Massachusetts Lowell under one of the two classifications listed below.

1. Matriculated status: A student who has met all requirements for admission to a degree program and who has been recommended by the department in which he or she proposes to study as a degree candidate.

2. Matriculated with conditions: A student who has not fully met the requirements stipulated by the program may be admitted as a prospective candidate for a degree with specified conditions to be met in the future. Such a student must have as an initial objective the satisfactory completion of all requirements for full matriculation.

Graduate Certificate Candidate Application Information

Graduate certificate programs are designed for students holding a baccalaureate degree in a field related to the certificate program. A student who wishes to apply to a certificate program must complete the Graduate Certificate Application, submit the appropriate application fee, and submit an official transcript indicating the conferral of a bachelor’s degree. The graduate record exam (GRE) and letters of recommendation are not required.

A student in a certificate program who wishes to enroll in a master’s or doctoral program is ineligible to receive credit towards a degree until he or she files a formal application and is then admitted as a matriculated student.

The maximum number of graduate credits a student may complete while enrolled in a graduate certificate is 12 credits.

Non-Degree Status

An individual without advanced degree objectives may take courses in certain programs with non-degree status. A student who wishes to take courses as a non-degree student must submit an official transcript indicating the conferral of a bachelor’s degree. A student in non-degree status is ineligible to receive credit towards a degree until he or she files a formal application and is then admitted as a matriculated student.

The maximum number of graduate credits a student may complete with non-degree status is 12 credits.

NOTE: International students are not eligible for non-degree status.

Graduate Readmission/Deferral Policy

1. A matriculated student who formally withdraws in good standing from the university may request readmission within two years by completing only the cover page of the graduate application.

2. A newly accepted student dropped from a graduate program for failure to register may be re-admitted by submitting a new application cover page and fee within two years of acceptance date.

3. A matriculated student who fails to maintain continuous enrollment and has not formally withdrawn may be readmitted by submitting a new application cover page and fee within two years of being dropped from the program.

4. A student may request a deferment of enrollment
up to one year beyond the date when he or she was scheduled to begin his or her graduate program. If the one-year time period is exceeded, the student must submit a new application and fee. Deferral must be requested before the start of the semester for which the student is accepted.

Financial Information

University-related costs include tuition and mandatory fees. Please contact The Solution Center for more tuition and fee information (https://www.uml.edu/thesolutioncenter/bill/tuition-fees/Graduate/in-state.aspx).

- New England Regional Program
- Health Insurance
- Veterans
- Residency Classification
- Overdue Accounts
- Payment Plans
- University Charges

New England Regional Student Program

Massachusetts and the university participate in a reciprocal program in which qualified and legal residents of other New England states may attend graduate school in an approved program at the University of Massachusetts Lowell and pay 150 percent of the Massachusetts in-state tuition charges. (All other applicable fees apply.) Applicants are considered for unique and distinctive graduate level studies not available in their home state university system. Full details regarding eligible programs are available from the New England Board of Higher Education, 45 Temple Place, Boston, Massachusetts 02111 (617-357-9620), or at the University Graduate Admissions (https://www.uml.edu/Grad/default.aspx) office (www.uml.edu/grad (https://www.uml.edu/Grad/default.aspx)). See the tuition costs for the New England Regional Program.

*UMass Lowell also participates in the Proximity Allowance of the New England Regional Program. This program allows New Hampshire residents from selected towns within a 20 mile radius of UMass Lowell to be eligible for a tuition discount for most majors. Please visit www.uml.edu/admissions/proximity (http://www.uml.edu/Grad/Costs/default.aspx) for details.

Veterans

The Veterans Administration has approved the University of Massachusetts Lowell for undergraduate study. Visit the Office of Veterans Services (https://www.uml.edu/student-services/Veterans/default.aspx) for more information.

RESIDENCY CLASSIFICATION

Rules for Determination of Domicile

University tuition rates are established on the basis of official state residency as determined by a student’s true "domicile." "Domicile" is defined as a person’s true, fixed and permanent home and place of habitation where he or she intends to remain permanently or for an indefinite time. Massachusetts residency for tuition purposes is not acquired by mere physical presence in Massachusetts while a person is carrying on a course of study at the University. A student’s residency status is based on a determination of one’s domicile at the time of entry or re-entry to the University. A student may apply to be reclassified at any time and must provide detailed documentation to support the claim that he or she met the requirements for Massachusetts residency for tuition purposes at the time of his or her entry as a student. One notable exception is made for students who marry Massachusetts residents while enrolled in a course of studies. The complete set of rules are attached to the application for reclassification (https://www.uml.edu/Enrollment/Residency/Classification-Reclassification.aspx).

Payment of Bills

Graduate students will be permitted to attend classes and to utilize university facilities only after they have cleared all their financial obligations to the university. Financial obligations include indebtedness for library and parking fines, rental payments and repayment of emergency loans. All bills are payable in advance by check or money order and are due as

International Students: As authorized under the insurance laws for higher education students in Massachusetts (section 275 of Chapter 151 of the Acts of 1996), the University of Massachusetts Lowell requires that all international students must enroll in the University's Student Health Insurance Plan.
specified on the student invoice. Major credit cards are also accepted. All payments of fees and tuition should be made payable directly to the University of Massachusetts Lowell. A student in debt to the university at the end of any semester or summer session is not permitted to register again at the university until his or her indebtedness has been discharged. In addition, student transcripts and diplomas will not be released unless all indebtedness has been discharged.

Pay My Bill
(https://www.uml.edu/thesolutioncenter/bill/default.aspx)

Overdue Accounts

Should it be necessary to utilize the services of a collection agency or attorney for an overdue student account, the student will be liable for any and all legal fees, commissions, and associated service charges.

Payment Plans

The University of Massachusetts Lowell offers a low-cost, interest-free payment option. This plan allows students to budget the annual cost of tuition and fees over a ten month period. Visit the Solution Center (https://www.uml.edu/thesolutioncenter/bill/eBill/payment-options.aspx) for more information on payment options.

University Charges

University-related costs include tuition and mandatory fees. Please contact the Solution Center for more information on tuition and fees.

Financial Assistance & Assistantships

FINANCIAL ASSISTANCE

- Applying for Financial Aid
- Other Types of Assistance

The Solution Center
(https://www.uml.edu/thesolutioncenter/financial-aid/default.aspx)
University Crossing Lobby
220 Pawtucket Street, Suite 131
Lowell, MA 01854
Telephone: 978-934-2000
Office Hours: Monday - Friday: 8:30 a.m. to 5 p.m.

Applying Financial Aid

The University requires students to file a Free Application for Federal Student Aid (FAFSA). Students may apply for the FAFSA online at www.FAFSA.ed.gov (http://www.FAFSA.ed.gov). It is recommended that students save time by requesting personal identification numbers called Federal Student Aid PINs before the student applies for aid. The PIN can be used to electronically sign the FAFSA, electronically sign certain loan contracts, and access online information about federal student aid the student has received. The PIN must be requested online at www.studentaid.ed.gov (https://www.studentaid.ed.gov/sa/fafsa/filling-out/fsaid).

Copies of students and spouses federal income tax, W2 forms and other forms may be requested by the Financial Aid Office to verify information provided on the FAFSA. Many forms requested are available on The Solution Center website. All information requested by the Financial Aid Office is required to complete the application process and is held in strictest confidence.

Eligibility Requirements

To receive financial aid from the various student aid programs, a student must:

- Have demonstrated financial need to qualify for need-based aid programs. Need is defined as the cost of attendance minus the expected family contribution derived from filing the FAFSA. Students may also be eligible for non-need based aid programs, such as the Federal Direct Unsubsidized Loan program and meritious awards.

- Be a U.S. citizen or eligible non-citizen.
- Have a valid Social Security Number.
- Make satisfactory academic progress.
- Have a high school diploma or a General Education Development (GED) certificate, pass a test approved by the U.S. Department of Education, meet other standards the state of Massachusetts establishes that are approved by the U.S. Department of Education, or complete a high school education in a home school setting that is treated as a home school or private school under state law.

- Be a matriculated student enrolled in a degree granting or approved certificate program. Students enrolled in non-degree programs are not eligible for financial aid.

- Be enrolled at least half-time each semester. (Minimum of six credits for graduate students).

- Cannot be in default or in over payment on a federal
Determined Financial Need:

Demonstrated financial need is the difference between the cost of attendance and the expected family contribution. The cost of attendance (COA) includes direct expenses such as tuition and fees, and also includes indirect such as room, board, books and transportation. The expected family contribution (EFC) is determined by the federal needs analysis formula and is calculated by completing a Free Application for Federal Student Aid (FAFSA).

Types of Financial Aid:

**William D. Ford Federal Direct Subsidized/Unsubsidized Loan Program**: The primary source of financial aid recommended for graduate students is the William D. Ford Federal Direct Student Loan Program. This program allows the student to borrow up to $20,500 per year at a low interest rate in subsidized and/or unsubsidized loans. Eligibility for a subsidized or unsubsidized direct loan is determined from the information provided on the FAFSA. A student may receive a subsidized loan and an unsubsidized loan for the same enrollment period. A subsidized loan is awarded on the basis of financial need. A student will not be charged any interest before repayment begins or during authorized periods of deferment. An unsubsidized loan is not awarded on the basis of need. A student will be charged interest from the time the loan is disbursed until it is paid in full. If a student allows the interest to accumulate, it will be capitalized—that is, the interest will be added to the principal amount of the loan and additional interest will be based upon the higher amount. For more information about graduate student aid contact visit the Solution Center at www.uml.edu/thesolutioncenter/financial-aid/Receiving-Aid/Types-Aid/graduate/loans.aspx.

**William D. Ford Federal Direct PLUS Loan Program**: A non-need based federal loan offers up to the cost of attendance minus financial aid per academic year to qualified graduate students and parents/stepparents of undergraduate dependent students. Interest rate is fixed and repayment begins 45-60 days after the second disbursement. Refer to the Direct Loan website (http://www.ed.gov/offices/OSFAP/DirectLoan/index.html) for current interest rates. A FAFSA is not required to apply for the PLUS loan; however, students are encouraged to file a FAFSA so that they can receive the maximum aid available. Parents may download an application online from The Solution Center (https://www.uml.edu/thesolutioncenter/financial-aid/Forms.aspx). Applications should be returned to the financial aid for processing. This is a loan that needs to be repaid by the parent/stepparent.

Other Types of Assistance:

**Federal Professional Nurse Traineeship Grant Program**: Federally funded grant available to graduate nursing students. Award amounts vary and are dependent upon funding. Please contact the School of Nursing for more information.

**Federal Teach Grant**: Federally funded grant available to qualifying graduate education majors enrolled in coursework or plan to complete coursework toward a career in teaching in a high need subject area. Contact the Graduate School of Education for more information.

**Deans Fellowships**: $2,000 awards granted to eligible, newly admitted full-time, in-state Masters candidates not receiving a teaching or research assistantship.

**Provosts Fellowships**: $4,000 awards granted to eligible, newly admitted full-time, out-of-state and international Masters candidates not receiving a teaching or research assistantship.

**ASSISTANTSHIPS**

**Teaching and Research Assistantships**

A limited number of teaching and research assistantships are available for matriculated, full-time (minimum of 9 credits/semester) graduate students. All assistantships are subject to the agreement between UMass Lowell and UAW/Graduate Employees Organization. Teaching assistantships are assigned by the student’s department; therefore, queries regarding teaching assistantships should be directed to the departmental graduate coordinator (https://www.uml.edu/Grad/Accepted-Students/coordinators.aspx) or chairperson (see www.uml.edu/Grad/coordinators.aspx (https://www.uml.edu/Grad/Accepted-Students/coordinators.aspx) for a list). Research assistantships are available through special arrangements with individual research advisers. Individuals interested in research assistantships should contact departmental faculty members concerning the availability of this form of financial aid.

**Qualifying for an Assistantship**

To ensure that assistantships are awarded to the most qualified individuals, the University has established the following requirements:

1. No teaching/research assistantship may be awarded to a graduate student who fails to maintain good academic performance. A non-need based federal loan offers up to the cost of attendance minus financial aid per academic year to qualified graduate students and parents/stepparents of undergraduate dependent students. Interest rate is fixed and repayment begins 45-60 days after the second disbursement. Refer to the Direct Loan website (http://www.ed.gov/offices/OSFAP/DirectLoan/index.html) for current interest rates. A FAFSA is not required to apply for the PLUS loan; however, students are encouraged to file a FAFSA so that they can receive the maximum aid available. Parents may download an application online from The Solution Center (https://www.uml.edu/thesolutioncenter/financial-aid/Forms.aspx). Applications should be returned to the financial aid for processing. This is a loan that needs to be repaid by the parent/stepparent.

2. No teaching/research assistantship may be awarded to a graduate student who fails to maintain good academic performance. A non-need based federal loan offers up to the cost of attendance minus financial aid per academic year to qualified graduate students and parents/stepparents of undergraduate dependent students. Interest rate is fixed and repayment begins 45-60 days after the second disbursement. Refer to the Direct Loan website (http://www.ed.gov/offices/OSFAP/DirectLoan/index.html) for current interest rates. A FAFSA is not required to apply for the PLUS loan; however, students are encouraged to file a FAFSA so that they can receive the maximum aid available. Parents may download an application online from The Solution Center (https://www.uml.edu/thesolutioncenter/financial-aid/Forms.aspx). Applications should be returned to the financial aid for processing. This is a loan that needs to be repaid by the parent/stepparent.
standing (a grade point average under 3.0 on the official transcript). See the Academic Standing information at www.uml.edu/catalog/graduate/policies/Academic_Standing.htm.

3. No University-funded teaching/research assistantship may be awarded to a master’s degree candidate if he/she has completed the total number of credits required for his/her program.

4. Level III teaching/research assistantships may only be awarded to graduate students who have reached doctoral candidacy (i.e., completed all course work, oral/written and language examinations) and are enrolled in dissertation research.

Teaching and Research Assistants are awarded either a semester or a yearly contract. The current negotiated agreement between The University of Massachusetts Lowell Board of Trustees and the Graduate Employee Organization is posted on the Human Resources website. Current stipend levels may be found there as well.

Graduate Student Assistantships

A limited number of student assistantships may be available in the departments. Students in this category are paid an hourly rate and are obligated to pay their own tuition and fees. All queries concerning assistantships should be directed to the graduate coordinator (https://www.uml.edu/Grad/Accepted-Students/coordinators.aspx) in the student’s department.

Doctoral Programs Offered

Listed by Degree Earned

- Doctor of Education
- Doctor of Engineering
- Doctor of Nursing Practice
- Doctor of Philosophy
- Doctor of Physical Therapy
- Doctor of Science
- Leadership in Schooling (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
- Language Arts & Literacy (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
- Mathematics & Science Education (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)

Doctor of Philosophy in Engineering (Ph.D.)

- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Energy Engineering
- Mechanical Engineering
- Mechanical Engineering/Chemical Engineering
- Mechanical Engineering/Computer Engineering
- Mechanical Engineering/Electrical Engineering
- Mechanical Engineering/Energy Engineering
- Mechanical Engineering/Manufacturing
- Mechanical Engineering/Manufacturing Engineering
- Plastics Engineering

Doctor of Nursing Practice (DNP)

- Nursing

Doctor of Philosophy (Ph.D.)

- Applied Psychology and Preventative Science
- Applied Biology (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
- Biomedical Science;
- Developmental & Evolutionary Biology;
- Quantitative Biology & Biophysics; and
- Cellular & Molecular Biology
- Biomedical Engineering & Biotechnology
- Business Administration & Technology
- Management International
- Business Accounting Leadership Finance Management Information Systems
- Chemistry Biochemistry Environmental Studies Green
Chemistry

- Computer Science
- Bio/Chemical Informatics
- Computational Mathematics
- Criminology and Criminal Justice
- Crime, Criminals & Community
- Global Perspectives on Crime & Justice
- Victims, Crime & Justice
- Global Studies
- Security & Human Rights
- Socio-Economic Development
- Comparative Cultures
- Marine Sciences & Technology
- Nursing
- Pharmaceutical Science
- Physics
- Applied Mechanics
- Energy Engineering
- Atmospheric Sciences
- Radiological Sciences
- Polymer Science
- Polymer Science/Plastics Engineering

Doctor of Physical Therapy (DPT)

- Physical Therapy

Doctor of Science

- Public Health
- Epidemiology

Master's Programs Offered

Listed by Degree Earned

- Master of Arts
- Master of Business Administration
- Master of Education
- Master of Music
- Master of Public Administration
- Master of Public Health
- Master of Science
- Master of Science in Engineering
- Education Specialist

Master of Arts (MA)

- Community Social Psychology

Master of Business Administration (MBA)

- General Business
- Accounting
- Business Analytics
- Entrepreneurship
- Finance
- Healthcare
- Information Technology
- International Business
- Managerial Leadership
- Marketing

Master of Education (M.Ed.)

- Curriculum & Instruction
- Autism Studies
- Science Education, beyond initial
- Math Education, beyond initial
- Educational Administration
- Higher Education
- Reading & Language

Master of Music (MM)

- Music Education
- Community Music

Master of Public Administration (MPA)

- Public Administration

- Human Service Management
• Public Humanities and the Arts
• Justice Administration

Master of Public Health (MPH)

Public Health (https://www.uml.edu/Health-Sciences/Public-Health/Programs-of-Study/masters/MPH.aspx)
• Dietetics
• Epidemiology
• Healthcare Management
• Nutrition
• Social and Behavioral Sciences

Master of Science (MS)

• Accounting
• Autism Studies
• Biological Sciences BioinformaticsBiotechnologyEducation, Communication and Outreach Option (This program does NOT lead to teaching licensure)
• Biomedical Engineering &Biotechnology Biomedical &Biotechnology (PSM)
• Business Analytics
• Chemistry Chemistry &Polymer Science (PSM)Pharmaceutical Biochemistry (PSM)
• Clinical Laboratory Sciences Clinical Lab Science (PSM)
• Computer Science Bio/Chemical InformaticsSoftware Entrepreneurship - Not Accepting new applications Entrepreneurship (PSM) - Not Accepting new applications
• Co-op Option in Engineering (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
• Engineering Management
• Entrepreneurship
• Environmental Studies Atmospheric SciencesAtmospheric Sciences (PSM)Environmental Engineering SciencesEnvironmental Geoscience (PSM)
• Finance
• Health Information Management Health InformaticsHealth Management
• Information Technology
• Marine Sciences &Technology Coast &Ocean Admin. Science/Technology (PSM)
• Mathematics Applied &Computational MathematicsIndustrial Mathematics (PSM)Mathematics for TeachersProbability &Statistics
• Nursing Adult / Gerontological Nursing Family Health Nursing
• Pharmaceutical Science
• Physics
• Public Health
• Radiological Science &Protection Radiological Science and Protection (PSM)Medical Physics
• Security Studies CBRNE SecurityCritical Infrastructure ProtectionCybersecurity

Master of Science in Engineering (M.S.E.)

• Chemical Engineering Leadership
• Civil Engineering LeadershipEnvironmental Geotechnical Structural Transportation
• Computer Engineering Leadership
• Electrical Engineering LeadershipOptics
• Energy Engineering Leadership Nuclear Solar
• Mechanical Engineering Leadership
• Plastics Engineering Leadership Coatings &Adhesives Fibers &Composites Synthetic Fibers

Education Specialist (EdS)

• Administration, Planning &Policy (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
• Curriculum &Instruction (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf) Education of Diverse Populations
• Reading &Language (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
About Graduate Certificates

Most graduate certificate are comprised of four courses designed to provide specific knowledge and expertise vital to today’s changing and complex needs in the work place. In most cases courses may be applied toward a degree program.

Requirements to Complete a Graduate Certificate

The courses to complete the certificate must be completed within a five year period with a minimum 3.0 grade point average, and with no more than 3 credits below B. Courses completed for one certificate may not be used for another certificate. Courses may not be transferred into a graduate certificate; however, approved course substitutions are allowed.

Certificate Application Process

Individuals must complete a simplified application and provide an official undergraduate transcript indicating that a baccalaureate degree has been awarded. GRE’s are not required. NOTE: If your bachelor’s degree is from outside of the U.S., you may be required to take the TOEFL examination. See the university’s requirements for graduate admission.

Graduate Certificates Offered

- Additive Manufacturing (AM) in Radio Frequency (RF) & Microwave (MW) Applications
- Applied Statistics
- Behavioral Intervention in Autism for Board Certified Behavior Analyst
- Behavioral Management in Autism (BCaBA)
- Biomedical Engineering and Biotechnology
- Biotechnology & Bioprocessing
- Business Analytics
- Chemistry
- Clinical Pathology
- Commercial Development for Plastic Engineers
- Communications Engineering
- Composites and Materials
- Criminal Justice Leadership & Policy Development
- Cyber Security
- Design and Manufacturing
- Diversity in the Workplace
- Domestic Violence Prevention
- Energy Conversion
- Environmental Atmospheric Science
- Environmental Biotechnology
- Environmental GeoScience
- Ergonomics & Biomechanics
- Financial Management
- Forensic Criminology
- Foundations of Business
- Health Informatics
- Health Management
- Human Computer Interaction
- Integrated Engineering Systems (interdisciplinary)
- Innovation and Entrepreneurship
- Materials Sciences & Engineering
- Medical Imaging and Instrumentations
- Medical Plastics Design & Manufacturing
- Microelectromechanical Systems/Nanoelectromechanical Systems (interdisciplinary)
- Microwave and Wireless Engineering
- Modeling, Simulation, and Control of Systems and Processes
- Molecular & Cellular Biotechnology
- Nutritional Sciences

For more information, please visit the University's requirements for graduate admission.
Professional Science Master’s (PSM)

What differentiates the PSM from the core Master’s degree?

The Professional Science Master’s (PSM) is an innovative, non-thesis degree option designed for students to pursue advanced training in science, health or engineering while simultaneously developing professional leadership skills highly valued by employers. PSM programs typically consist of 8 core courses in science, health or engineering, three professional courses in leadership, communication and project management, a paid internship or professional development project and a reflective seminar. PSM programs have been developed in concert with industry in response to employer demands for specific skills and knowledge above and beyond the core science curriculum.

In contrast to typical masters degrees, which require a thesis as a step toward preparation for an academic career, PSM programs are designed as terminal degrees that prepare candidates to compete in the global market. In essence, PSM programs are the MBAs of the 21st century. The National PSM Association offers networking and professional workshops to promote continued career development for PSM alumni across the country.

What PSM programs are available at UMass Lowell?

Graduates earn a masters degree in science with a PSM Option in the fields indicated below.

Biological Sciences
(https://www.uml.edu/Catalog/Graduate/Sciences/Biology/Default.aspx)

- Applied Biotechnology
- Environmental Biotechnology
- Biosafety
- Project Management in Life Sciences

Biomedical Engineering and Biotechnology—Applications for this program have been suspended.

Chemistry
(https://www.uml.edu/Catalog/Graduate/Sciences/Chemistry/Default.aspx)

- Chemistry and Polymer Science
- Pharmaceutical Biochemistry

Clinical Laboratory Sciences—Applications for this program have been suspended.
Learning Outcomes Assessment Policy

In keeping with the University’s commitment to excellent educational experiences and high-quality programs for its students, and consistent with practices at other institutions within the state and nationally, UMass Lowell routinely engages in the assessment of student learning at the course, program, institution and systems levels. The learning outcomes assessment process may include a variety of methods such as standardized tests, student surveys and focus groups, campus developed instruments, and a review of student will be protected. In circumstances beyond the individual course level, the identity of the student will be protected. The student’s name, grade or other identifying information will be removed before the student work is reviewed. Selected student work may be subject to review by a limited cohort of higher educational personnel, primarily faculty. Assessment of student learning is undertaken primarily for the purpose of improving student learning, curriculum development, instructional improvement, and enhancing student academic success. Assessment activities will have absolutely no effect on a student’s grade, academic standing, ability to transfer, or ability to be graduated. UMass Lowell will take all necessary steps to ensure the confidentiality of all student records and student work reviewed through this process in accordance with FERPA regulation.

UMass System Graduate Programs

UMass Lowell offers two intercampus programs drawing on the strengths of the whole UMass System.

- Marine Science
- Biomedical Engineering & Biotechnology Program

Bachelor’s to Master’s Programs

Earn Two Degrees in as Little as Five Years

- Eligibility
- Course Credits
- How to Transition
- Francis College of Engineering Expanded Bachelor’s to Master’s Policy

NOTE: A course with a Pass/No Credit election cannot be applied to the university’s Bachelor’s to Master’s Program.

In order to encourage outstanding UMass Lowell
undergraduate degree students to continue their studies towards an advanced degree, qualified students may transition to the Bachelor’s to Master’s programs include the Fast Track to Teaching and Plus 1 programs.)

This option carries distinct benefits. No graduate application is required for UMass Lowell's Bachelor's to Master's programs. In addition, many departments offer course credit benefits. (For detailed information regarding specific course credit benefits, please see the Graduate Coordinator in the respective masters degree granting department.)

The transcripts of the students who declare their intention to transition to master's programs will be reviewed by the graduate coordinator to ensure the GPA and prerequisite requirements are met. Students should also provide one letter of recommendation to support their transition to the master's program. Refer to the Bachelor’s to Master's (https://www.uml.edu/Academics/undergraduate-programs/bachelors-masters.aspx) page for more information.

Eligibility

Any UMass Lowell undergraduate junior or senior with a grade point average of 3.0 or better may apply to a Masters degree program at UMass Lowell under the Accelerated Bachelors to Masters Degree Option. However, to be accepted into this option the following minimum conditions must be met (individual departments may have more stringent requirements):

1. The student must have a cumulative grade point average of 3.0 or above at the time the baccalaureate degree is conferred in order to maintain eligibility for this option.
2. The student must apply for and receive his/her baccalaureate degree before matriculating into the graduate program.
3. Once accepted, a student is expected to begin his/her graduate studies in the semester immediately following conferral of the baccalaureate degree unless the student submits a written request for deferral. A student is allowed to defer for a maximum of one year from the date of acceptance. For example, if accepted for the Spring 2020 semester, an individual can defer to either the Fall 2020 or Spring 2021 semesters. A student defers acceptance by submitting a written request to the Office of Graduate Admissions (mailto:Graduate_Admissions@uml.edu). All deferral requests must specify which semester the student wishes to enroll. Students who are confirmed to transition to the Bachelor's to Masters Degree Option who opts not to enroll in at least one course within the graduate department to which they have been accepted in the semester immediately following conferral of the bachelors degree and who does not submit a deferral request forfeits his/her rights to benefits under this program. Should the student decide to begin his/her studies at a later time he/she will be required to the graduate program and submit all required admission materials.

Course Credits

The graduate degree granting department may allow course credit benefits; however, the following requirements apply:

1. Any graduate courses taken by a baccalaureate degree student that are credited towards the Masters degree must have been obtained with a grade of B or better.
2. A graduate level course used to fulfill both an undergraduate degree requirement and a undergraduate minor requirement is also eligible to be used in the Master’s, but only up to the maximum number allowed for the specific Master’s degree.
3. Only courses of 5000 level or higher may count toward the Masters degree.
4. Transfer credits is not accepted for graduate certificates. The Bachelors to Master’s program benefits do not include credits toward a graduate certificate.
5. As defined by the graduate degree granting department, a maximum of 12 graduate credits (5000 level or above) may be used for the masters degree as follows:
   - Up to 12 credits may be transferred provided these graduate credits were taken in excess of the university minimum of 120 baccalaureate degree credits, or, for programs requiring fewer than 33 credits, a maximum of up to six credits of graduate (5000 level or higher) courses may be used by a student in the Accelerated Bachelor's to Master’s Degree Option for both the
graduate and undergraduate degrees; or,

- for program requiring 33-35 credits, at the discretion of the affected department, a maximum of up to nine credits of graduate (5000 level or higher) courses may be used by a student in the Accelerated Bachelor's to Master's Degree Option for both the graduate and undergraduate degrees; or,

- for programs requiring 36 or more credits, at the discretion of the affected department, a maximum of up to twelve credits of graduate (5000 level or higher) courses may be used by a student in the Accelerated Bachelor's to Master's Degree Option for both the graduate and undergraduate degrees.

6. Students must petition to have specific courses (5000 level or above) taken during their undergraduate career apply towards their graduate degree via an Academic Petition.

7. A course with a Pass/No Credit election cannot be applied to the University's Bachelor's to Master's Program.

6. Graduate Program Requirements

Additionally, all Bachelors to Masters rules and regulations, including minimum grade requirements, must be met.

Eligibility

Applicants for this expanded program must have a minimum undergraduate cumulative GPA of 3.0 in appropriate engineering majors from other ABET-accredited institutions. As with current admissions policy in Engineering, the GRE may be waived for applicants meeting these criteria (minimum GPA from ABET-accredited engineering program).

Double Counting

Consistent with the current transfer policy, only graduate courses with grades of B or better may transfer. Also consistent with current policy, each department decides whether a course from another institution may or may not fulfill a departmental program requirement.

Graduate Programs

UMass Lowell offers more than three dozen master's programs, including Education Specialist (Ed.S.) post-graduate programs. Many of our programs have non-thesis options. If you're not ready to matriculate into a full program, consider our certificate programs. If you are looking for a doctoral program, we offer more than two dozen in a wide range of disciplines.

Online & Professional Studies Programs

UMass Lowell offers a number of graduate degrees and certificates (https://gps.uml.edu/academic-programs/?planlevels=graduate) and part-time undergraduate degrees and certificates (https://gps.uml.edu/academic-programs/?planlevels=undergraduate) entirely online, or as a mix of online and on-campus courses through its Division of Graduate, Online & Professional Studies. By making the courses available online - during the evening and on weekends - the University makes it easier for busy professionals to fit education into their lives.
General Regulations for Graduate Students

Each University student is subject to two sets of academic regulations - those of the University as a whole, which are cited in this section, and the academic rules of the college and program in which he or she is enrolled. The academic rules of colleges and programs are listed in sections devoted to college programs.

In registering for courses, each student assumes full responsibility for knowledge of and compliance with the definitions, regulations, and procedures for the University, as set forth in this publication. Moreover, in accepting admission to the University, each student assumes responsibility for knowledge of and compliance with the definitions, regulations, and procedures of the University pertaining to his or her student status as set forth in the appropriate UML publications.

Students who have questions about the interpretation or application of University academic policy should consult the dean of their college or the Vice Provost for Graduate Education.

Graduate Policies

- Academic Integrity
- Academic Standing
- Acceptance of Master’s Degree Toward Doctoral Requirements
- Commencement
- Course Credit
- Course Descriptions
- Degree Completion: Doctoral Degree
- Degree Completion: Master’s Degree
- Equal & Fair Treatment
- Grading Policies
- Graduate Clearance
- Graduate Grade Appeal Process
- Learning Outcomes Assessment
- Registration & Enrollment
- Right of Access to Student Records
- Statue of Limitations
- Transcripts
- Transfer Credits
- University Appeals Process Regarding Academic (Non-misconduct) Issues
- University Disciplinary Procedures
- Veterans Benefits and Transition
- Withdraw from a Course or the University

Academic Integrity Policy

UNIVERSITY OF MASSACHUSETTS LOWELL POLICY AND PROCEDURES RELATING TO STUDENT ACADEMIC INTEGRITY AND MISCONDUCT

I. Statement of Principles: The University has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others academic endeavors. Academic dishonesty is prohibited in all programs of the university.

II. Academic Misconduct Subject to Disciplinary Action:

(1) Academic misconduct is an act in which a student:

(a) Seeks to claim credit for the work or efforts of another without authorization or citation;
(b) Uses unauthorized materials or fabricated data in any academic exercise;
(c) Forges or falsifies academic documents or records;
(d) Intentionally impedes or damages the academic work of others;
(e) Engages in conduct aimed at making false representation of a student's academic performance; or
(f) Assists other students in any of these acts.

(2) Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; getting unauthorized access to examinations or course materials; submitting, without the permission of the current instructor, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or
other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

III. Possible Disciplinary Sanctions:

(1) The following are the disciplinary sanctions that may be imposed by an instructor for academic misconduct:

(a) An oral or written notice of misconduct;
(b) An assignment to repeat the work, to be graded on its merits;
(c) A lower or failing grade on the particular assignment or test;
(d) A lower grade in the course;
(e) A failing grade in the course;

In addition, an instructor or the Academic Dean may recommend the following sanctions:

(f) A non-deletable failing grade in the course;
(g) Suspension from the University; (h) Expulsion from the university.

Sanctions f-h are imposed by the Office of the Provost.

(2) One or more of the disciplinary sanctions listed above may be imposed for an incident of academic misconduct.

IV. Definitions

As used herein:

(1) Office of the Provost means the Provost, Vice Provost or a designee.
(2) Days means academic calendar days and excludes Saturdays, Sundays, legal holidays and days upon which the university is closed.
(3) Academic Dean means the Academic Dean or designee for the college in which the subject course is taught.
(4) Instructor refers to the Instructor of Record.
(5) Minor Disciplinary Sanction means a disciplinary sanction, identified in paragraph III (1) (a)-(e) and imposed, for academic misconduct, upon a student by an instructor.
(6) Major Disciplinary Sanction means a disciplinary sanction, identified in paragraph III (1) (f)-(h) and imposed, for academic misconduct, upon a student by the Office of the Provost or the Academic Integrity Appeals Board upon the recommendation of the instructor or the Academic Dean or imposed at the discretion of the Office of the Provost.
(7) Notice to the student, whenever required herein, shall be e-mailed to the student's official student.uml.edu e-mail address or mailed to the student by regular first class United States mail at his or her current address as maintained by the university.

V. Imposition of Disciplinary Sanctions by the Instructor:

(1) Where an instructor concludes that a student enrolled in one of his or her courses has engaged in academic misconduct, the instructor may impose one or more of the following disciplinary sanctions, as listed under paragraph III, subsections (a) through (e):

(a) An oral or written notice of misconduct;
(b) An assignment to repeat the work, to be graded on its merits;
(c) A lower or failing grade on the particular assignment or test;
(d) A lower grade in the course;
(e) A failing grade in the course.

(2) When possible, prior to imposing a minor sanction, the instructor shall notify the student that the instructor believes an act of academic misconduct has occurred, that a sanction may be imposed, and that a Notification of Academic Dishonesty Form will be filed with the Office of the Provost.

(3) Upon the imposition of a minor sanction under this section, the instructor shall notify the Office of the Provost.

(4) Within 10 days following receipt of such notice, the Office of the Provost shall provide notice of the imposed discipline to the student, the instructor and to the Academic Dean.

(5) A student who receives notice of a disciplinary sanction imposed under this section has the right to a hearing before the Academic Dean to contest the determination that academic misconduct occurred or the disciplinary sanction imposed or both. If the student desires such a hearing, he or she must file a written request with the Office of the Provost and the Academic Dean within 10 days of receipt of notice from the Office of the Provost.

(6) In the event that the student does not file a written request for an appeal within 10 days, the Office of the Provost shall review the matter with respect to the subject student and may, at his or her discretion, uphold the recommended sanction or impose a major sanction. In any event, the Office of the Provost shall, within a reasonable time, provide notice of the outcome to the student, the instructor and to the Academic Dean.

VI. Recommendation of Major Disciplinary Sanction by the
Instructor:

(1) Where an instructor concludes that a student enrolled in one of his or her courses has engaged in academic misconduct in the course, the instructor for that course may recommend one or more of the following disciplinary sanctions:

   (a) Suspension of the student from the University.
   (b) Expulsion from the University.
   (c) A non-deletable failing grade in the course.
   (d) A non-deletable failing grade in the student’s program.
   (e) Expulsion from the University.
   (f) A non-deletable failing grade in the course.
   (g) Suspension from the University.
   (h) Expulsion from the University.

(2) When possible, prior to the recommendation of a major sanction, the instructor shall notify the student that the instructor believes an act of academic misconduct has occurred, that a major sanction is being recommended, and that a Notification of Academic Dishonesty Form will be filed with the Office of the Provost.

(3) Upon the recommendation of a major sanction under this section, the instructor shall notify the Office of the Provost using the Notification of Academic Dishonesty Form (https://powerforms.docusign.net/0687535d-2f15-499b-b1e5-1190d3448cb?env=na2). Notification to the Office of the Provost shall occur with 10 days and shall include identification of the student, a description of the misconduct and a specification of the sanction recommended.

(4) Within 10 days following receipt of such notice, the Office of the Provost shall provide notice of the recommended discipline to the student, the instructor, and the Academic Dean. Notification to the student shall include a statement of misconduct, specification of the sanction recommended, a statement indicating the student’s right to an appeal before the Academic Dean and a copy of the policy and procedures set forth herein.

(5) A student who receives notice of a disciplinary sanction recommended under this section has the right to a hearing before the Academic Dean to contest the determination that academic misconduct occurred or the disciplinary sanction recommended or both. If the student desires such a hearing, he or she must file a written request with the Office of the Provost, and the Academic Dean within 10 days of receipt of notice from the Office of the Provost.

(6) In the event that the student does not file a written request for an appeal within 10 days, the Office of the Provost shall review the matter and may, at his or her discretion, impose or modify the sanction recommended. In any event, the Office of the Provost shall, within a reasonable time, provide notice of the outcome to the student, the instructor, and to the Academic Dean.

VII. Appeal to the Academic Dean: When an appeal to the Academic Dean is commenced in accordance with the provisions set forth in Paragraphs V(5) or VI(5), the Academic Dean shall proceed in accordance with this section to consider one or more of the disciplinary sanctions listed in paragraph IV, subsections (1) (a) through (h).

(1) Conference With Student: The Academic Dean shall offer to discuss the matter with the student. The purpose of this discussion is to permit the Academic Dean to review with the student the charges levied against him or her and to afford the student an opportunity to respond.

(2) Conference With Instructor: The Academic Dean shall attempt to discuss the matter with any involved instructor. This discussion may occur either before or after the conference with the student. It should include consultation with the instructor on the facts underlying the alleged academic misconduct and on the appropriateness of the imposed or recommended sanction.

(3) Determination that No Academic Misconduct Occurred: If, as a result of discussions under subsections (1) and (2), the Academic Dean determines that academic misconduct did not in fact occur or that the disciplinary sanction is not appropriate under the circumstances, the Academic Dean shall notify the instructor and the Office of the Provost. The Office of the Provost shall promptly thereafter notify the student and take appropriate action with respect to the student records.

(4) If, as a result of discussions under subsections (1) and (2), the Academic Dean determines that academic misconduct did occur and that one or more of the disciplinary sanctions listed under paragraph III, subsections (1) (a) through (h) is appropriate, the Academic Dean shall prepare and forward to the Office of the Provost, within 10 days, a written Finding of Misconduct which shall include identification of the student, a description of the alleged misconduct, a summary of evidence, findings of fact and a specification of the disciplinary sanction imposed.

VIII. Appeal to the Office of the Provost

The decision reached by the Academic Dean may be appealed to the Provost Office of the Provost if the student believes that he or she did not receive due process.

Grounds for Appeal of Due Process

An appeal to the Office of the Provost shall be limited to a review of supporting documents and the process and outcome of the Academic Dean or designee for one or more of the following grounds:

Bias by the Instructor, Academic Dean, or designee substantially influenced the outcome of the process to the detriment of the student.

New, relevant information has come to light that was not available at the time of the hearing by the Academic Dean.

Unusual procedures were followed or the procedures outlined herein were not followed, to the detriment of the student.
If the student desires such a hearing, he or she must file a written request with the Office of the Provost and the Academic Dean within 10 days of receipt of notice from the Office of the Provost. The request must be based upon the grounds for appeal listed above.

(2) When an appeal to the Office of the Provost is commenced in accordance with this paragraph, the Office of the Provost shall review the matter with respect to the subject student and may, at his or her discretion, uphold, vacate or modify the discipline imposed or direct such appeal to be heard by the Academic Integrity Appeals Board. In any event, the Office of the Provost shall, within a reasonable time, provide notice of the outcome to the student, instructor, and to the Academic Dean.

(3) In the event that the student does not file a written request for an appeal within 10 days, the Office of the Provost shall review the matter with respect to the subject student and may, at his or her discretion, uphold or modify the discipline imposed. In any event, the Office of the Provost shall, within a reasonable time, provide notice of the outcome to the student, instructor, and to the Academic Dean.

IX. Role of the Academic Integrity Appeals Board:

(1) The Academic Integrity Appeals Board is an ad hoc committee appointed by the Office of the Provost and consists of a minimum of three faculty members chosen by the Office of the Provost with no two members selected from the same College; the board shall not include a faculty member from within the department initiating charges of academic dishonesty. The Board is chaired by the Office of the Provost who shall vote only in the case of a tie. [Or One member shall serve as Chair at the direction of the Office of the Provost. The Chair shall vote only in the case of a tie.]

When an appeal is directed to the Academic Integrity Appeals Board by the Office of the Provost in accordance with the provisions set forth in Paragraphs VIII, the Academic Integrity Appeals Board shall schedule the hearing, within a reasonable time period, at a time that is mutually agreed upon by the student, Office of the Provost and members of the Academic Integrity Appeals Board.

(2) Reasonably in advance of the hearing, the Academic Integrity Appeals Board shall obtain from the Academic Dean, in writing, a full explanation of the facts upon which the determination of misconduct was based and shall provide to the student a copy of the policy and procedures set forth herein.

(3) The hearing before the Academic Integrity Appeals Board shall be conducted in accordance with the following requirements:

(a) The Academic Integrity Appeals Board shall consider relevant evidence including documentary evidence and testimony of the instructor, student, Chair and/or Dean where appropriate.

(b) The student shall have the right to be heard and to present relevant evidence, including documentary evidence and the testimony of witnesses, in his or her own behalf.

(c) The Academic Integrity Appeals Board shall maintain a record of the hearing including any and all pleadings and documentary evidence presented.

(d) The Academic Integrity Appeals Board shall prepare written findings of fact and a written statement of its decision based upon the record of the hearing.

(e) The Academic Integrity Appeals Board may find academic misconduct and impose a sanction of suspension or expulsion only if the proof of such misconduct is clear and convincing. In other cases, a finding of misconduct must be based on a preponderance of the credible evidence.

(f) The Academic Integrity Appeals Board may impose a disciplinary sanction that differs from the recommendation of the Academic Dean.

(g) The instructor or Academic Dean may be witnesses at the hearing conducted by the Academic Integrity Appeals Board, but shall not have responsibility for conducting the hearing.

(4) Determination that No Academic Misconduct Occurred: If, after the hearing, the Academic Integrity Appeals Board determines that there is insufficient evidence that academic misconduct occurred or that no disciplinary sanction is appropriate under the circumstances, the Academic Integrity Appeals Board shall notify the instructor, the Academic Dean and the Office of the Provost. The Office of the Provost shall promptly thereafter notify the student and take appropriate action with respect to the student records.

(5) Process Following Determination by the Academic Integrity Appeals Board that Academic Misconduct Occurred:

(a) If, after the hearing, the Academic Integrity Appeals Board determines that academic misconduct did occur and that one or more of the disciplinary sanctions listed under paragraph III, subsections (1) (a) through (h) is appropriate, the Academic Integrity Appeals Board shall prepare and forward to the Office of the Provost, within 10 days, a written Finding of Misconduct which shall include identification of the student, a description of the misconduct and a specification of the disciplinary sanction to be imposed.

(b) Within 10 days following receipt of the written Finding of Misconduct from the Academic Integrity Appeals Board, the Office of the Provost shall provide written notice of the imposed discipline to the instructor, the Academic Dean and
Academic Catalog 2020 - 2021 / Graduate - Policies

Academic Standing

- Warning Notice
- Probation
- Academic Dismissal and Reinstatement
- Graduate Fresh Start
- Spring 2020 Academic Standing

GPA Minimum

No more than 6 course credits of grades below a B may be counted toward the master’s degree; no more than 9 credits of the same grades may be counted toward the doctorate. No graduate degree will be awarded to any student whose overall cumulative grade point average falls below 3.0.

Academic Standing

The university will temporarily suspend our student Academic Standing status process. Designations of Warning, Probation, or Dismissal will not appear on transcripts for Spring or Summer 2020. Students will maintain their spring/summer 2020 academic standing through the Fall of 2020.

Warning Notice

Any graduate student whose semester grade point average (GPA) falls below 3.0 will automatically receive a warning notice which will also be sent to the graduate coordinator, and filed with the student’s record in the Registrar’s Office. The student will be strongly advised to meet with the graduate coordinator or his/her designee within 30 days of receipt of the warning notice and develop an academic plan to bring his or her GPA to a level above 3.0.

Probation

Any graduate student whose semester GPA falls below 3.0 for a second time, will automatically receive a probation notice from the Vice Provost for Graduate Education. Copies of the letter will be sent to the graduate coordinator, chairperson, college dean, and also placed on file with the student’s record in the Registrar’s Office. Within 30 days, the department graduate committee, chaired by the graduate coordinator or his/her designee, will meet with the student and decide whether to recommend loss of degree candidacy. Such a decision or other course of action will be fully documented in writing with copies sent to the chairperson, and college dean. A recommendation of loss of degree candidacy and dismissal are subject to the approval of the college dean.

Academic Dismissal and Reinstatement

Any student whose semester GPA falls below 3.0 for a third time, and whose cumulative GPA is below 3.0, will automatically be dismissed from his or her graduate program and the University. Reinstatement will be considered if the student provides a detailed justification and academic plan concerning how he or she will correct this academic deficiency. The plan must be attached to a Graduate Academic Petition and approved by the graduate coordinator, chairperson, the college dean, and the Vice Provost for Graduate Education or his/her designee. If any of the above individuals disapproves of the reinstatement, the dismissal will remain in effect and no subsequent appeals will be considered.

Independent of the warning/probation/dismissal system, the dean of the college where the student’s degree program resides may at any time examine the performance of any student not meeting the academic standard expected of graduate students within that college and recommend to the appropriate graduate committee a course of action including dismissal.

For the procedure for formal adjudication of any academic issues (non-misconduct) which may arise, please see University Appeals Process Regarding Academic (non-misconduct) Issues of Graduate Students.

Graduate Fresh Start

Master and Doctoral degree candidates and non-degree students who have been absent from the University for four years or longer may be readmitted under the program Graduate Fresh Start. If admitted into a degree granting program, under the terms of Graduate Fresh Start, a returning graduate student will be treated as if s/he were a new student. A maximum of two courses (six credits) at the 500 level or higher completed during earlier periods of enrollment with grades of "B" or better may, with the approval of the degree granting department, be transferred into the degree program. These courses must be transferred via an academic petition and will be accepted toward graduation but not included in the cumulative grade point average (GPA). Thesis and dissertation research credits are ineligible for transfer. Courses completed during earlier periods of enrollment with grades below "B" are not eligible for transfer. A student may be readmitted under the Graduate Fresh Start program only once at the graduate level.

Students who wish to be considered for the Graduate Fresh Start Program must follow the normal procedures for admission to the University and file a Graduate Fresh Start Contract (https://www.uml.edu/docs/graduatefreshstart16_tcm18-229435.pdf) (pdf). Academic Petitions for transfer credits must be approved by the appropriate graduate coordinator and/or department chair of the degree granting department, and must be filed with the University Registrar. In addition, the student must submit a personal statement which addresses personal
and professional growth during the period of time in which the student was absent from the University which supports the students potential for academic success. If admitted, credits and GPA start at zero. Transfer courses may count towards the degree, but are not included in the GPA.

All courses taken and grades achieved during earlier periods of enrollment will appear on the transcript along with a notation that they are not included in the cumulative grade point average. Once this change is made to the academic record, the change can NOT be reversed.

Spring 2020 Academic Standing

The university will temporarily suspend our student academic standing status process. Designations of "Warning", "Probation", or "Dismissal" will not appear on transcripts for Spring 2020. Students will maintain their Spring 2020 academic standing through the Fall of 2020. The university will determine students who have earned a place on the dean's list based on their calculated letter-grade GPA for Spring 2020.

Acceptance of Foreign or American Master's Degree toward Doctoral Requirements

Students accepted into a doctoral program who hold a master’s degree in the same or a closely related discipline from a U.S. or foreign academic institution will have their transcripts and supporting documentation reviewed by the department graduate committee.

The committee may choose one of the following actions:

1. Approve all coursework and thesis for the master’s degree up to the total number of credits granted by the University of Massachusetts Lowell department for its master’s degree, and thereby require the student to complete only “beyond the master's” course/thesis credits for the doctorate.
2. Accept the U.S. or foreign master's degree, but because of deficiencies in the student’s master’s program, require a limited number of graduate courses to be added to the total credits required for doctoral degree completion “beyond the master’s”.
3. Require that a student with a U.S. or foreign master’s degree obtain a University of Massachusetts Lowell master’s degree before proceeding to the doctorate.

All coursework for U.S. or foreign master's degrees considered for approval by the department must be at a grade level of B or better. Official, documented verification of the degree awarded must also be provided.

Commencement

Commencement

Conferring of Degrees

In May for students completing degree requirements during the spring semester.
In late August for students completing degree requirements during the summer term.
In February for students completing degree requirements during the fall semester.

Individuals who wish to submit verification of degree completion to employers or to graduate schools during the period between the end of their final grading period and the awarding of diplomas may obtain a letter of completion from the Registrars Office.

Academic Honors

Due to the many fields and diversity of study at UMass Lowell, academic honors for graduate students are discipline-based and vary within respective colleges. Honors for graduate students are not listed on transcripts.

Replacement Diploma

Replacement diplomas may be ordered through Registrar's Office for an additional fee.

Registration and Enrollment Policies
Continuous Registration

In order to maintain continuity of enrollment, a matriculated student must register each fall and spring until the program of study is complete and the degree has been earned. A graduate student who plans to receive his/her graduate degree in the summer term (awarded in August) must register during the previous summer session in order to maintain continuous matriculation.

If for any reason a student is not registered for a course (because of a leave of absence or because the thesis or dissertation has been successfully defended, but the final manuscript has not been submitted to the library), the student must register for CONT.6010 (Continued Matriculation) in order to maintain continuous registration. Since students are not allowed to register if they have outstanding financial obligations to the university, it will be necessary for them to clear their financial record in order to register for Continued Matriculation.

Master’s students may only register for two semesters of Continued Matriculation. Doctoral candidates may register for up to three semesters. Exceptions to the this rule may be granted with approval of the academic department (Graduate Coordinator/Department Chair) and college dean. Students completing a thesis or dissertation must also have the approval of their thesis/dissertation advisor. Exceptions must be requested via a Graduate Academic Petition. If an exception is not granted, the student will be withdrawn from the University and need to reapply. If a student reappliies and is readmitted, the rules regarding the Statute of Limitations restart.

Continued Matriculation does not entitle a student to any use of university facilities, services or resources, but only maintains an active record and provides for appropriate mailings. Students who are engaged in academic work necessary to complete their thesis or dissertation, participate in a required full time internship or curricular practical training, or otherwise engage in or make use of University facilities or other resources must register for a minimum of 1 credit. (Note: Specific internship/CPT requirements will vary by department and students may be required to register for 3, 6, or 9 credits depending upon their program of study.)

The rules regarding the Statute of Limitations for the completion of master’s and doctoral degrees still apply to students registered for Continued Matriculation.

All international students on F-1 or J-1 visas must register as full-time students (9 credits) each semester until their degree requirements are completed. Any variance from this policy must be approved by the International Student and Scholars Office.

A student who fails to maintain continuous matriculation loses the status of a degree candidate and must reapply to the Graduate Admissions Office (https://www.uml.edu/Grad/default.aspx) (www.uml.edu/grad (https://www.uml.edu/Grad/default.aspx)) for readmission and for renewal of candidacy.

Dropping Classes and Refund Policy

Graduate students may drop courses during the first ten days of classes and receive a refund. No refund will be given after these time periods. To formally withdraw from a course during this period, or thereafter, the student must drop the course through SiS (https://www.uml.edu/Enrollment/SiS/default.aspx) self service (www.uml.edu/enrollment/isis/default.aspx (https://www.uml.edu/Enrollment/SiS/default.aspx)). If the student fails to officially drop a course, he or she will remain enrolled and be required to pay for tuition and fees. In addition, if the student does not drop a course and does not attend classes, he or she will receive an "F" on the official transcript.

Changes in Registration

Courses may be added or dropped through self-service in SiS (https://www.uml.edu/Enrollment/SiS/default.aspx) (www.uml.edu/enrollment/isis/default.aspx (https://www.uml.edu/Enrollment/SiS/default.aspx)). Students who wish to add a course during the sixth through 10th day of classes will need a permission number from the instructor of the course. Permission numbers are not needed to drop a course. In addition, students may change from audit to credit or from credit to audit during this period. Courses dropped during the first 10 academic days will not appear on the student’s permanent record. No new courses may be added and no course may be changed from audit to credit after the tenth academic day. Thereafter, a student wishing to drop courses must do so by the date indicated in the Graduate Academic Calendar (http://www.uml.edu/Registrar/Calendars/default.aspx (https://www.uml.edu/Registrar/Calendars/default.aspx)).

No refund of tuition and fees is allowed after the tenth day of the semester. The grades for courses dropped after the tenth day will appear as W on the student’s record.

Change of Program

A graduate student wishing to change departments or transfer to a doctoral program upon completion of his or her master’s degree must follow the steps listed below:

1. No transfers will be considered until the student has been
in the original department in which he or she was accepted for at least one semester.

2. All sections of a new application sheet must be completed.

3. If so desired, the student may request that all test scores, letters of recommendation, etc., in his or her original file be used as part of his or her new application package.

4. The student must specify on the application form when his or her master's degree will be completed and when he or she will actually begin doctoral studies (for students applying to a doctoral program).

5. A check made payable to University of Massachusetts Lowell to cover the application fee must be included, or payment must be made by credit card when applying online.

Course Credit

Maximum Semester Credit Limit
Graduate Credit for Undergraduate Courses
Undergraduate Credit for Graduate Courses

Maximum Semester Credit Limit

The usual course load for full-time graduate students is 9 credits/semester. Depending upon the program requirements and abilities of the student, individuals may carry more than 9 credits each semester. However, the absolute maximum number of total credits (combined undergraduate and graduate) for which a graduate student will be allowed to register is 18 credits/semester. The maximum number of thesis or dissertation credits for which a student may enroll in any semester is nine credits.

During the summer term students are classified as full-time when they are registered for a minimum of 9 credits which may combine courses/credits from the different sessions within the summer term. Students who enroll in only one of the accelerated summer session (summer I or summer II) may be considered by the institution as the equivalent to full-time for the specific time period of that session only when registered for a minimum of 6 credits. This is for enrollment purposes only. Please note: Financial aid, veterans benefits or other types of aid define 9 credits for full-time study.

Navitas Summer Pathway Program
The University of Massachusetts Lowell (UMass Lowell) offers a 10-week summer session to its Pre Undergraduate and Pre Masters international students. These students are admitted into a Bachelors or Masters program with the condition of a preparatory semester(s) which could encompass the summer session. The Pre Undergraduate and Pre Masters summer session consists of intensive academics of 18-22 clock hours per week in English, Mathematics and Cultural Support.

Graduate Credit for Undergraduate Courses

UMass Lowell courses at the 400 level are designed for seniors but under certain circumstances may be taken by graduate students for graduate credit. A maximum of 6 credits of 400 level courses may be used for credit toward the graduate degree with the permission of the degree granting department. Three hundred level courses and below are never counted toward a graduate degree. If a graduate student takes certain undergraduate courses to make up for background deficiencies or to satisfy language requirements, the course credit hours are not used as part of the graduate degree program but will appear on the graduate transcript.

Undergraduate Credit for Graduate Courses

A qualified junior or senior may take a course at the 500 level for undergraduate credit in accordance with the policy and procedures of the department or college in which the course is offered. The grade received in any such course is used in calculating the undergraduate's cumulative grade point average. Counting of graduate credits for both the bachelors and masters degrees is subject to departmental requirements.

At no time may grades computed in an undergraduate GPA be used toward a graduate GPA.

Course Designations

- Course Numbering System
- Continuing Graduate Research
- Course Prefixes
- Audit

Maximum Semester Credit Limit

The usual course load for full-time graduate students is 9 credits/semester. Depending upon the program requirements and abilities of the student, individuals may carry more than 9 credits each semester. However, the absolute maximum number of total credits (combined undergraduate and graduate) for which a graduate student will be allowed to register is 18 credits/semester. The maximum number of thesis or dissertation credits for which a student may enroll in any given semester is nine credits.
Course Numbering System and Designation:

- **4000-4999** - Undergraduate courses usually designed for juniors or seniors; no more than six credits may be taken for graduate credit with the permission of the graduate coordinator.
- **5000-5999** - Courses for graduate credit, but which may be taken by advanced undergraduates with the advisor’s permission.
- **6000-6999** - Graduate courses which are open only to graduate students.
- **7000-7999** - Seminars, special topic courses, projects, or thesis research for advanced candidates in master’s and doctoral degree programs.

Each course offering is designated by a four letter prefix and a four-digit course number (e.g., BIOL.5290).

Continuing Graduate Research

Once a student has completed the required number of credits for master’s or doctoral thesis/dissertation research with grades of PR or S (see summary of degree credit requirements), he or she will not be allowed to sign up for additional thesis/dissertation research credits. Instead, if required for teaching/research assistantships or immigration/visa purposes, the student may enroll in 3, 6, or 9 credits of Continuing Graduate Research designated _ _763, 766, or 769_ _ _ where the first two blanks represent the departmental designation, 3, 6, and 9 indicate the respective number of credits, and the last three blanks are the standard numbers which code to a particular faculty member in the department.

The two digit college prefix identifies a college department and/or special area. The three-digit course number identifies the course level.

Course Prefixes

Each college department and/or special subject area has been assigned an identifying two digit number within the numerical ranges specified as follows:

- **Education** - EDUC
- **Engineering** - CHEN, CIVE, EECE, ETEC, ENVE &MECH, MTEC, ENGY, ENGN, PLAS
- **Health** - PUBH &AREO, HSCI, NURS, DPTH, NUTR, HSCI, MLSC, EXER
- **Humanities/Social Sciences, Fine Arts** - AMST, LGST, ENGL, HIST, CRIM, PHIL, POLI, PSYS, ASP, SOCI, ECON, WLFT, WLGE, WLIT, WLAR, WLKH, WLCH, WLPO, WLAN, WLSI, WLSP, WLLA, ARHI, FAHS &ARTS, MUTH, MUAP MUED, MUHI, MUPF, MUEN, MUBU, MUSR, AEST
- **Management** - ACCT, FINA, MKTG, POMS, MIST, ENTR, MGMT, BUSI
- **Science and Math** - BIOL, LIFE, CHEM, ATMO, ENVI, GEOL, INFO, COMP, MATH, MSIT, PHYS, POLY, RADI
- **Biomedical Engineering** - BMBT
- **Marine Science** - im

Audit

A graduate student may, upon approval of the advisor and the instructor, register for a course on an audit basis, but must pay the full amount of tuition and fees. An audit student is not required to take tests or the final examination. A change in registration from audit to credit or credit to audit must be done during the add/drop period. Under no circumstances can a course taken for audit be given credit at a later date.

Equal and Fair Treatment

Under federal and state laws, all students are protected from discrimination based on race, color, religion, national origin, disability, gender, (including sexual harassment), age, sexual orientation, marital or veteran status. If you feel that you have been discriminated against based upon any one of these areas, you must contact Equal Opportunity and Outreach (EOO). These protections also include retaliation for filing complaints of discrimination. Concerns regarding course offerings, instructor and student attitudes should also be directed to EOO staff at 978-934-3565.

Students are responsible for adhering to the polices of the University regarding equal and fair treatment.

Graduate Grading Policies

Grading System

-Spring 2020 Grading Scheme
Grade Exclusion
Grades for Projects, Theses/Dissertations and Seminars
Incompletes
Course Listing on the Graduate Transcript
Audited Courses
Grade Appeal Process

Grading System

The grading system uses grades:

A+(4.0), A(4.0), A-(3.7)
B+(3.3), B(3.0), B-(2.7)
C+(2.3), C(2.0)
F(0.0)
FX (0.0) Failed due to Academic Misconduct (May not be replaced or deleted)

The following special grades are also used:
INC (Incomplete),
S (Satisfactory, B or better),
U (Unsatisfactory) for projects, theses/dissertations, and seminars only
AU (Audit)
W (Withdrawal from a course or from the University)
X (Withdrawal because of illness or personal emergency)
Q (Never attended but did not withdraw. This grade requires a letter from the instructor to the University Registrar stating the student never attended the class.)
PR (In Progress for theses or dissertations)
NC (No Credit for theses or dissertations where no progress has been made).

A student registering for research will do so each semester up to the total number recommended. No graduate degree will be awarded to a student whose cumulative average for course work in his or her program is below 3.0. Some programs may require a higher grade point average for graduation. The cumulative grade point average is computed from all graduate level courses taken for a grade at the University of Massachusetts Lowell.

SPRING 2020 GRADING SCHEME

Faculty Senate passed a spring 2020 grading scheme on March 25, 2020:

For Spring 2020, any grade of F will be converted to NC and not factored into the students GPA. Students may submit requests to change their grading scheme to Pass-No Credit option from the last day of classes, May 1, 2020 through May 15, 2020. Requests for change of grading scheme may only be made by the student. A new form will be created for this purpose, and will be made available by the start of the advising period. Pass-No Credit courses earn credits when the grade of P is assigned, but these credits are not qualitatively weighted and hence do not affect a students academic average. Requests for changes of grading scheme will be approved by the deans office of the students home college, regardless of which college offers the course in question.

Students may present a grade of P in a prerequisite course taken in Spring 2020 to satisfy the enrollment requirement for a postprerequisite course that normally requires a specific minimum letter grade in the prerequisite with departmental approval.

Where a programs professional accreditation requires students to be evaluated with a letter grade, no requests for P/NC grading schemes will be granted.

A course with a Pass/No Credit election cannot be applied to the Universitys Bachelors to Masters Program.

There are no changes to the current transfer credit policy, and letter grades are required for transfer consideration.

Changes of grading scheme are final.

<table>
<thead>
<tr>
<th>Letter Grades Are Factored Into Your GPA</th>
<th>Grade Points</th>
<th>Earned Credits*</th>
<th>P/NC Grades Are Not Factored Into Your GPA</th>
<th>Grade Points</th>
<th>Earned Credits</th>
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</thead>
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<td>3</td>
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<tr>
<td>A-</td>
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<td>3</td>
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<tr>
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<td>P</td>
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<tr>
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</tr>
<tr>
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<tr>
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<td>does not convert FX</td>
<td>0.00</td>
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</tr>
</tbody>
</table>

*Based on a typical 3-credit course.

Grade Exclusion

A request may be submitted to omit a specific course (grade and credits) from the GPA for matriculated students. Such a request must be presented on an Academic Petition, provide detailed justification for the specific action, and certify that the action has been approved by a majority of the departmental graduate committee. Only one grade exclusion in total, including a grade for a repeated course, will be permitted for each degree sought by the student as recommended by the departmental graduate committee. However, the official transcript will list grades for all undergraduate and graduate courses taken at the University with the notation that the grade and credits are excluded from the GPA. Once a grade exclusion has been processed it may not be reversed. Additionally, grade substitutions are not permitted.
Grades for Projects, Theses/Dissertations and Seminars

Spring 2020 Grading Scheme
- Students may NOT elect Pass/NC for thesis and dissertations.

- Students may elect Pass/NC for projects and seminars graded S or U.

  • Projects (Enrollment Restricted to Matriculated Graduate Students):
    - Only one of three grade designations will be allowed for projects:
      - S for projects completed at a satisfactory level
      - U for unsatisfactory completion of a project (no credit toward degree requirements)
      - INC Incomplete
  
  • Theses/Dissertations (Enrollment Restricted to Matriculated Graduate Students):
    - PR will be given for thesis/dissertation research if the student has made satisfactory progress during the semester.
    - NC will be given if the student has made no progress during the semester on thesis/dissertation research.
    - U Unsatisfactory (no credit toward degree requirements)

After successful defense of the thesis/dissertation, a grade of "S" (Satisfactory) will be given for all semesters of the thesis/dissertation research. Only the Registrar's Office can issue this grade.

  • Seminars
    - S - Satisfactory
    - U - Unsatisfactory (no credit toward degree requirements)
    - INC - Incomplete

Under no circumstances will letter grades (A, B+, etc.) be allowed for projects, theses/dissertations, or seminars.

Incompletes

If, because of unusual circumstances, a student is unable to meet all the requirements of the course by the end of a semester, the grade of Incomplete (INC) may be given.

Responsibility for making arrangements with an instructor to complete all outstanding coursework rests entirely with the student, who must complete all outstanding coursework by the date listed on the Graduate Academic Calendar (https://www.uml.edu/Registrar/Calendars/default.aspx).

Under no circumstances will a student be allowed to graduate with incomplete(s) on his or her transcript.

Prior to completion of the missing work, the incomplete will not be computed into the grade point average (GPA). If the student completes the missing work within the specified period, the instructor must evaluate the work and return a grade of "S" and appropriate credit. If the student does not complete the missing work by the specified date and no grade change form is submitted by the instructor, the student's grade will automatically change to a grade of "F" and be computed into the GPA.

Course Listing on the Graduate Transcript

All graduate courses for which a student registers (including repeated courses) are listed on the transcript and are used to calculate the student's grade point average whether or not they are taken to fulfill degree requirements. In addition, undergraduate courses which a student takes to fulfill prerequisite requirements before or during matriculation in a graduate program, or courses taken for personal enrichment, will also be listed on the transcript.

Audited Courses

A graduate student may, upon approval of the advisor and the instructor, register for a course on an audit basis, but must pay the full amount of tuition and fees. An audit student is not required to take tests or the final examination. A change in registration from audit to credit or credit to audit must be done during the add/drop period. Under no circumstances can a course taken for audit be given credit at a later date.

Graduate Clearance

To apply for Graduation, graduate students must fill out a Declaration of Intent to Graduate (DIG) form and have it approved by their Graduate Coordinator and (if applicable), Thesis/Dissertation Advisor.

The Registrar's Office will verify number of credits, final grades, GPA requirements an if applicable submission of
thesis/dissertation prior to awarding the degree.

Additional Requirements for Students Completing a Thesis or Dissertation

All students who are completing a thesis or dissertation must also submit one clean copy (NOT the original) of the signature page for the thesis or dissertation. The signature page must be signed and dated by the thesis/dissertation advisor and all committee members. Copies of the Thesis or Dissertation must be submitted to the Library for binding and microfilming by the deadline date. In addition, doctoral students are required to complete the "Survey of Earned Doctorates" online, you will be emailed the information when you submit your DIG form.

Graduate Grade Appeal Process for Students

The instructor of the class is the primary authority with respect to a student's proficiency and final grade in that course. A student who believes that his or her final grade reflects an erroneous, capricious, arbitrary, or prejudiced academic evaluation may appeal the grade. The academic judgment used in determining the merits of the grade to be awarded shall not be reviewable. This process does not apply to cases of academic dishonesty, which are adjudicated through the "academic dishonesty process."

1. The student may file an appeal of his or her complaint, in writing, to the instructor within 30 days after a final grade is posted to the student's record. The instructor must respond within 14 days of receiving the appeal.

2. If the student remains dissatisfied by the decision of the instructor under step (1), he or she may, within 14 days after formal receipt of the instructor's final decision, appeal, in writing, to the chairperson of the program (or the Dean of the College if the instructor is the chairperson) in which the course or other exercise or activity is offered. The chairperson must respond within 14 days of receiving the appeal. The decision may be: (a) that the appeal be dismissed; (b) if the student provides demonstrable evidence of an erroneous, arbitrary, capricious, or prejudiced academic evaluation, then the chairperson will recommend appropriate remedies that a grade be changed or the student be allowed an opportunity to retake an examination or other exercise; or (c) that another appropriate remedy be administered.

3. If no satisfactory resolution is reached in step (2) then the student or the instructor may appeal, in writing, to the Dean of the College within 14 days after formal receipt of the chairperson's final decision.

4. The Dean, after discussion with the appropriate parties, may resolve the grievance by agreement or render a decision within 21 days of receipt of the written appeal. The decision may be: (a) that the appeal be dismissed; (b) if the student provides demonstrable evidence of an erroneous, arbitrary, capricious, or prejudiced academic evaluation, then the Dean will recommend appropriate remedies that a grade be changed or the student be allowed an opportunity to retake an examination or other exercise; or (c) that another appropriate remedy be administered.

5. The decision of the Dean is final and not subject to additional appeal by either student or instructor. The appeals process ends at this step.

6. The Department chair or his/her designee is responsible for keeping a record of the appeal on file in accordance with University Records Retention Policy.

Right of Access to Student Records

Access
University Student Records
Release of Student Records
Release Exclusions
Additional Information

Access

The Family Educational Rights and Privacy Act of 1974 (FERPA) grants any student currently in attendance, or any former student, the right of access to inspect or review his or her educational files, records, or data. Students who wish to inspect their records must file a Right of Access form with the office or department in which the desired record is kept. Right of Access forms are available in the Office of Student Services or through student self service. Wherever practicable, within ten days of receipt of the Right of Access form, the office or department will notify the student as to the date, time, and location when the desired record will be available for inspection. If a student believes that circumstances effectively prevent inspecting and reviewing the records at the designated
date, time and location, he or she may request alternative inspection arrangements or copies of the records instead, subject to a fee for copies. The Dean of Students or the Deans designee will consider the request.

**University Student Records**

The University maintains the following general records on students:

- **Admission File** - Admissions Office
  (https://www.uml.edu/Grad/default.aspx) - www.uml.edu/grad
  (https://www.uml.edu/Grad/default.aspx)

- **Permanent Academic Records** - Registrar’s Office
  (https://www.uml.edu/Registrar/default.aspx) - www.uml.edu/registrar
  (https://www.uml.edu/Registrar/default.aspx)

- **Financial Aid Records** - Financial Aid Office
  (https://www.uml.edu/thesolutioncenter/financial-aid/default.aspx)

- **Health Records** - Health Services Office - www.uml.edu/student-services/health/

- **Account and Payment Records** - Student Financial Services Office
  (https://www.uml.edu/thesolutioncenter/bill/tuition-fees/default.aspx) - www.uml.edu/Tuition-fees/
  (https://www.uml.edu/thesolutioncenter/bill/tuition-fees/default.aspx)

- **Campus Conduct Records** - Dean of Students Office - www.uml.edu/student-services/Dean/

The file of each student must contain a record of all non-University affiliated individuals or organizations requesting access to information in the file, plus statements that specify the legitimate educational purposes for which access was requested.

Except as otherwise permitted under FERPA, information or records concerning individual students may not be released to any individual or agency without the students written permission. Any request for such information received without such written permission will not be honored and will be returned with a request for a written release from the student.

**Release of Student Records**

FERPA allows release of a students education records without the students written permission under certain circumstances, including the following:

1. To personnel of the University, i.e., faculty, administrators, or staff for legitimate educational purposes only.
2. To officials of other institutions in which the student seeks admission or intends to enroll, provided that the student is notified of the release.
3. To federal or state officials in connection with the audit and evaluation of programs funded by federal or state governments, with the enforcement of legal requirements that relate to such programs, or in connection with the students application for or receipt of financial aid.
4. To accrediting organizations in order to carry out their accrediting functions.
5. To parents who claim the student as a dependent on their IRS statement.
6. In connection with an emergency, to appropriate persons if revealing such information is necessary to protect the health or safety of the student or other persons.
7. In response pursuant to a validly issued subpoena, subject to advance notification of the student unless such notice is prohibited by court order.
8. As otherwise permitted under or consistent with FERPA.

The following data are considered informational in nature and may be released without the permission of the student, at the discretion of the University: students name, major, acknowledgement of a student’s participation in officially recognized activities and sports, weight and height of members of athletic teams, date(s) of attendance; degrees, certificates, awards received; the most recent previous educational agency or institution attended by the student and appointment as a Resident Assistant or Community Development Assistant. For graduate students who are teaching credit courses, work department, office address, and employments category are also defined as directory information.

**Release Exclusions**

Any student who wishes to have some or all of his or her directory information excluded from release by the University without prior permission must complete the appropriate selections available thru student self service (https://www.uml.edu/Enrollment/SiS/default.aspx). (www.uml.edu/enrollment/isis/ (https://www.uml.edu/Enrollment/SiS/default.aspx))

**Additional Information**

Any student who believes that his or her records are inaccurate
or misleading may request a hearing with the Dean of Students to discuss the contents of such records and whether or not they need to be changed. Additional information on procedures or policies relating to University compliance with the Family Rights and Privacy Act can be obtained from the Office of Student Services or the Registrar’s Office.

**Statute of Limitations (Time Limit for Degree Completion)**

A graduate degree, at either the master’s or doctoral level, implies a significant mastery of a discipline within a specified time period. A well designed curriculum is not a mere collection of classes that add up to a set number of credits. It is, rather, a coherent selection of courses with an overall educational achievement that is greater than the sum of its parts. However, this coherence is lost if the program is completed over a long time span.

Master’s degree requirements must be completed within a **five-year** period from the semester of admission. For those master’s programs requiring 45 or more credits, the time limit is six years.

The doctoral degree must be completed within an **eight-year** period beginning with the semester of admission as fully matriculated or matriculated with conditions.

A student may obtain an extension of one year by filing an [Academic Petition](https://www.uml.edu/docs/petition_grad_tcm18-87176.pdf). Individual departments are free to impose more stringent requirements. Only courses completed elsewhere within five years prior to the date of admission to a graduate degree program at the University of Massachusetts Lowell may be considered by the faculty of the department for transfer in accordance with the following regulations.

- A maximum total of 12 graduate credits earned with a grade of B or better taken at another accredited institution may be transferred to a master’s degree program (see individual programs for further restrictions, if any). A maximum of 24 credits with a grade of B or better may be transferred to a doctoral program.
- Grades of C or better for courses taken at UMass Lowell when the student held non-degree status may also be transferred (by Academic Petition) into a degree program.

**Course Listing on the Graduate Transcript**

All graduate courses for which a student registers (including repeated courses) are listed on the transcript and are used to calculate the student’s grade point average whether or not they are taken to fulfill degree requirements. In addition, undergraduate courses which a student takes to fulfill prerequisite requirements before or during matriculation in a graduate program, or courses taken for personal enrichment, will also be listed on the transcript.

**Transcripts**

In order to obtain a transcript, a student may print an unofficial transcript or order an official copy through self-service in [SIS](https://www.uml.edu/Enrollment/SiS/default.aspx). If SIS is not available, a transcript may be ordered by filling out a [Transcript Request Form](https://www.uml.edu/docs/transcriptrequest_tcm18-3516.pdf) and submitting it to the University of Massachusetts Lowell Registrar’s Office at 883 Broadway Street, Lowell, MA 01854.
cumulative grade point average based on all graduate courses taken at the University (see Academic Grades) remain in effect.

3. An official transcript and description of the course(s) must be submitted with the written request.

4. The courses presented must be from an accredited U.S. or Canadian institution authorized to grant graduate degrees.

5. The courses presented for a master's degree must not have been used in earning another master's degree.

6. The courses presented must be appropriate to the degree program for which the applicant is applying.

7. The courses presented must be graduate level.

8. Transfer credit may not be granted for research seminars, clinical courses, practica, internships, or special projects.

9. Transfer credit from another U.S. or Canadian institution must not exceed equivalent course credit (typically 3) at UMass Lowell, and will be based on UMass Lowell’s standard of 37.5 semester contact hours being equal to 3 credits. One and two course credit transfers will also be considered providing they are proportional to the 37.5 semester contact hour standard.

10. Students who wish to transfer credit must file (within the first semester of matriculation) the Academic Petition form available from the Registrars Office.

11. With the approval of the department, a maximum of 6 credits of 4000 level courses taken at the University of Massachusetts Lowell with grades of C or better, not used for the baccalaureate degree, may be considered for transfer and counted toward the graduate degree.

University Appeals Process Regarding Academic (Non-Grade Appeal and Non-Misconduct) Issues

The underlying purpose of the University’s appeals procedure is to guarantee due process and to protect the rights of both students and faculty in graduate programs.

The following procedure provides a mechanism for formal adjudication of any academic issues (non-misconduct and not related to grade appeal) which may arise. (For information regarding the process for grade appeals, see the Graduate Grade Appeal Process.)

Responsibility for initiation of each of the steps belongs to the appellant.

Step 1. If an informal discussion between the student and the instructor or individual with whom the student has a conflict does not resolve the issue, the resolution of an academic appeal of a student should begin within the department. The first step in the resolution of a problem or disagreement should be a discussion between the instructor, the student, and his/her faculty advisor or the coordinator of the program.

Step 2. If the matter cannot be resolved after such a discussion, a formal appeal, in writing and containing the pertinent facts, should be presented by the student to the chairperson/head of the department within two months of the occurrence that precipitated the appeal. Any appeal made outside this time period shall not be considered by any University body. The chairperson of the department will appoint committee composed of faculty members in the department. Within seven working days, this committee shall convene and discuss the appeal with the student and the instructor, coordinator, or individual with whom the student has a conflict. The student may be accompanied by his or her advisor or a faculty representative during the discussion of the appeal. The committee, by a majority vote after deliberations with only members of the committee present, shall render a decision within five working days and notify the appropriate parties in writing with the rationale for the decision included in the notification.

Step 3. If the decision of the departmental committee is not satisfactory to all parties, the appeal may be forwarded to the College Dean within two weeks of the decision of the departmental committee. The Dean will appoint a college committee composed of area coordinators of all graduate programs within the college or a suitable committee of faculty. The committee will be chaired by the college dean, or his/her designee. Within seven working days, the committee shall convene and discuss the appeal with the student. At this level the student may request to be present at the committee meetings, that discussions or proceedings be tape recorded, and that a transcript be prepared from the tape. The request for a recording must be made at the time the appeal is made to the college committee. The college committee shall render a decision by majority vote after deliberations with only members of the college committee present within five working days and notify the appropriate parties in writing with the rationale for the decision included in the notification.
Step 4. If the decision of the college committee is not satisfactory to all parties, the appeal may be forwarded to the Graduate Policy and Affairs Committee (GPAC) within ten working days after the decision of the college committee. The committee shall convene within 10 working days after the GPAC chairperson has received a written request for a hearing from the appellant, and discuss the appeal with the student and faculty advisor or representative. A request for recording and preparing a transcript of the discussions with the student present may be made at the time of appeal. The committee shall render a written decision within five working days and notify the appropriate parties. The decision of the Graduate Policy and Affairs Committee shall be final, and the information accumulated during the appeal procedure shall be forwarded to the Provost to be kept on file. If any decision involving the awarding of a degree is made and the official deadline for graduation exercises has passed during the appeal, the degree date will reflect the initiation of the appeal.

The above time periods define working days as days when classes are in session for the fall and spring semesters. Efforts will be made to honor the same time periods during intercession and June - August although some flexibility must be accepted by the appellant because of potential difficulties in assembling committee members during these periods.

The GPAC chairperson may modify the Step 4 hearing time framework at his/her discretion to coincide with regularly scheduled GPAC meetings. In either of the above cases, the appellant must be notified in writing by the hearing officer (along with an explanation) of any modification of the hearing time schedule. The chairperson may recommend that final voting/discussion of Step 4 cases be done in Executive Session with only committee members present.

Non-Academic Misconduct

Improper conduct or behavior of graduate students is subject to the University of Massachusetts Lowell Student Conduct Code and Judicial Process (https://www.uml.edu/student-services/Student-Conduct/default.aspx). Copies of this document may be obtained from the Dean of Students Office.

Withdrawal Policies

Withdrawal from a Course

Withdrawal from the University

Withdrawal from a Course

A student finding it necessary to withdraw from a course must do so within the time specified in the graduate academic calendar (https://www.uml.edu/Registrar/Calendars/default.aspx) (www.uml.edu/Registrar/Calendars/default.aspx)). The student's permanent record will indicate a grade of W for the course(s) from which he or she has withdrawn unless the withdrawal has taken place within the first 10 class days of the semester during which time no record will be kept. (See Dropping Classes and Refund Policy in this Catalog for information on dropping a course.)

Withdrawal from the University

A student who wishes to withdraw from the University must submit his/her request in writing to the Registrar’s Office. This procedure ensures that the student’s academic and financial obligations are cleared before leaving the University. If a student officially withdraws from the University by the withdrawal date indicated in the graduate academic calendar, the permanent record will indicate a grade of W. If the student fails to follow the official withdrawal procedure and does not withdraw in good standing, the student will not be permitted readmission to a graduate program at the University except under extenuating circumstances.

Withdrawal from courses may have implications for degree progress, veterans benefits, health insurance, financial aid, and immigration status. Students are advised to consult their academic advisor as well as officials in appropriate offices prior to withdrawing from class. Instructors are required to submit a last known date of attendance or academic activity for students who receive a grade of F for other non-passing grades. Students who cease attending without officially withdrawing may affect their Financial Aid.

All previous application materials will remain on file for a two year period. At any time during this period, a student who has
officially withdrawn may request readmission by completing and submitting only the cover page of the graduate application and paying the application fee. After two years, a student must file a new, complete application and submit the appropriate fee to the Graduate Admissions Office (https://www.uml.edu/Grad/default.aspx) in order to be readmitted.

Veteran and Military Policies

- Veterans Benefits and Transition Policy
- Military Connected Student Policy

Veterans Benefits and Transition Policy

In compliance with the Veterans Benefits and Transition Act of 2018, section 3679 of title 38, United States Code, the University of Massachusetts Lowell

- will permit any covered individual to attend or participate in the course of education during the period beginning on the date of which the individual provides to the university a certificate of eligibility for entitlement to educational assistance under Chapter 31 or 33 (a certificate of eligibility can also include a Statement of Benefits obtained from the Department of Veterans Affairs (VA) website eBenefits, or a VAF 28-1905 form for Chapter 31 authorization purposes) and ending on the earlier of the following dates: The date on which payment from VA is made to the university, 90 days after the date the university certified tuition and fees following the receipt of the certificate of eligibility.
- will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds, on any covered individual because of the individuals inability to meet his or her financial obligations to the institution, when the delay is due to the delayed disbursement funding from VA under Chapter 31 or 33.

The statute allows the University of Massachusetts Lowell require covered individuals to take the following actions:

- Submit a certificate of eligibility for entitlement to educational assistance no later than the first day of a course of education.
- Submit a written request to use entitlement. Students must complete the online Veterans Services Certification Request form (https://www.uml.edu/student-services/Veterans/Forms.aspx) through the universitys Office of Veterans Services.
- Provide additional information necessary to the proper certification of enrollment by the university (for example, official transcripts from all previously attended institutions.)
- Pay for the amount that is the difference between the amount of the students financial obligation and the amount of the VA education benefit disbursement. The university may assess a financial hold or late fee if timely payment is not made in the following cases: The covered individual will receive less than 100% tuition reimbursement based on the certificate of eligibility or written request of entitlement provided by the covered individual, or The covered individual incurs charges for housing, meal plans, or other fees or charges that are not eligible for payment by the Veterans Administration.

Note: A covered individual is any individual who is entitled to educational assistance under Chapter 31, Vocational Rehabilitation and Employment, or Chapter 33, Post 9/11 GI Bill.

Military-connected Student Policy

Accommodations for Temporary Short-Term Military Assignments

Students serving in the United States Air Force, Army, Marine Corps, Navy, or Coast Guard, including Active-Duty, Reservists, and National Guard members shall receive academic accommodations for short-term military assignments including Federal or Commonwealth Activation, Unit Training Assemblies (UTAs or "Drill Weekends"), Advanced Individual Training (AIT), Professional Military Education (PME) courses, Temporary Duty Travel (TDY), Temporary Additional Duty (TAD), Temporary Duty Under Instruction (TDI), or other military short-term assignments. Activated students shall provide a copy of military orders, or an advance copy of informal notice, to the Office of Veterans Services as soon as
they are provided by the military unit. The Office of Veterans Services will notify the appropriate Deans office who will then inform the students professors and instructors. The Office of Veterans Services will assist with administrative processes to support the student (i.e., connect with financial aid, registrars office, and other resources as required). In such cases, students have the following options:

- The student may request to drop his or her course(s) and may request a back-out and removal of charges if the request to drop the course(s) is granted when submitting documentation up to and including the last day of classes for the semester.
- If more than half of the semester has been completed and at least one graded assignment has been submitted: the student may request an Incomplete (INC) or, as determined by the instructor, assign an appropriate final grade or credit to a student who has satisfactorily completed a substantial amount of coursework and demonstrated sufficient mastery of course material.

Instructors shall grant reasonable accommodations allowing the student additional time to submit coursework including assignments, quizzes, and tests, and provide mutually agreed upon alternate quiz and test dates. Students shall not be penalized for their inability to attend/participate in class during their temporary military leave.

Military Leave of Absence for Long-Term Military Assignments

Activated students for long-term assignments and military members or family members experiencing a Permanent Change of Station (PCS) shall provide a copy of military orders, or an advance copy of informal notice, to the Office of Veterans Services as soon as they are provided by the military unit. The Office of Veterans Services will notify the appropriate Deans office who will then inform the students professors and instructors. The Office of Veterans Services will assist with administrative processes to support the student (i.e., connect with financial aid, registrars office, etc.). In such cases, students have the following options:

- The student may request to drop his or her course(s) and may request a potential back-out and removal of charges if the request to drop the course(s) is granted when submitting documentation up to and including the last day of classes for the semester.
- If more than half of the semester has been completed and at least one graded assignment has been submitted: the student may request an Incomplete (INC) or, as determined by the instructor, assign an appropriate final grade or credit to a student who has satisfactorily completed a substantial amount of coursework and demonstrated sufficient mastery of course material.

Students who withdraw due to military service obligations may return to the University and request re-enrollment in subsequent terms without penalty if they meet academic requirements for their matriculated program. Military-connected students shall not be academically penalized for their military service or that of their family members.

* Note: Any course work already completed in the term withdrawn from will be forfeited. Students who elect this option will have to repeat courses they withdraw from to get credit for those courses. Students who elect to take an incomplete or receive the grade earned will not receive a refund for tuition and fees.

Students taking Online Courses

Unresolved Complaints

A. OUT-OF-STATE STUDENTS

Out-of-state students residing in NC-SARA (National Council for State Authorization Reciprocity Agreement) states which include all states except California whose complaints are not resolved through the UMass Lowell Institutional Complaint Process can submit complaints to the Massachusetts Department of Higher Education through the SARA Student Complaint Form (https://www.mass.edu/foradmin/sara/complaints.asp).

For more information, contact:

Alexander Nally, Assistant General Counsel
Massachusetts Department of Higher Education
One Ashburton Place, Room 1401
Boston, MA 02108
617-994-6910
SARAINquiries@dhe.mass.edu
mailto:SARAINquiries@dhe.mass.edu
www.mass.edu/sara
(https://www.mass.edu/foradmin/sara/home.asp)

B. MASSACHUSETTS RESIDENTS AND ONLINE STUDENTS IN NON-SARA STATES AND TERRITORIES
After you have exhausted the complaint procedures made available by UMass Lowell, located above, if you have a complaint or concern that has not been resolved by UMass Lowell, you may file a general complaint with the Massachusetts Department of Higher Education (DHE) by using the general complaint form (https://www.mass.edu/forstufam/complaints/complaints.asp). The DHE general complaint form should be used by students who are located in:

- Massachusetts
- Non-SARA Member States or Territories (e.g., California, Guam, etc.)

**Online students with non-academic complaints:** If you have a non-academic complaint that you would like to bring to our attention, please use the non-academic complaint form (https://uml.tfaforms.net/218611) to provide us with a brief description of the issue.
Zuckerberg College of Health Sciences

The graduate programs of the Zuckerberg College of Health Sciences at UMass Lowell prepare health care providers with specialized knowledge and skills for the roles of practitioner, leader and researcher.

View the faculty in the College of Health Sciences (https://www.uml.edu/Health-Sciences/faculty/default.aspx).

Graduate Programs Offered

Certificates:
- Clinical Pathology
- Health Informatics
- Health Management
- Pharmaceutical Science
- Public Health Studies

Master of Public Health
- Public Health

Master of Science (MS) - degree awarded in the following fields:
- Clinical Laboratory Sciences
- Health Information Management
  **Concentrations:** Health Informatics, Health Management
- Nursing

Doctor of Physical Therapy (DPT)

Doctor of Philosophy (Ph.D.) - degree awarded in the following field:
- Nursing, Health Promotion
- Pharmaceutical Science

Doctorate in Nursing Practice (DNP) Program

Doctor of Science (SC.D.) - degree awarded in the following field:
- Public Health
  **Options:** Epidemiology, Occupational and Environmental Hygiene

Professional Science Master's in Pharmaceutical Sciences

Applications have been suspended for this program.

Admissions and Degree Requirements

Applicants to the UMass Lowell Professional Science Master’s (PSM) program in Pharmaceutical Sciences must possess a BS degree or be in their last semester of a baccalaureate program. Up to 12 credits of appropriate graduate coursework with a grade of B or better can be transferred into the program if approved by the Graduate Coordinator of the Pharmaceutical Sciences programs.

The Professional Science Master’s in Pharmaceutical Sciences program will consist of 36 credits of coursework to be completed either full-time or part-time. Full-time students should complete the program within two years and part-time students should complete the program within five years. The Program Coordinator and advisors in the program will advise PSM students about course selections.

Upon admission or through the successful completion of prerequisite courses, students will be expected to have successfully demonstrated undergraduate level knowledge in calculus, general and organic chemistry, biochemistry and biology or anatomy and physiology.

Curriculum Plan

Pharmaceutical Science Core Courses

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHRM.6100</td>
<td>Principles of Pharmaceutical Sciences</td>
<td>3 credits</td>
</tr>
<tr>
<td>PHRM.6120</td>
<td>Principles of Pharmaceutical Sciences Lab</td>
<td>1 credit</td>
</tr>
<tr>
<td>CHEM.5500</td>
<td>Biochemistry 1</td>
<td>3 credits</td>
</tr>
<tr>
<td>CHEM.5620 or CHEM.6310</td>
<td>Biopharmaceutical Development OR Principles of Medicinal Chemistry I</td>
<td>3 credits</td>
</tr>
<tr>
<td>PHRM.6600</td>
<td>Pharmacokinetics and Drug Metabolism</td>
<td>3 credits</td>
</tr>
<tr>
<td>PHRM.6400</td>
<td>Pharmaceutical Analysis</td>
<td>3 credits</td>
</tr>
<tr>
<td>PHRM.6420</td>
<td>Pharmaceutical Analysis Lab</td>
<td>1</td>
</tr>
</tbody>
</table>
### PLUS Courses

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<tr>
<th>Course Number</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSMA.5550</td>
<td>Leadership for Scientists</td>
<td>3 credits</td>
</tr>
<tr>
<td>PSMA.5450</td>
<td>Professional and Scientific Communication</td>
<td>3 credits</td>
</tr>
<tr>
<td>XXXX.XXXX</td>
<td>PLUS Elective</td>
<td>3 credits</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>9 credits</td>
</tr>
</tbody>
</table>

**Pharmaceutical Sciences elective options include (but not limited to):** BIOL.5760, BIOL.5820, BIOL.5930, CHEM.5140, CHEN.5260, CHEN.5450, CHEN.5480, MLSC.5600

**PLUS elective options include (but not limited to):** MKTG.5010, MGMT.5010, ENTR.6500, ENTR.6450, MKTG.6300, PSMA.5350, PSMA.5650, MGMT.5750, FINA.6400, MECH.5760, MLSC.7700

**Professional Internship Requirement**

PSMA.5000 Professional Development (0 credit), PSMA.5100 Internship (0 credit), &PSMA.5010 Reflective Seminar (1 credit) are required for students to complete the Professional Internship requirement of the PSM. A Professional Internship must be a minimum of 350 hours and 3-6 months in length. The internship is designed to provide students with an opportunity to obtain real-world experience in business, government agencies, non-profit organizations or research laboratories. Internships or research project experiences will typically take place in pharmaceutical, biotechnological or medical device companies or institutions. Consideration will be given for students that have previous or current professional employment in the pharmaceutical sciences, however, in these cases, a new project experience will be required that adds to the students current set of skills.
Department of Biomedical & Nutritional Sciences

The UMass Lowell Department of Biomedical and Nutritional Sciences offers the following graduate programs:

- Master of Science in Clinical Laboratory Sciences
- Master of Science in Pharmaceutical Science
  Option: Professional Science Master’s in Pharmaceutical Science
- Graduate Certificates: Clinical Pathology, Nutritional Sciences, Pharmaceutical Science, Public Health Laboratory Sciences
- Bachelor’s-Master’s Program
- Doctoral Program: Pharmaceutical Science

Program Philosophy

The Master of Science degree program in Biomedical Sciences provides medical technologists and individuals with medical, biological or biochemical backgrounds with specialized knowledge in the clinical sciences. The mission of the program is to allow individuals to expand their understanding of the clinical sciences and be able to apply state-of-the-art research techniques to the advancement of diagnostic technology. Knowledge of such skills will permit upward mobility into entry level supervisor positions and dissemination of clinical information in educational settings. Students may choose from concentrations in research, clinical administration, health informatics, nutritional sciences and public health laboratory sciences.

Faculty in the Department of Biomedical and Nutritional Sciences have extensive research track records. Many are recognized nationally and internationally as experts in their fields and participate in professional organizations, holding office at local and national levels. Department faculty are successful in obtaining research funding and are very productive in publishing their research findings in peer-reviewed scientific journals.

Program Overview

The Master of Science program is typically completed in two years, however, students may choose to progress through the program on a part-time basis. The Bachelor’s-Masters program in one additional year beyond the B.S. degree. The program integrates management components from the Health Management and Policy Program, and environmental health components from the department of Work and Environment. Students take a required core of five courses and then select five program concentration courses from among the areas of research, nutritional sciences, clinical administration, health informatics and public health laboratory sciences. Students may also select a Professional Science Masters combining business courses and business internship. Online graduate certificate programs allow gradual transition from a work setting into this academic program. Students may continue on into programs such as Ph.D. in Biomedical Engineering and Biotechnology (participant in UMass system-wide graduate degree program) or the Ph.D. in Chemistry, Biochemistry Option (in collaboration with Chemistry Department).

Admission Requirements

1. A baccalaureate degree from an accredited university or college with a recommended GPA of 3.0 or better.
2. Sound preparation in the biological or clinical sciences with a chemistry background for the research concentration.
3. A minimum official score on for the Graduate Record Examination Aptitude Test (GRE) of 151 verbal and 157 quantitative. GRE’s are required unless the student has completed a previous American Masters degree. For students who graduated from a university in a country where English is not the official language. TOEFL scores should be at least 550 (paper-based), 213 (computer-based), or 79 (internet-based). The GRE is not required for the certificate programs.
4. For the Clinical Administration concentration: clinical certification is required.
5. For the Clinical Research concentration, sound preparation in the biological or clinical sciences is required, to include successful completion of a course in biochemistry or equivalent.
6. Three letters of recommendation pertaining to academic ability and professional performance unless the applicant is already a student in the undergraduate program and applying into the Bachelor’s-Master’s Program.
7. Students will also be asked to submit a personal statement and a resume.

Program Requirements

The student must possess basic statistical and computer skills prior to admission, or may complete without credit within the graduate program of study, an introductory course in computers and a course in statistics prior to the third semester.
Skill level can be determined through discussion with the Graduate Coordinator.

**Master of Science in Clinical Laboratory Sciences**

**Master of Science in Clinical Laboratory Sciences**

**Master's Certificate Options**
- Pharmaceutical Sciences
- Public Health Studies
- Health Informatics
- Pathology

**Master of Science in Clinical Laboratory Sciences**

The UMass Lowell Department of Biomedical and Nutritional Sciences offers a Master of Science in Clinical Laboratory Sciences.

After the requirements, see the **STEM Electives**.

**Degree Requirements**

The Master of Science degree program in Clinical Laboratory Sciences requires the successful completion of a minimum of 30 semester hours of graduate level courses. These include 23 credit hours of core courses and 7 approved elective credits. Students may petition to transfer up to 12 graduate course credits of related content from other programs, and this requires approval by the department graduate coordinator and or department graduate faculty committee.

**Part-Time Study**

Students are allowed to matriculate on a part-time basis (taking one or two courses) and most professionally employed students that pursue the M.S. degree in Clinical Laboratory Sciences do so. Most classes meet once per week and are scheduled in the evening or online for student convenience.

**Bachelor's-Master's Program**

Undergraduate students in this program move through the master's program at an accelerated rate by taking two 500-level courses during their senior year and count those credits toward both their undergraduate and graduate degrees. Student apply during their Junior year.

**Program of Studies**

**Core Curriculum**

The core curriculum includes the following courses (23 credits) and must be taken by each program student:

- HSCI.5500 [Clinical Pathophysiology (3cr)]
- MLSC.5500 [Foundations of Biomedical Research (3cr)]
- MLSC.5750 [Emerging Topics in Clinical Chemistry (3cr)]
- MLSC.6000 [Biomarker Discovery & Applications (3cr)]
- MLSC.6001 [Biomarker Discovery & Applications Lab (1cr)]
- MLSC.6100 [Clinical Toxicology (3cr)]
- MLSC.6101 [Clinical Toxicology Lab (1cr)]
- MLSC.6130 [Infectious Diseases (3cr)]
- MLSC.7330 [Graduate Project (3cr)]

**STEM Electives**

At least one approved elective must be from the list below. The other electives may be from this list, or may be another graduate course from the Department of Biomedical and Nutritional Sciences. Courses not listed below may be used as electives with prior approval of the graduate coordinator. Courses offered fully online noted with an asterisk (*).

**BNS Electives:**
- MLSC.5120 [Medical Bacteriology (3cr)]
- MLSC.5310 [Clinical Immunohematology (3cr)]
- MLSC.6130 [Medical Mycology and Parasitology (3cr)]
- NUTR.5720 [Nutrigenetics (3cr)]
- NUTR.6040 [Nutrition Epidemiology (3cr)]

**Public Health Electives:**
- PUBH.5061
Research experience can also be obtained at the university or other research centers. Given the number of full-time faculty in the department, the university will assist the Department of Biomedical and Nutritional Sciences and the students with arranging corporate internships. To be eligible for the Professional Internship, students will be required to have 1) completed a minimum of 12.0 credits of STEM courses, 2) completed a minimum of 6.0 credits of PLUS courses, 3) attained an overall minimum GPA of 3.0 and 4) department permission.

All Professional Internships require department faculty supervision. Students should register for MLSC.7700 (https://www.uml.edu/catalog/courses/MLSC/7700) during the final semester of internship participation.

**Master's program Certificate option:**

Students can earn a certificate in Public Health Studies, Health Informatics, Pharmaceutical Sciences or Clinical Pathology while earning a Master’s degree in Clinical Laboratory Sciences by opting for elective courses needed for the certificate**. The following are the elective courses that meet certificate and Clinical Laboratory Sciences Master’s degree requirements:

**Pharmaceutical Sciences Certificate:**

**Required Courses:**

- PHRM.6100 (https://www.uml.edu/catalog/courses/PHRM/6100) Principles of Pharmaceutical Sciences
- PHRM.6400 (https://www.uml.edu/catalog/courses/PHRM/6400) Pharmaceutical Analysis
- PHRM.6410 (https://www.uml.edu/catalog/courses/PHRM/6410) Drug Delivery
- PHRM.6600 (https://www.uml.edu/catalog/courses/PHRM/6600) Pharmacokinetics & Drug Metabolism

**Public Health Studies Certificate**

**Required Course:**

- PUBH.5750 (https://www.uml.edu/catalog/courses/PUBH/5750) Epidemiology & Biostatistics

**Elective Courses:**

- PUBH.5061 (https://www.uml.edu/catalog/courses/PUBH/5061) Environmental Health
- PUBH.5070 (https://www.uml.edu/catalog/courses/PUBH/5070) Leadership & Management in Public Health
- PUBH.5770
Health Informatics Certificate

**Required Courses:**
- PUBH.5310 (Health Informatics)
- PUBH.6070 (Healthcare Information Systems)

**Elective Courses:**
- PUBH.6350 (Healthcare Project Management)
- PUBH.6390 (Electronic Health Systems)

Certificate in Pathology

**Required Course:**
- HSCI.5500 (Clinical Pathophysiology* (Fall, Spring & Summer))

**Electives:**
- MLSC.5120 (Medical Bacteriology)
- MLSC.5310 (Clinical Immunohematology)
- MLSC.5500 (Foundations in Biomedical)
- MLSC.5750 (Emerging Topics in Clinical Chemistry)
- MLSC.6000 (Biomarker Discovery & Applications)
- MLSC.6100 (Clinical Toxicology)
- MLSC.6130 (Infectious Disease*)
- MLSC.6150 (Medical Mycology & Parasitology)
- NUTR.5720 (Nutrigenetics)
- PUBH.5140 (Healthcare Management*)
- PUBH.6070 (Healthcare Information Systems*)
- PUBH.6350 (Healthcare Project Management*)

Students may select 3 courses from this list. Only one of the courses may be from the Department of Public Health (PUBH). Other electives may be substituted with prior approval from the Graduate Coordinator.

**To qualify for a Certificate, Students must complete and application with Graduate Admissions (https://sa-webapp-prd.erp.umasscs.net/psc/webapp/EMPLOYEE/SA/c/UM_ADM_MENU_FL.UM_ADM_LOGIN_FL.GBL?institution=UMLOW&CareerGRAD&CenterGRAD&Campaign=DEFAULT&).**

Graduate Certificates in Biomedical & Nutritional Sciences

The UMass Lowell Department of Biomedical and Nutritional Sciences offers the following graduate certificate programs:

- Clinical Pathology
CLINICAL PATHOLOGY

To apply, visit

graduate admissions
(https://www.uml.edu/Grad/Graduate-Applicants/default.aspx)

Contact: Suzanne Moore, D.V.M
(mailto:suzanne_moore@uml.edu), 978-934-6264

Clinical Pathology combines the theoretical and technical knowledge of human anatomy and physiology, clinical chemistry, genetics, immunology, microbiology, hematology, histocompatibility, cellular pathology and other fields as they pertain to the diagnosis, monitoring and prevention of disease.

The Certificate in Clinical Pathology requires 12 credits. There is one required course and 3 electives, to be selected from the approved list. Courses available fully online are noted below with an asterisk (*).

Prerequisites:

- Baccalaureate degree from an accredited institution with a minimum GPA of 3.00
- Completion of undergraduate coursework in junior-level biochemistry receiving a grade of C or better.

Required Courses:

- HSCI.5500
  (https://www.uml.edu/catalog/courses/HSCI/5500)
  Clinical Pathophysiology* (Fall, Spring & Summer)

Electives:

Students may select 3 courses from this list. Only one of the courses may be from the Department of Public Health (PUBH). Other electives may be substituted with prior approval from the Graduate Coordinator.

- MLSC.5120
  (https://www.uml.edu/catalog/courses/MLSC/5120)
  Medical Bacteriology
- MLSC.5310
  (https://www.uml.edu/catalog/courses/MLSC/5310)
  Clinical Immunohematology
- MLSC.5500
  (https://www.uml.edu/catalog/courses/MLSC/5500)
  Foundations in Biomedical Research*
- MLSC.5750
  (https://www.uml.edu/catalog/courses/MLSC/5750)
  Emerging Topics in Clinical Chemistry
- MLSC.6000
  (https://www.uml.edu/catalog/courses/MLSC/6000)
  Biomarker Discovery & Application with Lab
- MLSC.6100
  (https://www.uml.edu/catalog/courses/MLSC/6100)
  Clinical Toxicology
- MLSC.6130
  (https://www.uml.edu/catalog/courses/MLSC/6130)
  Infectious Disease*
- MLSC.6150
  (https://www.uml.edu/catalog/courses/MLSC/6150)
  Medical Mycology and Parasitology
- NUTR.5720
  (https://www.uml.edu/catalog/courses/NUTR/5720)
  Nutrigenetics
- PUBH.5140
  (https://www.uml.edu/catalog/courses/PUBH/5140)
  Healthcare Management*
- PUBH.6070
  (https://www.uml.edu/catalog/courses/PUBH/6070)
  Healthcare Information Systems*
- PUBH.6350
  (https://www.uml.edu/catalog/courses/PUBH/6350)
  Healthcare Project Management*
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLSC.5310</td>
<td>Clinical Immunohematology (Formerly 36.531)</td>
<td>3</td>
<td>Lecture and case study discussions look at the major red cell antigen/antibody systems that are of importance in understanding transfusion therapies, compatibility testing, and pathological diseases. Emphasis is on differentiation and clinical significance of each system. Donor selection regulations, component preparation, and hemotherapy will also be discussed. Students will be required to do a presentation, poster, and paper on an advanced topic in Clinical Immunohematology.</td>
</tr>
<tr>
<td>MLSC.5410</td>
<td>Introduction to Public Health and the Public Health Laboratory (Formerly 36.541)</td>
<td>3</td>
<td>This course is designed to provide an overview of public health and the public health laboratory covering topics such as the legal basis and history of public health, public health structure, communications and interactions, and epidemiology. Emphasis will be placed on the role of the public health laboratory and its core functions, its role in policy development, infectious disease, environmental issues, emergency preparedness, newborn screening, global issues, and public health research. Public health laboratory methodology, regulation and improvement, and quality assurance will also be examined.</td>
</tr>
<tr>
<td>MLSC.5500</td>
<td>Foundations of Biomedical Research</td>
<td>3</td>
<td>This course prepares graduate students in the MS in Clinical Laboratory Science for biomedical research. Students will learn clinical and basic research design and experimental aspects through applying critical thinking skills and engaging in outcome evaluation of research studies and quantitative data analysis and interpretation. Students will develop an understanding of the key differences between clinical, translational and basic research and their implications and relation to diagnostic, treatment and health management. The course will introduce students to literature review, identifying basic and key gaps and formulating key questions for scientific experimental pursuit. The course also reviews basic statistics research methods, including statistical significance.</td>
</tr>
<tr>
<td>MLSC.5510</td>
<td>Advanced Pathophysiology (Formerly 36.551)</td>
<td>3</td>
<td>Disease processes as appropriate and inappropriate as variants of normal physiological functions. A detailed examination of certain important and illustrative diseases rather than a survey of diseases in general.</td>
</tr>
<tr>
<td>MLSC.5530</td>
<td>Emerging Topics in Clinical Chemistry (Formerly 36.553)</td>
<td>3</td>
<td>This course is designed to give an in-depth understanding in clinical chemistry. Topics include: analytical techniques and the selection of methodologies. The course allows for a detailed examination and discussion of selected articles from the Journal of Clinical Chemistry.</td>
</tr>
<tr>
<td>MLSC.5600</td>
<td>Molecular Pathology (Formerly 36.560)</td>
<td>3</td>
<td>This graduate course is designed to study the molecular aspects of disease. Applications and techniques utilized in the field of molecular pathology are emphasized. This course is intended to provide students with information required to understand the increasing role of molecular pathology in the daily practice and management of chronic disease in medicine. Major emphasis on strength and limitations of clinical diagnostics technologies and their utilization in these applications are presented. This course will also provide a review of current molecular pathology literature and principles as they relate to specific organ systems.</td>
</tr>
<tr>
<td>MLSC.5750</td>
<td>Emerging Topics in Clinical Chemistry</td>
<td>3</td>
<td>This course will provide an advanced perspective on the discipline of clinical chemistry. In depth discussions of new discoveries in clinical chemistry biomarkers, new understanding of disease pathogenesis as they pertain to clinical chemistry will be pursued in this course. System and disease-based approaches to clinical chemistry analytical methods will be used to discuss emerging challenges and opportunities in the field, including analytical challenges. Emphasis will also be placed on theoretical concepts of clinical chemistry instrumentation, including components and design of modern instrumentation and analytical methodologies. The course will also discuss the role of the clinical chemist in ensuring that testing performed in clinical trials meets the highest standards and provides meaningful data.</td>
</tr>
<tr>
<td>MLSC.5750</td>
<td>Topics in Clinical Laboratory Science</td>
<td>3</td>
<td>This course provides students with the knowledge that is fundamentally necessary to understand the routine operations of the clinical diagnostic laboratory. The course will familiarize students with the diagnostic application of the most current testing methodologies and also provide a forum to discuss and critically review primary literature pertinent to current clinical laboratory issues.</td>
</tr>
<tr>
<td>MLSC.6000</td>
<td>Biomarker Discovery &amp; Applications</td>
<td></td>
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</tr>
</tbody>
</table>
Credits: 3

This course will cover the burgeoning field of biomarkers research, with a special focus on biomedical and clinical applications. The course is organized in three main sections: (I) Biomarker discovery and validation, including types of biomarkers and platforms for discovery (proteomics, metabolomics, multiplex technologies); (II) biomarker applications in clinical and health research; and (III) new frontiers in biomarkers research. Examples of biomarker applications will include organ systems, disciplines (clinical lab sciences and clinical trials, environmental health, toxic tort and forensic litigation), and regulatory perspectives.

MLSC.6001 Biomarkers Discovery and Application Lab - Credits: 1

This course provides hands-on laboratory experience that will illustrate and enhance critical concepts related to biomarker discovery and validation. Techniques will include LC-ESI-MS/MS and multiplexing technologies for biomarker analysis in human biological samples, including urine, and blood.

MLSC.6100 Clinical Toxicology - Credits: 3

Clinical toxicology traditionally studied the toxic effects of therapeutic agents - substances intended to treat orameliorate disease. Modern clinical toxicology has a broader scope: to examine complex toxicological events that result from the interaction of toxins with normal physiology, including therapeutics, drugs, natural poisons and inadvertent chemical exposures, as well as the clinical management of toxicity. The course places special emphasis on the temporality of events, from the developments of signs, to symptoms, to pathology. Analytical tools, such as mass spectrometry, needed to measure toxins and their metabolic byproducts in biological fluids of living organisms are discussed.

MLSC.6101 Clinical Toxicology Lab - Credits: 1

This course provides hands-on laboratory experience that will illustrate and enhance critical concepts related to clinical toxicology. Techniques will include immunoassay, advanced spectroscopy techniques and emerging technologies for toxicology analysis in human biological samples, including urine, and blood.

MLSC.6130 Infectious Disease (Formerly 36.613) - Credits: 3

This course is designed for graduate students in the health sciences focusing on the pathophysiology of infectious disease. Major infectious organisms will be discussed as biological models and presented in the way they affect major systems of the body. Emphasis will be placed on journal readings describing significant episodes of emerging infections and current technology in diagnosis and treatment of infectious diseases.

MLSC.6150 Medical Mycology and Parasitology (Formerly 36.615) - Credits: 3

This course is designed to instruct students in diagnostic medical mycology and parasitology. Diseases, specimen collection and handling, laboratory identification and treatment of medically significant fungi and parasites will be studied. Discussion of AIDS related infections and prophylactic treatment will be evaluated. Life cycles of parasites, prevention and environmental protection plans will be analyzed.

MLSC.6400 Quality Assurance, Control and Improvement in the Clinical and Public Health Lab (Formerly 36.640) - Credits: 3

This course is designed to provide an overview of total quality management issues in the Clinical and Public Health laboratory. Topics presented will include CLIA and quality control in the laboratory, clinical and public health laboratory QC calculations, charts and graphs, regulations involving new control lots, out-of-control QC situations, method comparison, instrument validation, and quality assurance. Emphasis will be placed on meeting all federal regulations including the FDA, state regulations, as well as meeting professional agency regulations such as JCAHO, CAP, and APHL.

MLSC.7330 Graduate Project - Clinical Laboratory Sciences (Formerly 36.733) - Credits: 3

An independent study or laboratory project which has been approved and is under the direction of the project advisor. Projects are approved by the graduate coordinator in conjunction with the project advisor.

MLSC.7340 Graduate Project - Clinical Laboratory Sciences (Formerly 36.734) - Credits: 1-4

An independent study or laboratory project which has been approved and is under the direction of the project advisor. Projects are approved by the graduate coordinator in conjunction with the project advisor.

MLSC.7430 Master’s Thesis - Clinical Lab Sciences (Formerly 36.743) - Credits: 3

Analytical and/or experimental work conducted under the direction of a thesis advisor and in accordance to the Graduate School Guidelines. Students are required to submit a written proposal for approval by a thesis committee and to present an
oral defense at a college seminar.

**MLSC.7440 Master's Thesis - Clinical Laboratory Science (Formerly 36.744) - Credits: 4**

Research Design and Methodology. Analytical and/or experimental work conducted under the direction of a thesis advisor and in accordance to the Graduate School Guidelines. Students are required to submit a written proposal for approval by a thesis committee and to present an oral defense at a college seminar.

**MLSC.7530 Doctoral Research (Formerly 36.753) - Credits: 3**

**MLSC.7560 Doctoral Research (Formerly 36.756) - Credits: 6**

**MLSC.7590 Doctoral Research (Formerly 36.759) - Credits: 9**

**NUTR.5060 Biochemistry of Lipids(Formerly 36.506) - Credits: 3**

This advanced course in the nutritional biochemistry and physiology of lipids will detail the role of lipids in the normal and pathological processes at both the cellular and whole organism level. Topics will range from general discussions of the digestion, absorption and transport of lipids to the role of eicosanoids and lipid soluble anti-oxidants during normal and diseased states, such as atherosclerosis, diabetes and hypertension. Subject matter will also include a discussion of the various interventions for the prevention and treatment of certain of these disease states. There will also be discussion of the current issues in lipid nutrition.

**NUTR.5630 Vitamins and Minerals(Formerly 36.563) - Credits: 3**

Provides a foundation for understanding the role of vitamins and minerals in human nutrition. Emphasis is placed on their roles in human biochemistry and physiology. The mechanism of action for each nutrient is examined. The course will explore the effects of nutrient deficiency, and identify the best dietary sources for each vitamin and mineral.

**NUTR.5720 Nutrigenetics (Formerly 36.572) - Credits: 3**

Regulation of eukaryotic gene expression by specific nutrients, hormones, and metabolites will be discussed including transcriptional, post-transcriptional, and translational mechanisms with an emphasis on disease development or prevention. Application of material will include determining how human dietary requirements are affected by gene variants and inherited biochemical characteristics. This course will enable students to link their knowledge of nutrition with the growing discipline of the effects of diet on the human genome and specific hereditary diseases.

**NUTR.5820 Seminar in Advanced Nutrition(Formerly 36.582) - Credits: 3**

Review and analysis of contemporary research publications in human nutrition. Recently discovered nutrients that may be essential to human health will be evaluated. We will critically examine the benefits of dietary modification in controlled investigations. Course will focus on published studies of the relation of dietary practices to health and disease. We will examine nutrition policy, and the way scientific findings in nutrition translate into public health practice. This course will be of value to students who wish to critically examine literature in human nutrition, and who seek to develop new directions for nutrition research.

**NUTR.6000 Public Health Nutrition Practice - Credits: 3**

This course provides advanced study in public health and community nutrition. Concepts related to cultural competency, public health and nutrition policy, health promotion, and the nutrition care process will be learned through lectures, in-class activities, case studies, and peer-led discussions. Students will have the opportunity to practice skills in community and public health nutrition settings such as food pantries and senior nutrition centers.

**NUTR.6010 Nutrition Assessment(Formerly 36.601) - Credits: 3**

This course provides an overview of tools used to assess nutritional health, dietary adequacy, dietary variety, and food security. Lectures and lab will be integrated together to demonstrate and provide experience in methods needed to assess, screen, and monitor physiological and dietary indicators of nutritional health. There will be an emphasis on methods and tools for assessing body composition, biochemical indicators, dietary intake, energy expenditure, and physical activity. Students will learn how to select and apply these methods in community, clinical and research settings and determine the strengths and limitations of each assessment tool.

**NUTR.6020 Community Based Interventions (Formerly 36.602) - Credits: 3**

This course will examine a broad range of community-based research and programs within the United States. Strategies for effective community-engagement and programming planning,
implementation and evaluation will be discussed. Specific attention will be given to cultural tailoring of interventions. Students will engage in experiential learning and will work in teams to write a community funding proposal. Students will be required to present their funding proposal to a community panel. Field visits will allow students to interact with and learn from public health experts.

NUTR.6030 Global Nutrition (Formerly 36.603) - Credits: 3

This course is an examination of the food and nutrition issues around the world. The impact of food production and food intake on the environment and global nature of our food systems will be reviewed. The course will also include consideration of specific nutrient deficiencies, as well as nutrition-related aspects of infectious and chronic disease along with the programs and resources available to combat malnutrition for children and adults worldwide.

NUTR.6040 Nutrition Epidemiology (Formerly 36.604) - Credits: 3

This course is designed for graduate students who are interested in conducting or better interpreting epidemiologic studies relating diet and nutrition status to disease and health. There is an increasing awareness that various aspects of diet and nutrition may be important contributing factors in chronic disease. There are many important problems, however, in the implementation and interpretation of these studies. The purpose of this course is to examine methodologies used in nutritional epidemiologic studies in lecture and lab settings, and to review the current state of knowledge regarding diet and other nutritional indicators as an etiologic factor in disease.

NUTR.6050 Food and Nutrition Management - Credits: 3

This course provides advanced study in food and nutrition management principles. Topics include management theory, personnel selection, training, evaluation, organizational behavior, communication, governmental influences, labor management relations, marketing, and budgeting. This course requires group work, development of a business plan, and completion of management related case studies.

NUTR.6060 Advanced Clinical Nutrition - Credits: 3

This course provides advanced study in clinical nutrition. Topics include the nutrition care process, standardized language and documentation, evidence-based practice, confidentiality of medical records, JCAHO regulations, and coding and billing. Case studies will be completed to review and advanced learning about medical nutrition therapy for acute and chronic nutrition-related diseases. As part of this course, students will practice providing nutrition assessment, counseling, education, professional documentation, and evaluation in clinical nutrition settings.

NUTR.6660 Community Nutrition Supervised Practice - Credits: 1

This supervised practice experience is the application of knowledge and skills in community and public health nutrition. Students will practice nutrition assessment, nutrition counseling, and nutrition education for a wide range of populations at high nutritional risk. Students will develop cultural awareness and skills in cultural competency.

NUTR.6670 Food and Nutrition Management Supervised Practice - Credits: 1

This supervised practice experience is the application of knowledge and skills in food and nutrition management. There will be hands-on experience in human resource and financial management. Management skills specific to the food service industry, including management functions related to safety, security and sanitation, will also be incorporated. Students will also be able to apply knowledge in food production, distribution, and food service systems along with skills in menu planning. There will be an emphasis on using strategies to reduce waste and protect the environment.

NUTR.6680 Clinical Nutrition Supervised Practice - Credits: 1

This supervised practice experience is the application of knowledge and skills in clinical nutrition. Students will receive hands-on experience in nutrition assessment, diagnosis, and treatment of nutrition-related diseases while using skills in nutrition counseling and applying principles from behavior change theories. Students will be able to practice documentation of nutrition care and participate as members of an interdisciplinary team.
HSCI.5020 Graduate Global Health Experience -
Credits: 3

The Global Health Experience provides an experiential learning experience in health within a country outside of the United States. Students will study the health issues of a given country while examining the socio-cultural, economic and environmental determinants of health within that society. The strengths and weaknesses of the existing health care system will be analyzed. Students will explore the culture, environment, and health care system under the direction of College of Health Sciences faculty.

HSCI.5500 Human Development and Pathophysiology (Formerly 30.550) - Credits: 3

The physiological steady state of the human body and disruptions that result over the life span will be examined as well as the pathophysiological mechanism manifested in disease states. The course addresses defense, compensating, and adaptive responses to the pathophysiological processes as they apply to the various systems rather than being a survey course of diseases.

HSCI.5510 Clinical Pathophysiology - Credits: 3

The student will examine disease processes as variants of normal physiological functions with emphasis on understanding the pathophysiologic basis of common diseases in certain systems. This graduate level course is a comprehensive exploration of the etiology, pathogenesis, clinical manifestations, and treatment of disease.

PUBH.5130 Assessment and Planning in Public Health - Credits: 3

This course presents methods, concepts and techniques required for the identification of resources and needs, and planning of public programs and advocacy efforts to meet those a community, state, national, and global levels. Students will engage in community assessment and planning activities based on ethical and professional principles. This course will enhance skills needed for a health education specialist.

PUBH.6910 Advanced Program Evaluation - Credits: 3

The focus of this course is the development of skills needed to plan, conduct, and critique evaluations. Students will learn the major principles and methods associated with systematic evaluation of public health initiatives.
Graduate Certificates in Biomedical & Nutritional Sciences

PHARMACEUTICAL SCIENCE

Suzanne Moore, D.V.M.  
mailto:Suzanne_Moore@uml.edu

978-934-6264

This graduate certificate is a four-course program in Pharmaceutical Sciences intended for individuals who are interested in getting acquainted with pharmaceutical sciences. The courses offered in the certificate program are foundation courses in the Pharmaceutical Sciences MS and Ph.D programs.

Prerequisites:

- Baccalaureate degree from an accredited institution with a minimum GPA of 3.00.
- Completed undergraduate courses in calculus, general and organic chemistry, biochemistry and biology or anatomy and physiology with grades of C or above.

Required Courses:

- PHRM.6100 (https://www.uml.edu/catalog/courses/PHRM/6100) Principles of Pharmaceutical Sciences
- PHRM.6400 (https://www.uml.edu/catalog/courses/PHRM/6400) Pharmaceutical Analysis
- PHRM.6410 (https://www.uml.edu/catalog/courses/PHRM/6410) Drug Delivery
- PHRM.6600 (https://www.uml.edu/catalog/courses/PHRM/6600) Pharmacokinetics and Drug Metabolism

Programs of Study

Pharmaceutical sciences is an exciting field that offers many different career opportunities in the biopharmaceutical and pharmaceutical industries, and in research and academia. We offer an M.S., Professional Science Masters and Ph.D. program in Pharmaceutical Sciences.

Pursue the degree that’s right for you:

- **Masters** support technical roles in research and production settings that will help meet the demand for new drugs that treat human disease and evaluate the safety and effectiveness of drug therapies.
- **Professional Science Masters** gain both technical and business skills to work in the laboratory and assume leadership roles in the pharmaceutical industry.
- **Ph.D.** discover new drugs that treat human disease and evaluate the effectiveness and safety of drug therapies.

Visit the Pharmaceutical Sciences program website.

Contact:

Suzanne Moore, D.V.M.  
mailto:Suzanne_Moore@uml.edu

Program Coordinator

Weed Hall

978-934-6264

Masters in Pharmaceutical Sciences

Admission and Degree Requirements

Applicants to the M.S. or Professional Science Masters programs in Pharmaceutical Sciences must have a B.S. degree or be in the last semester of their baccalaureate program. Up to 12 credits of graduate work of appropriate course work with a grade of B or better can be transferred into the UMass Lowell MS Pharmaceutical Science programs if approved by the Graduate Coordinator.
Upon admission or through the successful completion of prerequisite courses, students will be expected to have successfully demonstrated undergraduate level knowledge in biochemistry, calculus, general and organic chemistry and biology or anatomy and physiology.

The M.S. curriculum will consist of 32 credits of coursework. Coursework will generally be scheduled in the fall and spring semesters. Full-time students should finish in 12 months by taking course during the summer terms. Students who attend part-time should finish within five years.

The Program Coordinator and advisers in the program will guide M.S. students through a part-time or full-time program of study. Full-time study is equivalent to 9 credits per semester.

Example Plan of Study by Semester for Full-Time M.S. Students

Fall Semester

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>CHEM.5500</td>
<td>Biochemistry I</td>
<td>3 credits</td>
</tr>
<tr>
<td>PHRM.6100</td>
<td>Principles of Pharmaceutical Sciences</td>
<td>3 credits</td>
</tr>
<tr>
<td>PHRM.6120</td>
<td>Principles of Pharmaceutical Sciences Lab</td>
<td>1 credit</td>
</tr>
<tr>
<td>BIOL..5420</td>
<td>Cell Biology (a)</td>
<td>3 credits</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10 credits</td>
</tr>
</tbody>
</table>

Spring Semester

<table>
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<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM.5620</td>
<td>Pharmaceutical Biochemistry (b)</td>
<td>3 credits</td>
</tr>
<tr>
<td>PHRM.6400</td>
<td>Pharmaceutical Analysis</td>
<td>3 credits</td>
</tr>
<tr>
<td>PHRM.6420</td>
<td>Pharmaceutical Analysis Lab</td>
<td>1 credit</td>
</tr>
<tr>
<td>XXXX.XXXX</td>
<td>Pharmaceutical Science Elective</td>
<td>3 credits</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10 credits</td>
</tr>
</tbody>
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Summer Term I

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLSC.5510</td>
<td>Advanced Pathophysiology (c)</td>
<td>3 credits</td>
</tr>
<tr>
<td>PHRM.6600</td>
<td>Pharmacokinetics &amp;Drug Metabolism</td>
<td>3 credits</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>6 credits</td>
</tr>
</tbody>
</table>

Summer Term II

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHRM.6410</td>
<td>Drug Delivery</td>
<td>3 credits</td>
</tr>
<tr>
<td>PUBH.5770</td>
<td>Introduction to Biostatistics</td>
<td>3 credits</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>6 credits</td>
</tr>
</tbody>
</table>

Total Credits for MS degree: 32 credits

- (a) OR BIOL.5760 Cell Culture or CHEN.5350 Cell and Microbe Cultivation
  (if Cell Biology or equivalent training was previously completed at either the undergraduate or graduate level)
  - (b) OR CHEM.6310 Principles of Medicinal Chemistry I (3 credits)
  - (c) OR HSCI.5500 Human Development and Pathophysiology (3 credits)

Pharmaceutical Sciences Elective options include (but are not limited to):

- BIOL.5760 Cell Culture
- BIOL.5820 Cancer Biology
- BIOL.5930 Immunology
- CHEM.5140 Advanced Analytical Chemistry
- CHEM.5260 Chromatography
- CHEN.5350 Cell and Microbe Cultivation
- CHEN.5450 Protein Isolation and Purification
- CHEN.5550 Biopharmaceutical Regulatory Compliance
- CHEN.5480 Engineering Process Analytics
- MLSC.5600 Molecular Pathology

Other pharmaceutical sciences elective options may be added to this list or be approved by the Graduate Coordinator.

Ph.D. in Pharmaceutical Sciences

Admissions and Degree Requirements

Students from the UMass Lowell’s MS in Pharmaceutical Sciences (or another relevant UMass Lowell science or engineering MS) program with a cumulative GPA of a 3.5 or greater may apply to the Ph.D. program and, if accepted proceed with advanced standing in the PhD program and will be eligible to take the qualifying exam, which must be successfully completed within one year of acceptance. Priority admission will be given to students who have earned their MS in Pharmaceutical Sciences (or another relevant program) at UMass Lowell.

External applicants to the PhD program will be accepted if they have a MS degree in Pharmaceutical Sciences with a cumulative GPA of 3.5 or greater from another college or university, but may be required to take any additional core curriculum courses they have not previously taken. Upon completion of the core curriculum these students will be required to attempt the qualifying exam within 6 months and must successfully complete the qualifying exam within one year.
Students in the Ph.D. program are also required to take a minimum of 12 more credits of Advanced Elective courses. Other advanced Elective options may be added to this list or be approved by the Graduate Coordinator and the student’s Research Advisor.

The Program Coordinator and advisors in the Ph.D. program will guide graduate students through a full-time program of study. Full-time study is equivalent to 9 credit hours per semester.

Advanced Elective List for Ph.D. Students

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL.5210L</td>
<td>Genomics Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>BIOL.5290</td>
<td>Recombinant Protein Production Technology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL.5320</td>
<td>Genomics</td>
<td>3</td>
</tr>
<tr>
<td>BIOL.5340</td>
<td>Genomics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIOL.5670</td>
<td>Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL.5690L</td>
<td>Molecular Techniques</td>
<td>4</td>
</tr>
<tr>
<td>BIOL.5890</td>
<td>Practical Protein Crystallography</td>
<td>4</td>
</tr>
<tr>
<td>CHEM.5380</td>
<td>Biochemical Mechanisms</td>
<td>3</td>
</tr>
<tr>
<td>CHEM.5510</td>
<td>BioChemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM.5660</td>
<td>Advanced Physical Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM.5680</td>
<td>Nanomaterials and Nanostructures</td>
<td>3</td>
</tr>
<tr>
<td>CHEM.5680</td>
<td>Structural Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CHEM.5700</td>
<td>Advanced Protein Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM.6320</td>
<td>Principles of Medicinal Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>MLSC.5800</td>
<td>Clinical Applications of Molecular Genetics</td>
<td>3</td>
</tr>
<tr>
<td>NUTR.5720</td>
<td>Nutrigenomics</td>
<td>3</td>
</tr>
</tbody>
</table>

SubTotal # Advanced Elective Credits Required: 12 - 13

Dissertation and Research Courses

(total courses required = 4)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHRM.7550</td>
<td>Graduate Research</td>
<td>12 - 27 credit hours (4-0 per semester)</td>
</tr>
<tr>
<td>PHRM.7590</td>
<td>Doctoral Dissertation</td>
<td>4 - 9 credit Hours</td>
</tr>
</tbody>
</table>

SubTotal Dissertation Research Credits Required: Minimum 26
PHRM.6100 Principles of Pharmaceutical Sciences  
(Formerly PHSC 610) - Credits: 3

The purpose of this introductory course in the pharmaceutical sciences is to provide an overview of the drug development process, involving drug discovery, drug action, and drug delivery. The student will become acquainted with cutting-edge research in discovery, action, and delivery. This course provides a foundation in pharmaceutical sciences along with theoretical, practical, regulatory, and professional issues in the pharmaceutical sciences.

PHRM.6120 Principles of Pharmaceutical Sciences Laboratory - Credits: 1

The purpose of this introductory course in the pharmaceutical sciences is to provide an overview of the drug development process, involving drug discovery, drug action, and drug delivery. Laboratory experiments will be performed to exemplify and expand upon the principles covered in Principles of Pharmaceutical Sciences lecture.

PHRM.6200 Pharmacokinetics (Formerly PHSC 620) - Credits: 3

This course focuses on the study of the biochemical and physiological effects of drugs and the mechanisms of their actions. The quantitative aspects of drug absorption, distribution, metabolism, and excretion will be explored. The philosophy of pharmacokinetic modeling and its application in practice will be introduced.

PHRM.6300 Pharmaceutical Research Design and Ethics (Formerly PHSC 630) - Credits: 3

This course explores research methodologies and statistics that are commonly used in pharmaceutical research. Scientific integrity in research will be discussed, as well as ethical issues in conducting pharmaceutical research in the laboratory.

PHRM.6400 Pharmaceutical Analysis (PHSC 640) - Credits: 3

Students in this course learn about modern analytical methods used to analyze the purity, strength, and quality of drugs and pharmaceutics.

PHRM.6410 Drug Delivery (Formerly PHSC 641) - Credits: 3

The biological, biophysical and chemical factors that influence drug delivery systems will be analyzed. Principles of cellular drug transport, in vivo drug transport, and modern drug delivery, including drug targeting will be explored. The course will also address membrane trafficking and intracellular transport and the utilization of these mechanisms in drug delivery and targeting.

PHRM.6420 Pharmaceutical Analysis Laboratory - Credits: 1

Students in this course analyze the purity, strength, and quality of drugs and pharmaceutics by applying modern analytical methods. Raw materials and completed dosage forms will also be analyzed in the laboratory.

PHRM.6501 Drug Discovery - Credits: 3

Drug discovery is the translational application of biology, chemistry, medicine, business and law in the identification of new medicines. This course is designed to provide each student with a full understanding of the challenges and opportunities that face scientists engaged in this enterprise in the biotech and pharmaceutical industries. Active learning objectives (case studies; project team work) are included to supplement the more didactic course materials, and to provide a simulation of the approaches used in industry to accomplish the key goal-the nomination of a clinical drug candidate worthy of extensive investment and testing in humans.

PHRM.6600 Pharmacokinetics and Drug Metabolism - Credits: 3

This course focuses on the study of the biochemical and physiological effects of drugs and the mechanisms of their actions. The quantitative aspects of drug absorption, distribution, metabolism, and excretion will be explored. The philosophy of pharmacokinetic modeling and its application in practice will be introduced. An overview of the structure, function and regulation of major drug metabolic enzymes and transporters will also be emphasized.

PHRM.6707 Drug Metabolism (Formerly 36.707) - Credits: 3

This course provides an overview of the structure, function and regulation of major drug metabolic enzymes and transporters.

PHRM.7100 Advanced Topics in Pharmaceutical Sciences (PHSC 710) - Credits: 2

Select advanced topics and the evaluation of scientific literature in pharmaceutical sciences will be discussed in this seminar.

PHRM.7550 Graduate Research - Credits: 1-9

Enrolled students will be completing supervised research as
they progress toward the completion of their degree.

PHRM.7590 Doctoral Dissertation - Credits: 1-9

Enrolled students anticipate completion of all dissertation requirements during the semester in which they are enrolled for this course.
Department of Physical Therapy & Kinesiology

The Department of Physical Therapy offers the following graduate programs:

- Doctorate in Physical Therapy

Program Mission

The Department of Physical Therapy & Kinesiology mission is to promote health and participation in a global society through:

- Teaching of theory and practice of physical therapy and exercise science in classroom and community-based settings
- Preparing graduates to achieve their chosen path with knowledge, competence, and respect for human well-being.
- Scholarship that advances multidisciplinary scientific research and encompasses educational and practical applications of movement science.
- Community service in partnership with local, regional, and national organizations advancing intervention and prevention-based strategies in health.

Doctoral Program in Physical Therapy

The Doctor of Physical Therapy (DPT) program at UMass Lowell prepares individuals for entry into the profession of physical therapy. The fully accredited program requires a baccalaureate degree for admission and a three-year full-time commitment, including part of each summer.

The curriculum provides a comprehensive foundation in the art and science of physical therapy. Methods of instruction include classroom lecture and discussion, small group/problem-based learning, and skill development during laboratory and clinical experiences. Emphasis is placed on the development of clinical decision-making and critical inquiry skills across the curriculum.

The clinical education program consists of three extended clinical education experiences one (10-week and two 12-week) for a total of 34 weeks. Students experience a variety of practice settings and patient populations in preparation for general practice.

Program Goals

1. Prepare entry-level physical therapy clinicians in a manner consistent with contemporary professional norms. Graduates practice as competent, autonomous, collaborative, and doctoral-prepared providers who deliver services along the continuum of care from prevention to the remediation of impairments, activity, and participation restrictions in all populations.
2. Produce, disseminate, and incorporate scholarship that will advance the science, practice and education of physical therapy.
3. Promote, develop, and maintain effective community partnerships, cultivating proficiency in collaborative practice through modeling and experience in inter-professional education.

Program Outcomes

1. Graduates of the Doctor of Physical Therapy program at the University of Massachusetts Lowell will be prepared to exhibit attributes, characteristics and behaviors of professionals including: commitment to learning, interpersonal and communication skills, effective use of time and resources, use of constructive feedback, problem-solving, professionalism, responsibility, critical thinking, and stress management.
2. Graduates will practice physical therapy in a safe, evidence directed, effective, autonomous, mindful, culturally sensitive, ethical, and legal manner consistent with the patient/client management model.
3. Faculty will integrate contemporary practice and current
literature to guide curriculum and course content. Faculty employ contemporary teaching and learning strategies with pedagogical principles to physical therapy education.

4. The program adheres to departmental policies and procedures regarding academic achievement and standards of professional behavior and conduct insuring that graduates are prepared to meet current standards of practice.

5. Faculty will promote, develop and maintain scholarship associated with clinical, community and curricular engagement activities.

6. The program will prepare students to apply principles of the scientific method to conduct research and participate in evidence-based practice.

7. The program will develop and maintain local and international partnerships that deepen our commitment to communities and cultures promoting health and wellness.

8. The program will develop, promote and maintain opportunities consistent with Interprofessional Education and Collaborative practice in accordance with the Interprofessional Education Collaborative Core (IPEC) Competencies.

Program Philosophy:
The faculty of the Department of Physical Therapy & Kinesiology believe that individuals have intrinsic worth and a right to optimal health and function. Function is defined as those activities identified by an individual as essential to support physical, social, and psychological well-being and to create a personal sense of meaningful living.

Physical therapists provide services to patients/clients with alterations in body structure and function, activity and participation restrictions or changes in physical function and health status resulting from injury, disease, or other causes. Physical therapists utilize prevention and wellness strategies in individuals at risk for developing a reduction in physical function.

The physical therapist is professionally educated in a program that synthesizes graduate study with undergraduate knowledge, and experiential learning. The graduate of the Doctor of Physical Therapy program is prepared to function as an ethical and competent practitioner who management include examination, evaluation, diagnosis, prognosis, intervention and outcomes. The graduate is prepared to interact and practice in collaboration with a variety of health professionals, provide prevention and wellness services, consult, educate, and engage in critical inquiry. Finally, the graduate is prepared to direct and supervise physical therapy services, including support personnel. Graduate are expected to assume a leadership role in health care and to practice autonomously and cooperatively in a variety of practice settings such as: hospitals, rehabilitation centers, extended care facilities, schools, sports medicine clinics, community health and private practices, and industrial or workplace settings.

Students are active participants in the education process. The relationship between students and faculty is one in which there is mutual respect, understanding, and interchange of ideas. As experienced professionals, the faculty serve as a resource, mentor and role-model for the developing professional. The faculty are facilitators of the learning process. Students are expected to demonstrate commitment to learning as the basis for continued personal and professional growth, effective interpersonal and communication skills, problem-solving and critical thinking skills, and appropriate professional conduct. Effective use of time and resources, feedback, and stress management strategies are also important components of the behaviors of the successful student.

Minimum Admission Requirements

1. Baccalaureate Degree from an accredited university of college within past 10 years.
2. Undergraduate cumulative GPA of 3.0 or greater.
3. Prerequisite Science GPA of 3.0 or greater.
4. Graduate Record Examination, within the last 5 years:
   >290 combined. (quantitative + verbal) (GRE Code = 3911)
5. Documented personal experience in a physical therapy setting (volunteer or paid). Minimum 35 hours
6. Statement of Purpose (essay)
7. Three (3) Letters of Recommendation, one (1) of which must be submitted by a licensed physical therapist.
8. Computer literacy in word, excel, power point, etc., is expected.
*** Must be taken in a traditional (on-campus/classroom) setting.

Important Notes:

- The **Completed Application Deadline is November 1** for admission into the next class beginning matriculation the following May. All documents in support of the application are due at the deadline, e.g., letters of recommendation, official transcripts, official GRE scores, etc.
- No more than two (2) pre-requisite courses may be missing at the time of our application deadline to remain eligible for full consideration. (Courses which are “in-Progress” at the time of the application deadline are considered missing).
- **All Applicants**: Meeting the minimum application requirements does not guarantee admission into the program. Students may be asked to provide documentation of equivalent course content proposed to meet admission criteria. Any/All applications deemed incomplete at the application deadline will be ineligible for full department review. The Faculty supports the position to recruit and retain students who by reason of ethnic, cultural, or socioeconomic background are more likely to serve areas of critical need.

Additional Program Requirements

1. Proof of yearly physical examination by a physician indicating satisfactory general health status and proof of immunization for measles, mumps, rubella, tetanus, polio, diphtheria, tuberculosis, and Hepatitis B is required prior to clinical education experiences.
2. A CORI check (Criminal Offender Record Information) prior to clinical education experiences is required.
3. Costs related to clinical education experiences including transportation, housing, meals and tuition/fees are assumed by the student. Students should expect and plan for out-of-state clinical placements.
4. Professional behavior (defined as Generic Abilities) is required during all academic and clinical education experiences.

For additional, DPT program-specific, information regarding our admission requirements, please contact:
Keith W. Hallbourg
Graduate Admissions Coordinator
Department of Physical Therapy
University of Massachusetts Lowell
Phone: 978-934-4402
Email: keith_hallbourg@uml.edu
Fax: 978-934-1069

Course of Study

- DPT Degree Pathway (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
- DPT Course Checklist (https://www.uml.edu/docs/Prerequisite%20Course%20Checklist%20Course%20Checklist%20%289-18%29_tcm18-171121.pdf) (pdf)
- Certification of Hours - Clinical Observation Form (https://www.uml.edu/docs/Certification%20of%20Hours%20%289-18%20%29_tcm18-299573.pdf) (pdf)

You will need Adobe Acrobat Reader (https://get.adobe.com/reader/) to view any pdf files. It can be downloaded for free from the Adobe website (https://get.adobe.com/reader/).

Read the UMass Lowell General Regulations for Graduate Students (http://www.uml.edu/Catalog/Graduate/Policies/General-Policies.aspx).

Completed Application Deadline: **November 1**.

Please submit add documents in support of your application to our Office of Graduate Admissions (http://www.uml.edu/grad).
DPTH.6010 Clinical Anatomy (Formerly 34.601) - Credits: 3

Clinical Anatomy is a study of the structures of the human body, utilizing lectures, demonstrations and A.V. materials. It is a foundation course for physical therapy procedures courses. All physical therapy graduate courses (number 34.) are restricted to PT majors only.

DPTH.6020 Neuroscience: Anatomy (Formerly 34.602) - Credits: 3

Neuroscience anatomy presents the form and functions of the human nervous system. It is a foundation course for physical therapy procedure courses. The student is introduced to clinically relevant neuroanatomy through a close examination of the signs and symptoms of a variety of pathologies, including lesions, tumors, injuries, and congenital disorders. Clinical examples are freely used to highlight the integral relationship between structural anatomy and functional impairment.

DPTH.6030 Anatomy Laboratory (Formerly 34.603) - Credits: 1

This course will introduce anatomical terminology, anatomical structures, functions, and interrelationships of the human body to physical therapy students as a baseline of knowledge for future courses in the program.

DPTH.6040 Neuroscience: Physiology/Neurology (Formerly 34.604) - Credits: 3

Neuroscience presents the principles of neurophysiology, neurology, and motor control as related to the practice of physical therapy. Topics in neurophysiology include: conduction and transmission of the nerve impulse, neuromuscular synaptic transmission and skeletal muscle contraction, muscle tone and spinal reflexes, the neurophysiology of sensation and movement, and the transmission of pain. Neurological conditions will be integrated with these various neurophysiological topics through the use of case studies and will include: peripheral nerve injuries, neuromuscular conditions, and diseases/conditions of the central nervous system. An introduction to the major theories of motor control and their applications to physical therapy examination and intervention will be discussed through problem solving and case studies. All physical therapy graduate courses (number 34.) are restricted to PT majors only.

DPTH.6050 Physical Therapy Interventions I Lecture (Formerly 34.605) - Credits: 3

This course introduces the student to the principles of patient evaluation and treatment. Throughout this course, case studies will be used to promote student integration of didactic material into practical clinical situations. The use of appropriate evaluation procedures and the associated rationale for safe and effective treatment procedures are emphasized. Topics include: principles of biomechanical analysis, body mechanics, exercise prescription, postural evaluation, patient positioning, transfers, gait analysis, gait training, activities of daily living, wheelchair prescription and mobility, isolation/sterile technique, wound care, vital signs, heat and cold modalities, soft-tissue manipulation, and clinical documentation.

DPTH.6060 Neuroscience Laboratory (formerly 34.606) - Credits: 1

Neuroscience laboratory includes the study of the anatomy and function of the human brain, spinal cord, peripheral and autonomic nervous systems through prospection, audiovisual resources and experimental procedures. The gross anatomy of the human brain and spinal cord will be visualized using prossections of human specimens, models, and slides. The second half of the laboratory will focus on the Neurological Evaluation including evaluation of reflex function, assessment of sensory and cerebellar mechanisms, and testing cranial nerve function in typical and simulated atypical subjects. Motor learning activities and Cognitive Testing will be performed. To help synthesize the course content each student will present a neuropathology case study.

DPTH.6070 Physical Therapy Interventions I Laboratory (formerly 34.607) - Credits: 1

This laboratory course develops the psychomotor skills necessary to apply the didactic knowledge presented in the Physical Therapy Interventions I Lecture to clinical situations and patient care. The safe and effective performance of various evaluation and treatment techniques is emphasized. Topics include: principles of biomechanical analysis, body mechanics, exercise prescription, postural evaluation, patient positioning, functional mobility training, gait analysis and training, activities of daily living, wheelchair prescription and mobility, isolation/sterile technique, vital signs, heat and cold modalities, soft-tissue mobilization, and clinical documentation.

DPTH.6080 Musculoskeletal Physical Therapy I (formerly 34.608) - Credits: 3

This course is the first of a three-course series which explores physical therapy management of musculoskeletal dysfunction. In this first course, general models for physical therapy intervention will be presented. The evaluation, treatment and prevention of pathological conditions affecting the musculoskeletal system of the lower extremity will be emphasized. Normal function will be included as a basis for recognizing and therapeutically resolving dysfunction of
skeletal and joint structures, muscles and soft tissues. A problem-solving approach to resolve impairments, contributing to functional limitations and disabilities, will be stressed. All physical therapy graduate courses (number 34.) are restricted to PT majors only.

DPTH.6090 Medical/Surgical Pathology (formerly 34.609) - Credits: 3
This course presents an introduction to the study of diseases commonly seen in people with conditions treated by physical therapists. Mechanisms of cell growth, response to injury, cell death as well as the psychosocial effects on the patient and family are reviewed.

DPTH.6100 Musculoskeletal Physical Therapy I Laboratory (formerly 34.610) - Credits: 1
This lab course develops psychomotor skills and clinical application of didactic knowledge gained in MSPT I Lecture (DPTH.6080). The examination and treatment procedures are taught using demonstrations, peer practice and case studies as they pertain to the hip, knee and ankle/foot. Examination procedures are organized by body regions and include interview, observation, palpation, anthropometric measurements, goniometry, joint play mobility, muscle strength testing, and special tests. Treatment procedures focus on integrating joint mobilization, passive and active stretching techniques, progressive strengthening exercises, and edema control with the thermal modalities, therapeutic exercises and functional activities taught in PT Interventions.

DPTH.6110 Professional Issues/Clinical Practice (formerly 34.611) - Credits: 3
This course is divided into two sections. The first course section will provide an overview of the profession of physical therapy. Professionalism, cultural competence and communication skills will be discussed as they apply to classroom instruction and clinical practice. The APTA (American Physical Therapy Association) Standards of Practice, Code of Ethics, The Scope of Physical Therapy Practice, ethnography and Evidence-Directed Care and Massachusetts and New Hampshire practice regulations will be discussed. The second portion of the course will emphasize the development of effective documentation skills.

DPTH.6120 Cardiopulmonary Physical Therapy I (formerly 34.612) - Credits: 3
In Cardiopulmonary Physical Therapy students will learn the essentials of physical therapy examination, evaluation and intervention for patients with pathological cardiopulmonary conditions. The course emphasizes a problem solving, clinical decision-making approach. Successful completion of the course requires the ability to integrate and synthesize information from this course with prerequisite and other related courses in a variety of cardiopulmonary case based problem-solving experiences.

DPTH.6140 Cardiopulmonary Physical Therapy I Laboratory (formerly 34.614) - Credits: 1
Cardiopulmonary Physical Therapy Laboratory is taken concurrently with Cardiopulmonary Physical Therapy Lecture (DPTH.6120). The course emphasizes procedures employed by the physical therapist when treating cardiopulmonary conditions. These laboratory experiences are designed to provide an opportunity to practice examination, evaluation, and interventions as discussed in lecture and demonstrate psychomotor proficiency in each procedure. Students will be expected to integrate and synthesize information from related courses in a variety of cardiopulmonary problem solving experiences.

DPTH.6150 Clinical Education I Seminar (formerly 34.615) - Credits: 1
This course is the first in a series of two one-credit seminars. The first installment will provide an overview of the clinical education experience portion of the Doctor of Physical Therapy program. Topics include; the roles of clinical educators, the process of obtaining and assigning clinical sites, the clinical performance instrument (CPI), appropriate communication in the clinical setting, ethical practice, psychosocial aspects, and generic abilities.

DPTH.6160 Research Methods (formerly 34.616) - Credits: 3
This course presents the role of research in the development and critical analysis of physical therapy clinical practice. Students are guided through the process of clinical scientific research including the following content areas: philosophy of science and causation, problem and hypothesis identification, review and analysis of scientific literature, methods of hypothesis testing, data analysis and interpretation and critique/evaluation of research results.

DPTH.6170 Neurological Physical Therapy Lecture I (formerly 34.617) - Credits: 3
This course is the first of two courses dealing with the physical therapy management of adult patients/clients with neurological dysfunction. Concepts, practical applications, and strategies based on theories of motor skill development, motor control, and motor learning will be discussed. A variety of neurological conditions with different levels of impairments, activity
limitations, and participation restrictions will be examined. Emphasis is on the development of clinical decision making skills using a problem solving approach. Practice is fostered in the development of appropriate plans of care. Concurrent laboratory classes emphasize the development of specific assessment and intervention skills.

DPTH.6190 Neurological Physical Therapy Laboratory I (formerly 34.619) - Credits: 1

This laboratory course must be taken concurrently with Neurological Physical Therapy I, DPTH.6170. Emphasis is on the development of problem solving and psychomotor skills necessary for successful management of the patient/client with neurological dysfunction. Videos and patient demonstrations are used to develop skills in examination, evaluation, and clinical decision making. Peer practice is used to promote the development of psychomotor skills in advanced therapeutic exercise and functional training. Problem solving in the application of interventions for different levels of impairments, activity limitations, and participation is stressed.

DPTH.6200 Neurological Physical Therapy II (formerly 34.620) - Credits: 3

This course is the second of two courses dealing with physical therapy management of adult patients/clients with neurological dysfunction. Concepts, practical applications, and strategies based on theories of motor skill development, motor control, and motor learning will be discussed. A variety of neurological conditions with different levels of impairments, activity limitations, and participation restrictions will be examined. Emphasis is on the development of clinical decision making skills using a problem solving approach. Practice is fostered in the development of appropriate plans of care. Concurrent laboratory classes emphasize the development of specific assessment and intervention skills.

DPTH.6210 Musculoskeletal Physical Therapy II Lecture (formerly 34.621) - Credits: 3

This course is the second of a three-course series which focuses on physical therapy management, and summarizes medical and surgical management of musculoskeletal dysfunction. The evaluation, treatment and prevention of pathological conditions affecting the upper extremity will be emphasized. Normal function will be included as a basis for recognizing and therapeutically resolving dysfunction of skeletal and joint structures, muscular and soft tissue. A problem-solving approach to resolve impairments, which contribute to activity limitations and participation restrictions, will be stressed.

DPTH.6220 Neurological Physical Therapy II Laboratory (formerly 34.622) - Credits: 1

This laboratory course must be taken concurrently with Neurological Physical Therapy II, DPTH.6200. Emphasis is on the development of problem solving and psychomotor skills necessary for successful management of the patient/client with neurological dysfunction. Videos and patient demonstrations are used to develop skills in examination, evaluation, and clinical decision making. Peer practice is used to promote the development of psychomotor skills in advanced therapeutic exercise and functional training. Problem solving using case studies in the application of interventions for different levels of impairments, activity restrictions and participation limitations is stressed.

DPTH.6230 Musculoskeletal Physical Therapy II Laboratory (formerly 34.623) - Credits: 1

This laboratory course develops the psychomotor skills to allow clinical application of didactic knowledge gained in Musculoskeletal Physical Therapy II Lecture. The safe and effective performance of examination and treatment procedures are taught using demonstrations, peer practice, case studies and mock exams as they pertain to the shoulder, elbow, forearm, wrist, and hand. Examination procedures, organized by body regions, include interview questions, observation, palpation, anthropometric measurements, goniometry, joint play mobility, muscle strength testing, and special tests. Treatment procedures focus on joint mobilization/manipulation, passive and active stretching techniques, and progressive strengthening exercises.

DPTH.6250 Physical Therapy Interventions II (formerly 35.625) - Credits: 3

This course is a study of advanced physical therapy procedures which utilize electrophysics and electrophysiology in evaluating and treating a variety of physical impairments. The course will emphasize theories and techniques used in electrodiagnosis, electromyography, functional electrical stimulation, iontophoresis, transcutaneous electrical stimulation, biofeedback, laser and therapeutic electrical currents including light and radar waves.

DPTH.6260 Geriatric Physical Therapy (formerly 34.626) - Credits: 3

This course will focus on the special needs of the elderly and on the physical therapy management of the geriatric client. The physical changes associated with normal aging as well as pathological changes will be discussed and analyzed. Program planning will stress holistic consideration of the rehabilitative, cognitive/behavioral, and psychosocial needs of the elderly. (Re)Evaluation including functional evaluation, treatment planning (and treatment plan evaluation), treatment cost effectiveness, documentation, reimbursement issues will be analyzed as they relate to the physical therapy management of the geriatric client. All physical therapy graduate courses
DPTH.6270 Physical Therapy Interventions II Laboratory (formerly 34.627) - Credits: 1

This course is a practical application of theories and principles presented in Physical Therapy Interventions II Lecture (DPTH.6250).

DPTH.6280 Musculoskeletal Physical Therapy III (formerly 34.628) - Credits: 3

This course provides the second-year physical therapy student with an introduction to physical therapy evaluation and management of dysfunction of the cervical, thoracic and lumbar spine, ribcage, and pelvis. The development of evaluation strategies, documentation skills, organized clinical decision making, and effective patient management techniques will be emphasized. Discussions and exercises will focus on developing patient diagnoses, functional problems lists, long and short-term goals, and treatment strategies. Critical thinking/problem solving strategies will be incorporated into all aspects of patient management. Emphasis will be on creating a climate that encourages learning. All physical therapy graduate courses (number 34.) are restricted to PT majors only.

DPTH.6290 Directed Research (formerly 34.629) - Credits: 1-3

The directed research experience provides students with the opportunity to develop a research project with the guidance of a faculty advisor. All physical therapy graduate courses (number 34.) are restricted to PT majors only.

DPTH.6300 Musculoskeletal III Laboratory (formerly 34.631) - Credits: 1

This laboratory course provides the student the opportunity to apply the didactic knowledge gained in the Musculoskeletal Physical Therapy II Lecture through a systematic clinical reasoning approach which focuses on the concept of-regional interdependence. Additionally, specific evidence-based evaluation and functional management techniques for the spine and pelvis will be demonstrated by instructors and practiced by students.

DPTH.6310 Pediatric Physical Therapy Lecture (formerly 34.631) - Credits: 3

This course focuses on the development of the individual from the prenatal period through adolescence within the context of the individual's family and cultural background. Emphasis will be on the examination, evaluation, diagnosis and formulation of a physical therapy plan of care for infants, children and adolescents with physical therapy related issues including wellness and prevention of disability. The framework for the course will be based upon principles of development, neural plasticity, motor control, motor learning, pediatric clinical decision making, the WHO ICF, and evidence directed care including clinical practice guidelines. The student will integrate the course material and synthesize appropriate plans of care using case studies and other interactive activities.

DPTH.6330 Pediatric Physical Therapy Laboratory (formerly 34.633) - Credits: 1

Through classroom and clinical laboratory experiences, the student will gain introductory level skill in the examination, evaluation, intervention, and development of a physical therapy plan of care for infants, children, and adolescents who have or are at risk for developing disabling problems requiring physical therapy intervention. Preventive and wellness strategies will also be developed and discussed. Problem solving and evidence directed practice including Clinical Practice Guidelines will be emphasized.

DPTH.6350 Clinical Education II Seminar (formerly 34.635) - Credits: 1

This course is the second in a series of two one-credit weekly seminars. The class will continue to explore the professional issues and application of didactic material in the clinical setting. Clinical education will be examined from the perspective of career development and physical therapy board preparation.

DPTH.6370 Integrating Clinical Practice (formerly 34.637) - Credits: 3

This course will focus on integrating clinical reasoning skills in physical therapy with an emphasis on application of evidence-based research and current concepts of disablement. Students will share clinical experiences focusing on utilization of - best practices and - Clinical Practice Guidelines.

DPTH.6390 Medical/Surgical -Orthopedics (formerly 34.639) - Credits: 3

Medical Surgical conditions (Orthopedics) present topics related to pathology and medical-surgical treatment of musculoskeletal disorders. Included will be bone development, bone repair, orthopedic examination, diagnostic examinations (including imaging), pathology and pathophysiology of musculoskeletal disease.

DPTH.6400 Professional Prep in PT (formerly 34.640) - Credits: 3
This course will focus on facilitating the students transition into the Physical Therapy Profession including successful completion of the professional licensure examination, the National Physical Therapy Exam: Student groups will outline and present review materials for the exam to each other including a list of sources for further study. The faculty facilitator will oversee the development and content of the presentations and supervise practice examinations. Students are guided through reflection in practice, development of a personal professional development plan, a Vision and Mission Statement including continuing education, pro bono and community service and participation in the American Physical Therapy Association. Other topics will include strategies for successful interviewing.

DPTH.6420 Health Policy & Admin (formerly 34.642) - Credits: 3
This course explores the social, political, and economic policies that impact the delivery of physical therapy services and health. The course underscores the issues of professionalism, leadership, management, and the advocacy to foster excellence in autonomous practice for the benefit of members and society. The course emphasizes leadership in promoting cultural competence, global and community health through the life span, social responsibility, effective application of technology, and health services research.

DPTH.6430 Evidence Directed Care (formerly 34.643) - Credits: 3
This course presents the role of evidence in the development and critical analysis of PT clinical practice guidelines and recommendations. Students practice analyzing, weighting, comparing and integrating sources of evidence. Methods of integrating various forms of evidence are covered including: examination and intervention systematic reviews, meta-analyses and clinical practice guidelines. The role of the PT’s experience and background, patient, family, and stakeholders in the development of clinical practice guidelines will be analyzed. Current topics such as the role of Telemedicine and theories of Behavioral Change will be discussed, compared and integrated into plans of care and clinical use.

DPTH.6440 Clinical Education Fieldwork II (formerly 34.644) - Credits: 1
This is the continuance of Directed Research experience providing students with the opportunity to complete and present a research project with the guidance of a faculty advisor. All physical therapy graduate courses (number 34.) are restricted to PT majors only.

DPTH.6450 Physical Therapy Interventions III
(formerly 34.645) - Credits: 3
This course introduces the second year physical therapy student to various topics related to specialized physical therapy management of patients. Topics include, but are not restricted to: lower extremity prosthetic and orthotic management, hand orthotic fabrication, introduction to ergonomic principles, ergonomic design of seating systems and workstations, cumulative trauma disorders, work site analysis, functional capacity evaluation, lumbar stabilization exercises, the acute care environment, post-mastectomy management, and aquatic therapy interventions.

DPTH.6460 Complex Cases in Physical Therapy
(formerly 34.646) - Credits: 3
This course, which runs concurrently with Clinical Education Experience III (DPTH.6530), is designed to promote evidence-based practice, intra-professional correspondence, and further socialization into the profession of physical therapy. Students are expected to incorporate evidence based practice in real-time clinical practice whenever possible and speak to the implementation, progress, and outcome(s) via on-line posting of related case studies. Furthermore, students are expected to critically evaluate the degree to which the current evidence supports or conflicts with the common practice intervention. Additionally, students will critically evaluate their classmate’s cases study postings offering feedback and/or treatment suggestions based upon their experience(s) and the evidence.

DPTH.6470 PT Interventions III Lab (formerly 34.647) - Credits: 1
All physical therapy graduate courses (number 34.) are restricted to PT majors only.

DPTH.6480 Service Learning in Physical Therapy
(formerly 34.648) - Credits: 3
This three-credit course is designed to serve as a service-learning experience in the final year for doctoral physical therapy students. The course is designed to provide relevant and meaningful service opportunities for culturally competent physical therapy services with a focus on prevention, health promotion, fitness, and wellness to individuals, groups, and communities. The service learning experience will prepare students for active civic participation in a diverse society. Through the use of readings, discussion, reflection and presentations students will gain an understanding what it means to build the capacity of a community and develop the competency skills of an entry level physical therapy practitioner.

DPTH.6500 Clinical Education Experience I (formerly
34.650) - Credits: 3
A ten-week full-time, clinical experience designed to integrate basic physical therapy evaluative and treatment procedures, foster development of an autonomous professional through the synthesis and utilization of advanced academic theory in evaluation and treatment. Students are expected to use sound scientific rationale and a problem-solving approach in all aspects of patient care. Students are under the direct supervision of licensed physical therapists in general acute facilities and outpatient setting.

DPTH.6520 Clinical Education Experience II (formerly 34.653) - Credits: 3
This second, twelve-week, clinical experience designed to further promote the development of an autonomous professional as well as stimulate socialization into the profession. Students are expected to function as independently as possible using the problem-solving process as a basis for all clinical decision making. Communication, coordination, and consultation with other members of the health care team and responsibility for total client management are emphasized.

DPTH.6530 Clinical Education Experience III (formerly 34.653) - Credits: 3
This terminal, twelve-week, clinical education experience is designed as the final promotion of complete socialization and transition into the profession of physical therapy. Students are expected to function as independently as possible using problem-solving processes as a basis for all clinical decision making. Communication, coordination, and consultation with other members of the health care team and responsibility for complete patient management are emphasized.
Department of Community Health & Sustainability

The UMass Lowell Department of Community Health and Sustainability offers the following graduate programs:

- Master of Science in Health Informatics and Management
- Graduate Certificates in Health Informatics and Management

Mission

The mission of the department is to prepare individuals to become public health professionals and researchers who work to create a sustainable future. Our approach provides the foundation for the design, implementation, and evaluation of policies, programs, and technologies, with a curriculum and research focus based on the behavioral and social determinants of health. Our programs encompass the areas of Community Health, Health Promotion, Environmental Health, Occupational Health, Health Management, Health Informatics and Health Policy.

Public Health Graduate Program

Program Mission

To advance the health and wellbeing of all communities and individuals in the Commonwealth of Massachusetts and beyond through transdisciplinary:

- Education to prepare diverse public health leaders who can advance health in all policies
- Research that transforms public health science and policy
- Collaborations with diverse communities to attain the highest level of health for all people

The Department of Public Health offers the following graduate programs:

Master of Public Health (MPH)

- Option in Dietetics
- Option in Epidemiology
- Option in Social & Behavioral Sciences
- Option in Healthcare Management

Master of Science in Health Information Management (MS)

- Option in Health Informatics
- Option in Health Management

Doctor of Science in Public Health (ScD)

- Option in Occupational and Environmental Health
- Option in Epidemiology

Graduate Certificates

- Health Informatics
- Health Management
- Public Health Studies

Master of Public Health

Program Description

The Master of Public Health program is a 42-credit post-Baccalaureate program with five specialization options: Epidemiology, Healthcare Management, Nutrition, Dietetics, and Social and Behavioral Sciences. The program accepts both full and part-time students and provides students with knowledge essential to the practice of public health on a global scale. Students develop a strong foundation in public health by studying biostatistics, environmental health issues, epidemiology, health policy and management and social and behavioral determinants of health, as well as study in specialization areas so that graduates gain the expertise necessary to address some of the world’s most pressing problems.

Graduates of the MPH program will:
Analyze public health literature and apply evidence-based practices to public health issues.

Identify, quantify and then promote reduction of the harmful impacts of current and emerging technologies on health.

Address current public health challenges through multidisciplinary approaches that apply the latest scientific knowledge, collaboration, and creative problem-solving skills.

Admission Requirements

An application completed online at www.uml.edu/grad/ (https://www.uml.edu/Grad/default.aspx)

Transcripts from a completed BA or BS degree in any field, or senior-year status, with an overall GPA of at least 3.0.

Grades of C or better in required, prerequisite college-level courses. These include a minimum one semester of statistics and one semester of either biology or anatomy and physiology. Applicants who are missing prerequisites may be admitted with the provision that they meet with their advisor before or during their first semester and develop a plan of study to complete the prerequisites during the first year.

Applicants to the Nutrition option must have take undergraduate courses in Human Nutrition

Applicants to the Dietetics option must earn grades of B- or better in the following college level pre-requisite courses: Human Nutrition, Microbiology, Food Science, Medical Nutrition Therapy I and II, Nutrition and Metabolism, Biochemistry, Organic Chemistry, Statistics, Biology or Anatomy and Physiology, and Psychology or Sociology or Anthropology.

Two Letters of recommendation from individuals able to judge an applicant’s readiness for graduate study.

A statement of purpose, typically a 1-2 page document providing information about the applicant’s future plans, a description of how the MPH degree fits into these plans and evidence of an applicant’s readiness for graduate study.

GRE scores are NOT required Master of Public Health program applications.

For International Applicants

English proficiency testing including one of the following: TOEFL minimum 79IELTS minimum 6.5Duolingo minimum 105

Transcripts from colleges outside the United States must be certified by a credentialing agency such as WES (www.wes.org) or CED (www.cedevaluations.com). To receive prerequisite credit for undergraduate courses in statistics, biology or anatomy and physiology, the document must be a course-by-course certification, not simply a general summary evaluation of a degree program.

All other materials required for a completed graduate application package as defined by the Graduate Admissions Office.

Application Information

Applications are considered on a rolling basis for the Fall (starting in September), Spring (starting in January) and Summer (starting in May) semesters.

Programs in Epidemiology, Healthcare Management, Nutrition, and Social and Behavioral Sciences can be full time (9 credits or more) or part-time (fewer than 9 credits).

Dietetics

The Master of Public Health in Dietetics is intended for students who want to become Registered Dietitians (RDs). The dietetics option is an accredited Coordinated Program in Dietetics, that combines the academic and supervised practice experience to qualify graduates to become RDs.

Degree Pathway (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
Epidemiology

Epidemiologists are critical to the identification of public health hazards, the evaluation of health systems data. Epidemiology and the closely related field of biostatistics are core disciplines of public health and there continues to be a strong need for MPH professionals with expertise in these fields for both public and private health programs. The goal of this specialization is to produce practitioners who have a solid grasp of the fundamental principles of epidemiology and health statistics including study design, data analysis, assessment of bias, control of confounders and exposure assessment.

Field epidemiology experience will be provided through the practicum experience an summer internships, with public and private sector health agencies. Examples include collaborations with the Massachusetts and New Hampshire Departments of Public Health, town and city health department and regional health departments and regional hospitals.

Social & Behavioral Sciences

Health Promotion is the process of applying social and behavioral science principles to education and environmental change that empowers individuals and groups to take control of and improve their own health. MPH Specialists combine knowledge of social and behavioral sciences to create and carry out successful public health interventions to promote population health. The goal of this option is to educate practitioners who have a broad foundation of the fundamental principles of public health with a focus on program planning and evaluation.

The 6-credit MPH practicum provides students focusing on population health with applied experience in health promotion and disease prevention. Examples include collaborations in planning, implementing and evaluating public health campaigns at federal agencies, state and local health departments, hospital settings, community health centers, social service agencies and non profit public health organizations.

Nutrition

Public Health Nutrition specialists examine the relationship of nutrition with health problems including obesity, chronic diseases, malnutrition, food insecurity and nutritional deficiencies. Public Health Nutritionists provide nutrition education, conduct research, help to develop health and wellness programs, and deliver many other nutritional services to individuals and populations. Students in the Nutrition option of the MPH program advance their knowledge and skills through a program that emphasizes a broad background in public health and specialized education in nutrition.
Master of Science in Health Information Management

Program Objectives

At the local, regional and national level, our healthcare system confronts new challenges in coping with the many changes in technology, information systems, financing and management. For many health industry professionals seeking career advancement, a Masters Degree is often required. Moreover, according to the Bureau of Labor Statistics, the employment of medical and health services managers is predicted to grow much faster than average through 2022.

The Health Information Management (HSHIM) program predominantly enrolls mid-career professionals working within health provider and other health-related organizations. Many students complete a Graduate Certificate before seeking admission to the Masters Degree program, and the Certificate courses are accepted as credits toward the Masters Degree.

UMass Lowell is one of the largest accredited online education providers in New England. The program provides a more accessible program of study for busy professional students with a flexible opportunity to expand their educational preparations in the area of Health Information Management.

Admission Requirements

1. Official transcript indicating graduation from an accredited baccalaureate institution.
2. Three letters of recommendation addressing academic ability and professional performance.
3. A page-length Statement of Purpose indicating career plans, interests and objectives in pursuing a graduate degree.
4. A professional resume.
5. Acceptable scores on the Graduate Record Examination (GRE). If a student has already completed an HSHIM Graduate Certificate program with a grade point average of 3.5 or better, the GRE is not required.
6. TOEFL scores must be submitted if the applicant is a citizen of a non-English speaking country and has not earned an academic degree in the United States. (Minimum score: 79).

Although a background in health is not required for admission, applicants with significant health industry experience are given preference when program capacity is limited. For other applicants, ones academic record and professional work experience are especially important. Applications can be submitted and evaluated at any time. We nevertheless recommend that those seeking admission for the Fall semester have applications complete by May 15, and that those seeking admission for the Spring semester have applications complete by December 15. All application materials go to Graduate Admissions.

Degree Requirements

Thirty-six credits (eleven 3-credit courses, plus a 3-credit Capstone Project) are required to obtain the Masters Degree. The specific course requirements are indicated below. Some course substitutions may be allowed based on prior academic and work experience.

MS - Health Information Management Program:

Core Requirements: The Following 9 courses are required:

- PUBH.5020 (https://www.uml.edu/catalog/courses/PUBH/5020)
  Organizational Behavior in Healthcare
- PUBH.5060 (https://www.uml.edu/catalog/courses/PUBH/5060)
  Quant. Methods in Healthcare Management
- PUBH.5110
Healthcare Finance

• PUBH.5120

Operations Analysis and Quality Improvement

• PUBH.5140

Healthcare Management

• PUBH.5310

Health Informatics

• PUBH.6160

Law and Ethics in Healthcare

• PUBH.6250

Health Policy

• PUBH.7330

Capstone Project

Health Informatics Concentration:

Select 3 Electives among the following, in consultation with advisor.

• PUBH.6070

Healthcare Information Systems

• PUBH.6320

Health Information Systems Planning

• PUBH.6330

Healthcare Database Design

• PUBH.6350

Healthcare Project Management

Capstone Project Requirement

Near the end of their Masters Degree program, students register for the Capstone Project and complete an independent study under faculty supervision. The Capstone Project applies concepts and skills learned in the program, and culminates in a substantial business-type report. Many students complete a Capstone related to their work in the field. For students who don’t work in healthcare, Capstone internships can also be
arranged.

For General Questions or Program-Specific Questions
Sandra Guy, MPA, RHIA, CCA, CHPA
mailto:sandra_guy@uml.edu
Visiting Professor - Department of Public Health
Phone: 978-934-5437

Graduate Certificate Programs in Health Informatics and Management

HI+M Certificate Requirements

The Health Informatics and Management (HI+M) program offers four-course Graduate Certificates in two different areas:

    Health Management
    Health Informatics

Many students complete one of these Certificates before seeking admission to the HI+M Masters degree program, as the Certificate courses are accepted as credits toward the Masters degree. Moreover, students who complete a Graduate Certificate with a grade point average of 3.5 or better are not required to take the Graduate Record Exam in applying for admission to the MS program.

UMass Lowell is one of the largest accredited online education providers in New England. As developed under a blended learning grant from the Alfred P. Sloan Foundation and its Sloan-C initiative, the HI+M program offers graduate studies in a new blended format that offers the best of both worlds combining face-to-face and online classes providing a more accessible program of study for busy healthcare and IT professionals.

Admission Requirements

1. Official transcript indicating graduation from an accredited baccalaureate institution.
2. A one-page statement of purpose indicating career plans, interests and objectives in pursuing a graduate degree.
3. A professional resume.
4. TOEFL scores must be submitted if a citizen of a non-English speaking country and have not earned an academic degree in the United States (Minimum Score: 79).

Although a background in health is not required for admission, applicants with significant health industry experience are given preference when program capacity is limited. For other applicants, one’s academic record and professional work experience are especially important. Applications can be submitted and evaluated at any time. We nevertheless recommend that those seeking admission for the Fall semester have applications complete by May 15, and that those seeking admission for the Spring semester have applications complete by December 15. All application materials go to Graduate Admissions.

Health Management Certificate

The Health Management Certificate is offered primarily as a continuing education opportunity for health industry professionals interested in pursuing career advancement. It teaches core skills required in healthcare management and helps students gauge interest and prospects for continuing with a full 12-course MS program.

Required Courses:

- PUBH.5110
  Healthcare Finance
- PUBH.5140
  Healthcare Management

Elective Courses (choose two):

- PUBH.5060
  Quantitative Methods in Health Management
- PUBH.5020
  Organizational Behavior in Healthcare
- PUBH.5310
  Health Informatics
- PUBH.6070
  Healthcare Information Systems
- PUBH.5120
  Operations Analysis and Quality Improvement
- PUBH.5150
Health Informatics Certificate

The Health Informatics Certificate is primarily meant to provide healthcare professionals with the requisite skills and understanding required to support health IT initiatives where they already work.

Required Courses:

- PUBH.5310
  (https://www.uml.edu/catalog/courses/PUBH/5310)
  Health Informatics

- PUBH.6070
  (https://www.uml.edu/catalog/courses/PUBH/6070)
  Healthcare Information Systems

Elective Courses (choose two):

- PUBH.5060
  (https://www.uml.edu/catalog/courses/PUBH/5060)
  Quantitative Methods in Healthcare

- PUBH.5150
  (https://www.uml.edu/catalog/courses/PUBH/5150)
  Applied Health Economics

- PUBH.6160
  (https://www.uml.edu/catalog/courses/PUBH/6160)
  Law and Ethics in Healthcare

- PUBH.6160
  (https://www.uml.edu/catalog/courses/PUBH/6160)
  Applied Health Economics

- PUBH.6250
  (https://www.uml.edu/catalog/courses/PUBH/6250)
  Health Policy

- PUBH.5270
  (https://www.uml.edu/catalog/courses/PUBH/5270)
  Planning and Marketing in Healthcare

- PUBH.6350
  (https://www.uml.edu/catalog/courses/PUBH/6350)
  Healthcare Project Management

- PUBH.6350
  (https://www.uml.edu/catalog/courses/PUBH/6350)
  Healthcare Project Management

- PUBH.6380
  (https://www.uml.edu/catalog/courses/PUBH/6380)
  Strategic Planning in Healthcare and HIT

- PUBH.6390
  (https://www.uml.edu/catalog/courses/PUBH/6390)
  Electronic Health Record Systems

- PUBH.6380
  (https://www.uml.edu/catalog/courses/PUBH/6380)
  Strategic Planning in Healthcare and HIT

- PUBH.6390
  (https://www.uml.edu/catalog/courses/PUBH/6390)
  Electronic Health Record Systems

For General Questions

Sandra Guy VanAmburgh
Department of Public Health
Zuckerberg College of Health Sciences
Email: Sandra_GuyVanAmburgh@uml.edu
Phone: 978-934-5437

Graduate Certificate in Public Health Studies

Overview:

The field of public health is ever changing and expanding. It
has played a major role in promoting the health of the nation, the world and in extending life expectancy. It is expected that the growing demand for public health professional will confront a critical shortage in the near future. A four-course, 12 credit Graduate Certificate Program in Public Health Studies is intended for individuals with diverse health, natural science and social science backgrounds who are interested in careers in public health. The courses offered in the certificate program are foundation courses in the MPH program. The certificate is expected to serve as a conduit into the MPH Program for students who are not yet ready for application/admission. The certificate program will enable students to decide whether they should apply to a 42 credit MPH program. The graduate certificate will also provide students in the health care field with the additional course work to advance careers in the area of public health.

Upon acceptance into the MPH program, the 12 credits from the Graduate certificate in Public Health with a course grade of 3.0 pr higher may be transferred into the MPH degree program.

**Admission Requirements:**

- Baccalaureate degree from an accredited institution with a minimum GPA of 3.0
- Completed Certificate Application form
- Official Transcript from the baccalaureate institution
- Completed undergraduate courses in Statistics and either Biology or Anatomy & Physiology with grades of C or above.
- Citizens of non-English speaking countries who have never earned an academic degree in the United States must submit TOEFL scores.

For more information please contact: Leland Ackerson, Ph.D. at Leland_Ackerson@uml.edu.

**Required Courses (3 Credits):**

- PUBH.5750
  (https://www.uml.edu/catalog/courses/PUBH/5750)
  Epidemiology and Biostatistics

**Elective Courses (Choose Three 3-credit courses - total of 9 credits):**

- PUBH.5021
  (https://www.uml.edu/catalog/courses/PUBH/5021)

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**Doctor of Science in Public Health**

The UMass Lowell Department of Public Health offers a doctoral program that focuses on public health, encompassing occupational and environmental health and epidemiology.

**Admission Requirements**

Doctoral training is built upon the substantial didactic training gained in the masters degree programs. To be eligible for admission to a doctoral program, an applicant will need to demonstrate adequate preparation by providing the following:

- A masters degree in public health, epidemiology, quantitative sciences, or a related field.
- Exceptional academic record, supported by undergraduate and graduate transcripts (generally considered to be a minimum GPA of at least 3.3 and 3.5 in quantitative sciences)
- High GRE scores (generally a minimum combined score of 290).
- A recent resume that indicates readiness to begin a doctoral degree program
- A minimum of three letters of reference attesting to the ability to succeed in a doctoral program including capacity for conducting advanced research; creative talent; communication in English; promise of a successful career; and potential to work as a research assistant.
A 1-3 page written statement of purpose. This statement must address the motivation for pursuing a doctoral program, long term career goals, relevant work history that provides evidence of skills in scientific research and direct teaching or research experience. The statement of purpose must provide an explanation of your research interests that you intend to pursue in your doctoral degree and what additional scientific contribution you hope to make to this field. The statement of purpose must include a list of 1-5 Tenure Track faculty members in the Zuckerberg College of Health Sciences (https://www.uml.edu/Health-Sciences/faculty/) who you would like to have as an advisor and doctoral dissertation committee chair. Tenure Track faculty members can be identified through the titles of Assistant Professor, Associate Professor, or Professor. Those individuals with the titles of Clinical, Research, Teaching, or Emerita/us faculty with proper credentials may serve on a doctoral committee, but they are not eligible to serve as the chair of a doctoral committee.

Discussions and visits with potential faculty advisors are encouraged and an interview may be required.

For International Applicants

- English proficiency testing including one of the following: TOEFL minimum 79, IELTS minimum 6.5, Duolingo minimum 105
- Transcripts from colleges outside the United States must be certified by a credentialing agency such as WES (www.wes.org) or CED (www.cedevaluations.com).

Admission Deadlines

Applications are accepted once per year for entrance during the fall semester. Departmental consideration of applications will begin on December 15th. The deadline for consideration for the upcoming fall semester is January 31. Applications received after January 31 will be considered for the following admissions cycle.

Academic Advisor

For a doctoral candidate, the primary responsibility for evaluating progress will rest with the students academic advisor along with the Dissertation Committee. Upon matriculation, the student will be assigned an advisor in conjunction with the Graduate Student Coordinator and the student. The advisor must be from among the faculty of the Zuckerberg College of Health Sciences. The advisor will assist the student in complying with all the university requirements in achieving eligibility for the degree, including selection of courses and aiding in the development of the dissertation.

Requirements for the Doctoral Degree

Degree requirements include: 15 - 24 credit hours of courses beyond the master’s degree plus 12 - 21 credits of dissertation research for a total of 36 post-master’s credit hours. A student with a masters degree from another institution will need to show knowledge in all subject areas required for the equivalent Occupational and Environmental Health or Public Health masters degree from the University of Massachusetts Lowell. Courses will be selected to ensure each student has met all the major master’s competencies and is adequately prepared in research methods and background needed for their dissertation. At least six credits of advanced research methods electives and 1 semester of Work in Progress Seminar (PUBH.6090) are required of all doctoral students. There is no language requirement, but each major area may require additional advanced research methods courses. The student will work with a doctoral program advisor to propose a set of courses to meet the requirements and to prepare a preliminary thesis proposal. Following completion of all required course work, the student will be eligible to take a written qualifying examination. The exam will be designed to test the knowledge in the major field. Upon meeting the course and written exam requirements, the student must pass an oral qualifying exam based on their written dissertation proposal.

Doctoral Dissertation

The doctoral dissertation will be based on a substantial body of original research carried out by the candidate. The selection of the research topic will be the responsibility of the student in consultation with the academic advisor. The student and advisor will develop a Dissertation Committee of at least 3 faculty members, with at least two from the Zuckerberg College of Health Sciences, one of whom must be from the Department of Public Health. The committee will review the student’s progress and approve the dissertation. The dissertation will, in general, be in the form of three publishable manuscripts and will include an appropriate literature review and overview of the dissertation research. At a minimum, one
of these manuscripts must be accepted by a peer-reviewed journal before graduation. The student is required to give an oral defense of the dissertation before the Committee and other faculty members. The defense is open to the public.

Course Requirements

The Public Health Doctor of Science program requires a minimum of 12 dissertation credits, a minimum of 15 course credits, and a minimum of 36 total credits beyond any previous graduate degree. Courses can be waived if the equivalent content has been completed previously in the master degree program. Note that the courses, and not the equivalent number of credits, may be waived. Even if course requirements are waived due to content from previous coursework, credit requirements still must be completed.

Public Health: Epidemiology

Examples of areas of research in which doctoral work is encouraged include: occupational epidemiology, environmental epidemiology, nutritional epidemiology, physical activity epidemiology, social epidemiology, and health services epidemiology.

- Degree Pathway for the Epidemiology Track
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)

Public Health: Occupational and Environmental Health (currently not accepting new candidates)

Likely areas of research include: Exposure science and biomarkers, exposure hazards and controls in health care, indoor air & healthy buildings, exposure hazards and controls in nanotechnology, sampling & analytical methods for airborne contaminants, exposure assessment for epidemiology, noise hazard assessment and control, toxic use reduction or integration of sustainable production and occupational hygiene, exposure hazards and controls in construction.

- Degree Pathway for the Occupational and Environmental Health Track
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)(currently not accepting new candidates)

Master of Science in Work Environment - Professional Science Master’s (PSM) Options

Applications are no longer being accepted for the PSM in Work Environment program.

Professional Science Masters Options in Work Environment

The Work Environment Profession Science Master’s Options are 36 credits, interdisciplinary, and problem-focused. Graduates learn to recognize, evaluate and control occupational and environmental health and safety issues. Technical preparation in such fields as statistics, toxicology, aerosol physics, analytical chemistry, and biomechanics is taught with direct applications to the identification, control and elimination of health and environmental hazards. Students also learn the dynamics of the workplace - the sociology, political science and economics of systems of production.

The Work Environment PSM options follow the same courses as the current masters degree programs with the addition of a one credit internship for students who do not have substantial professional work experience in their field.

Professional Science Master’s Option - Occupational & Environmental Hygiene
Professional Science Master’s Option - Ergonomics & Safety
Professional Science Master’s Option - Epidemiology
Professional Science Master’s Option - Cleaner Production & Pollution Prevention

Admission Requirements

The admission requirements are the same as in the current masters degree program:

- Baccalaureate degree from an accredited university or college with a recommended GPA of 3.0 or better.
- Graduate Record Examination Aptitude Test (GRE). For students who graduated from a university in a country where English is not the official language, TOEFL scores should be at least 550 (paper-based), 213 (computer-based), or 79 (internet-based).
- Documentation of good writing ability.
- Prerequisite technical courses (with a grade of C or better) must include: For the Occupational and Environmental Hygiene Program, one semester courses in mathematics (calculus or statistics preferred), general chemistry, organic chemistry, biology and physics. For the Ergonomics & Safety program, one semester courses in mathematics (calculus preferred), biology and physics. For the Epidemiology and Cleaner Production & Pollution Prevention...
Prevention programs, one semester courses in mathematics (statistics preferred) and human biology. The faculty committee will evaluate each applicant's application materials including GPA, GRE, TOEFL, experience, recommendations, and essay. Meeting minimum requirements does not guarantee acceptance. In some cases, applicants who do not meet all entry requirements may be admitted if they have completed 9 credits of Work Environment courses, all with a B+ or better as a non-matriculated student.

Curriculum

STEM Courses (24 credits total)

**STEM Required Courses for ALL PSM options (9 Credits):**

- [PUBH.5030](https://www.uml.edu/catalog/courses/PUBH/5030) (Toxicology and Health (3 credits))
- [PUBH.5250](https://www.uml.edu/catalog/courses/PUBH/5250) (Introduction to Industrial Hygiene and Ergonomics (3 credits))
- [PUBH.5750](https://www.uml.edu/catalog/courses/PUBH/5750) (Introduction to Epidemiology (3 credits))

**STEM Required SPECIALIZATION Courses (15 Credits)**

**Occupational & Environmental Hygiene**

- [PUBH.6160](https://www.uml.edu/catalog/courses/PUBH/6160) (Exposure and Risk Assessment (3 credits))
- [PUBH.5400](https://www.uml.edu/catalog/courses/PUBH/5400) (Occupational Safety Engineering (3 credits))
- [PUBH.6140](https://www.uml.edu/catalog/courses/PUBH/6140) (Evaluation of Work Environment Hazards (3 credits))
- [PUBH.6150](https://www.uml.edu/catalog/courses/PUBH/6150) (Solutions to Work Environment Hazards (3 credits))
- [PUBH.6190](https://www.uml.edu/catalog/courses/PUBH/6190) (Measurement of Chemical Exposures 5 (3 credits))

**Ergonomics and Safety**

- [PUBH.5310](https://www.uml.edu/catalog/courses/PUBH/5310) (Occupational Biomechanics (3 credits))
- [PUBH.5400](https://www.uml.edu/catalog/courses/PUBH/5400) (Occupational Safety Engineering (3 credits))
- [PUBH.6380](https://www.uml.edu/catalog/courses/PUBH/6380) (Methods in Work Analysis (3 credits))
- Plus 2 STEM electives (6 credits)

**Cleaner Production/Pollution Prevention**

- [PUBH.5570](https://www.uml.edu/catalog/courses/PUBH/5570) (Toxic Use Reduction (3 credits))
- [PUBH.6100](https://www.uml.edu/catalog/courses/PUBH/6100) (Exposure Assessment (3 credits))
- [PUBH.6590](https://www.uml.edu/catalog/courses/PUBH/6590) (Cleaner Production Principles (3 credits))
- Plus 2 STEM electives (6 credits)

**Epidemiology**

- [PUBH.6820](https://www.uml.edu/catalog/courses/PUBH/6820) (Applied Epidemiologic Methods (3 credits))
- [PUBH.6100](https://www.uml.edu/catalog/courses/PUBH/6100) (Exposure Assessment (3 credits))
- [MATH.5910](https://www.uml.edu/catalog/courses/MATH/5910) (Linear Modeling & Regression Methods (3 credits))
• PUBH.6870
  (https://www.uml.edu/catalog/courses/PUBH/6870)
  Quantitative Models for Public Health (3 credits)
• PUBH.6890
  (https://www.uml.edu/catalog/courses/PUBH/6890)
  Advanced Regression Modeling (3 credits)

(Other Graduate level courses outside of the Department of Work Environment may be chosen as STEM electives with advisory committee approval.)

PLUS courses (9 credits total)
PLUS Required Course for all PSM Options (3 credits):
• PUBH.5000
  (https://www.uml.edu/catalog/courses/PUBH/5000)
  Analytical Context of the Work Environment

PLUS BUSINESS SPECIALIZATION Courses (6 credits total):
Occupational & Environmental Hygiene
• PUBH.6510
  (https://www.uml.edu/catalog/courses/PUBH/6510)
  Work Environment Policy and Practice (3 credits)
• 1 PLUS elective (3 credits)

Ergonomics and Safety
• PUBH.5420
  (https://www.uml.edu/catalog/courses/PUBH/5420)
  Human Factors (3 credits)
• 1 PLUS elective (3 credits)

Cleaner Production/Pollution Prevention
• PUBH.5500
  (https://www.uml.edu/catalog/courses/PUBH/5500)
  Environmental Law & Policy (3 credits)
• PUBH.6510
  (https://www.uml.edu/catalog/courses/PUBH/6510)
  Work Environment Policy and Practice (3 credits)

Epidemiology
• 2 PLUS electives (6 credits)

Approved PLUS Elective Courses:
Business of Work Environment:
• PUBH.5420
  (https://www.uml.edu/catalog/courses/PUBH/5420)
  Human Factors (3 credits)
• PUBH.5500
  (https://www.uml.edu/catalog/courses/PUBH/5500)
  Environmental Law & Policy (3 credits)
• PUBH.6400
  (https://www.uml.edu/catalog/courses/PUBH/6400)
  Macroeconomics (3 credits)
• PUBH.6410
  (https://www.uml.edu/catalog/courses/PUBH/6410)
  Principles of Accident Causation and Prevention (3 credits)
• PUBH.6430
  (https://www.uml.edu/catalog/courses/PUBH/6430)
  Healthy Work Organization Design (3 credits)
• PUBH.6510
  (https://www.uml.edu/catalog/courses/PUBH/6510)
  Work Environment Policy and Practice (3 credits)
• PUBH.6540
  (https://www.uml.edu/catalog/courses/PUBH/6540)
  Work, Technology and Training (3 credits)

Business Fundamentals:
• MKTG.5010
  (https://www.uml.edu/catalog/courses/MKTG/5010)
  Marketing Fundamentals (3 credits)
• MGMT.5010
  (https://www.uml.edu/catalog/courses/MGMT/5010)
  Organizational Behavior (3 credits)
• ENTR.6500
  (https://www.uml.edu/catalog/courses/ENTR/6500)
  Innovation and Emerging Technology (3 credits)
• MGMT.6300
  (https://www.uml.edu/catalog/courses/MGMT/6300)
  New Product Development (3 credits)
• MKTG.6300  
  (https://www.uml.edu/catalog/courses/MKTG/6300)  
  Market Research for Entrepreneurs (3 credits)
• MGMT.6350  
  (https://www.uml.edu/catalog/courses/MGMT/6350)  
  Project Management (3 credits)
• FINA.6400  
  (https://www.uml.edu/catalog/courses/FINA/6400)  
  Financing Innovation and Technical Ventures (3 credits)

(Additional PLUS course choices will be available from a list of approved courses provided by the PSM Coordinating Committee to include additional qualified courses from the College of Management and other relevant departments).

Internship (1 credit)

A Professional Internship is required for students in this program and is expected to be a minimum of 350 hours and have 3-6 month duration. The internship is designed to provide students with an opportunity to obtain real-world experience in business, government agencies, non-profit organizations or research laboratories. Internships or research project experiences will typically take place in industries and government agencies. Research experience can also be obtained at the University or other Research Centers.

To be eligible for the Professional Internship, students will be required to have 1) completed a minimum of 12 credits of STEM courses, 2) completed a minimum of 6 credits of PLUS courses, 3) attained an overall GPA of 3.0 or higher and 4) permission of the Graduate Coordinator. The internship will typically be undertaken in the summer between the first and second years, with continuation into the final year in some cases.

Students that have previous or current professional employment experience may request to waive the internship requirement, however, in these cases, a new project experience will be required that adds to the students current set of skills.

Capstone Experience - Required for all PSM Options (2 credits)

PUBH.6000  
  (https://www.uml.edu/catalog/courses/PUBH/6000)  
  (0 credits)  
and PUBH.6020  
  (https://www.uml.edu/catalog/courses/PUBH/6020)  
  (2 credits)  
are the courses for the Work Environment Capstone. The capstone courses are taken in the second (final) year of the program with PUBH.6000  
  (https://www.uml.edu/catalog/courses/PUBH/6000)  
taken in the Fall and PUBH.6020  
  (https://www.uml.edu/catalog/courses/PUBH/6020)  
in the spring semester.

All students will be required to submit a final written report and give oral presentation on their internship work during the capstone course in their final semester. All post-internship students will participate in this capstone class, as will all professionally employed students who have had the internship waived.

Public Health Degree Pathways

Master of Public Health (MPH)

• Option in Dietetics  
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
• Option in Epidemiology  
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
• Option in Social &Behavioral Sciences  
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
• Option in Healthcare Management  
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
• Option in Nutrition  
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)

Master of Science in Health Information Management (MS)

• Option in Health Informatics  
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
• Option in Health Management  
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)

Doctor of Science in Public Health (ScD)

• Option in Epidemiology  
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)

Dietetics

Mission

The mission of the MPH Dietetics option in public health nutrition is to promote public health nutrition by preparing
Outcomes

We prepare graduates to:

- Practice as successful Registered Dietitians uniquely trained to address the health and nutrition needs of diverse populations.
- Act as critical members of the health care team.
- Design and deliver nutrition and wellness focused preventive services in community settings.
- Advocate for policy and programmatic initiatives. Lead research in disease prevention and health promotion.
- Coordinate and implement nutrition policies and programs.

Epidemiology

The Epidemiology focus area of the MPH will prepare graduates to:

- Conduct etiologic research for the wide array of different diseases:
- Design and operate surveillance systems and other databases gathering data on health and illness, as well as on risk factors and health behaviors.
- Participate as team members in the design and conduct of disease prevention and health promotion programs.

Social & Behavioral Sciences

The Social & Behavioral Sciences program of the MPH program prepares graduates to:

- Find, understand and apply relevant public health literature
- Design and implement programs that improve public health by fostering change in individual behaviors, environmental conditions and social policy
- Evaluate public health programs through data collection and analysis
- Engage individuals and communities in discussion and decision making to clarify shared public health goals

Healthcare Management

Graduates of the Healthcare Management Option in MPH program will be prepared to:

- Develop, implement and evaluate public health initiatives
- Assume “hands” management of public health programs and organizations.
- Provide leadership as a thoughtful, analytical and ethical manager within the public health community.
- Support increased efficiency, effectiveness and accountability within the public health workplace.

Nutrition

The goals of the MPH Nutrition option are to prepare health and nutrition professionals to:

- Identify and prevent risks that contribute to the development of malnutrition;
- Develop strategies and policies to improve food security and reduce obesity;
- Develop programs to improve the nutritional status of diverse population groups;
- Develop effective strategies for advocating for improved nutrition;
- Develop and manage wellness programs to promote healthy eating and chronic disease prevention;
- Apply population-based research findings to the development and implementation of nutrition policies and programs in the United State and internationally.
PUBH.5000 Analytical Context of the Work Environment (Formerly 19.500) - Credits: 3

An overview course to be taken in the first semester in the Master’s program. Case studies are used to introduce students first to the hazard analysis methods, and second, to the prevention methods of each of the department’s sub-disciplines. Interconnections between exposures and illness/accident development are reviewed at three levels: individual, work organization and society.

PUBH.5010 Social and Behavioral Determinants of Health (Formerly PUBH 501) - Credits: 3

This course introduces core concepts of social and behavioral determinants of health and provides a foundation for the analysis of social, political and economic influences on health and their role in contributing to health inequities. The core functions of public health and essential services are discussed as well as the history of public health, its philosophy and values. Upstream and downstream reforms to addressing fundamental determinants are evaluated. The influence of behavioral and psychological factors on health and disease are analyzed.

PUBH.5020 Organizational Behavior in Health Care (Formerly 32.502) - Credits: 3

This course reviews the organizational structure of healthcare facilities and the behavior of individuals within them. Students analyze the role of administration, human resources, providers and other support staff and apply organizational, behavioral, and social science practice and theory, to the operations of the healthcare organization. Comparison is made between healthcare and non-healthcare types of industry to highlight the unique characteristics of healthcare workers. An emphasis is also made on leadership styles, organizational culture, and change management within the healthcare organization.

PUBH.5021 Public Health Policy (Formerly PUBH 502) - Credits: 3

The course focuses on expanding students’ knowledge and skills for developing and evaluating contemporary public health policy in the United States and international settings. Students will gain information about the current US national health care system as it relates to emergent public health topics and priorities in the US and globally. This course will focus on competencies for designing, implementing, evaluating and advocating for evidence-based policy, program and practices.

PUBH.5030 Toxicology and Health (Formerly 19.503) - Credits: 3

The course introduces students to the basic principles and mechanisms of toxicology with a focus on occupational and environmental health. Concepts of dose, dose rate, dose-response analysis, and test systems are presented in the context of the toxicology of major organ systems and toxic agents. The course covers toxicology of major organ systems (respiratory, dermal, immunologic, cardiovascular, neurological, reproductive systems, and cancers), major classes of contaminants (airborne particles, respirable fibers, vapors/gases, heavy metals, organic solvents, pesticides, sensitzers, emerging contaminants), and their mechanisms of action. A review of the necessary human biology and biochemistry of life is also provided.

PUBH.5050 Qualitative Research Methods (Formerly 19.505) - Credits: 3

This course explores and examines non-quantitative methodologies in the social sciences and political economy. The course will discuss hypothesis generation, survey design, research problem design, case studies, ethnographic methods, participatory research methods, content analysis, interviewing techniques and key informant interviews. Doctoral students in work environment policy are particularly urged to take this course. The course will be offered in collaboration with the Department of Regional Economic and Social Development as course 57.592.

PUBH.5060 Quantitative Methods in Health Management (Formerly 32.506) - Credits: 3

This course explores analytic methods that can be used to improve the decision making of management, clinicians and others within the healthcare industry. Students learn the conceptual foundations of quantitative analysis and common methods used in supporting decision-making: developing evidence-based practices; analyzing data and testing hypotheses. Students also learn how to use industry-standard data analysis software applications, statistical packages and common applications for the development and reporting of analytic findings.

PUBH.5061 Environmental Health (Formerly 19.506) - Credits: 3

This environmental health course explores the links between human activities and environmental systems and examines how these interactions can impact human health. The course is designed to provide knowledge and skills necessary to understand how human and industrial activities such as population growth, methods of food production, pollution of the air and water, waste, the built environment, toxic substances, pest control, and global climate change can result in human diseases and impact the environment. Understanding the links between human activities and environmental systems is essential to developing effective prevention strategies and
building sustainable communities.

PUBH.5070 Leadership and Management in Public Health - Credits: 3

The purpose of this course is to enhance the students' ability to effectively build and lead high-performing Public Health organizations. This course will integrate fundamental principles from the behavioral and social sciences to provide students with a coherent set of strategies and techniques to effectively collaborate with internal external stakeholders as well as to influence meaningful, sustainable change. This course will also provide students opportunities to self-reflect on their own leadership styles and develop growth plans.

PUBH.5080 Principles and Practices of Biological Safety (Formerly 19.508) - Credits: 3

This course is designed to provide an overview of hazard recognition, evaluation and control of potentially hazardous biological materials. This introduction to the field will cover the potential risks of working with biological materials, the use of engineering, work practices and administrative measures for hazard control and regulations governing the area of biosafety. Requires working knowledge of Microbiology, and permission of Instructor.

PUBH.5100 Fundamentals of Occupational Health (Formerly 19.510) - Credits: 3

This course provides an overview of key topics in the field of occupational health and safety including physical agents and biological hazards. The measurement and control of various physical agents are covered, including noise, ionizing and non-ionizing radiation, heat stress and extreme environments. Students will understand the health risks from biological hazards and blood borne pathogens, as well as the regulations and methods of prevention. They will also gain knowledge of hazard communication regulations, material safety data sheet and how to research chemical hazards.

PUBH.5110 Health Care Finance (Formerly 32.511) - Credits: 3

Provides broad exposure to the concepts and practices of healthcare finance and healthcare financial management. Teaches a practical understanding of basic healthcare financial issues, financial reporting and analysis, and provider payment structures. The course enables students to read, analyze and use healthcare financial information in today's healthcare environment.

PUBH.5120 Operations Analysis for Quality Improvement (Formerly 32.512) - Credits: 3

This course focuses on a multi-disciplinary approach to operations analysis, process redesign and quality improvement in health care. Focus is placed on the tools, methods and processes used for improving work flow processes, patient safety and performance in a variety of health care settings. Students study the history, development and principles of quality improvement in healthcare.

PUBH.5140 Healthcare Management (Formerly 32.514) - Credits: 3

This course provides a framework for addressing common issues faced by management within a healthcare organization. Students are provided with an overview of how healthcare institutions are organized and governed, the unique roles of management, clinical staff, support staff, and human resources in the healthcare setting. Students also learn the management systems designed for efficient and effective operations.

PUBH.5141 Aerosol Science (Formerly 19.514) - Credits: 3

Basic properties of airborne particles, with particular regard to properties important to health. Includes basic properties of gas-borne particles, uniform particle motion, particle collection mechanisms, filtration, particle sampling, respiratory deposition, particle statistics, electrical properties, and optical properties. Course includes lectures and laboratory.

PUBH.5150 Applied Health Economics (Formerly 32.515) - Credits: 3

Students explore the economic dimensions of healthcare by considering the input, output, production and costs of producing quality healthcare which meets demand and evaluates the behavior of supply. Students consider provider payer systems and aspects relative to private and public health insurance in determining market power and competitive markets. Common economic evaluation methods are introduced to measure health service feasibility, and promote value judgment in the realm of healthcare reform and regulatory compliance.

PUBH.5160 Laboratory Environmental Health and Safety (Formerly 19.516) - Credits: 3

This course is designed to provide an overview of hazard recognition, evaluation and control in laboratory environments. This introduction to the field will cover the potential risks of working with chemicals, radioactive materials, animals and biological materials. It will also introduce the use of engineering, workpractices and administrative measures for hazard control and regulations governing the area of laboratory safety.
PUBH.5210 Introduction to Industrial Hygiene (Formerly 19.521) - Credits: 2
PUBH.5230 Introduction to Ergonomics (Formerly 19.523) - Credits: 2
PUBH.5250 Industrial Hygiene and Ergonomics (Formerly 19.525) - Credits: 3

A survey course covering introductory topics in ergonomics and industrial hygiene. Ergonomics topics include work measurement, anthropometry, biomechanics, psychosocial stress and work reorganization, special emphasis is placed on the recognition and control of work-related musculoskeletal disorders. Industrial hygiene topics will cover the identification, measurement, and control of chemical and physical hazards in the work environment including principles of air sampling and analysis, ventilation and other control technologies, and the use of personal protective equipment with special attention to respiratory and hearing protection.

PUBH.5270 Planning and Marketing in Healthcare (Formerly 32.527) - Credits: 3

Students learn the fundamentals of planning and marketing and how they are applied to the healthcare system. Students use common tools and techniques to conduct environmental scanning, and feasibility analysis to determine if marketing goals for a new product or service meet the mission, vision and strategic plan of the healthcare organization. SMART Goals are introduced along with other campaign foundations in the development of a marketing summary and strategy for the healthcare organization.

PUBH.5300 Ergonomics and Work (Formerly 19.530) - Credits: 3

An overview of the scientific basis for design of the workplace to optimize physical and mental interaction of workers with machines, tools, and work methods. Topics include work measurement, anthropometry, biomechanics, work physiology, cumulative trauma disorder and information presentation and processing.

PUBH.5310 Health Informatics (Formerly 32.531) - Credits: 3

This course introduces healthcare professionals to the power of data and the importance of analysis. Students learn how population informatics, consumer health informatics, translational bioinformatics, and clinical research informatics are essential components in selecting the techniques and systems used for transforming clinical data into information, knowledge and improved decision-making. The past, current and future role of healthcare IT is also discussed.

PUBH.5311 Occupation Biomechanics (Formerly 19.531) - Credits: 3

The anatomical and physiological basis of human motor capabilities. Quantitative models are developed to explain muscle strength performance, motion control, physical fatigue, and acute and chronic musculoskeletal trauma, particularly static link models of lifting and other manual activities. Application to the evaluation and design of various tasks and occupations.

PUBH.5320 Occupational Biomechanics Laboratory (Formerly 19.532) - Credits: 3

A laboratory presentation of the biomechanical basis for understanding and predicting human motor capabilities using bioinstrumentation. Computerized data acquisition, electromyography and load cells for strength measurement are examples of the equipment used in this lab. Particular emphasis is placed on the evaluation of occupational activities.

PUBH.5330 Intervention Research (Formerly 19.533) - Credits: 3

This course covers the design, implementation and evaluation of interventions to reduce risk factors for poor health and related outcomes. Topics include the use of casual diagrams to identify possible intervention points; logic models for program evaluation; and design of formal evaluation research studies. Selected scientific articles will be used to illustrate topics covered in the lectures. Each student will select a public health problem of interest and develop a case study over the course of the semester.

PUBH.5400 Occupational Safety Engineering (Formerly 19.540) - Credits: 3

The purpose of this course is to introduce students to the principles of safety hazards in the work environment. This course is primarily designed to emphasize the safety aspects of the hazards at work. It begins with the historical development of occupational safety and health and progressively examines the fundamentals of recognition, measurement, evaluation, and control of occupational safety hazards.

PUBH.5420 Human Factors (Formerly 19.542) - Credits: 3

The functional processes of human systems in the workplace that affect psychosocial health and productivity. Review of associations between work design principles and effects on human well-being, learning, and performance.
perceptive, cognitive, metabolic, and social-psychologic limitations. Human-machine interactions affecting “stress” and learning at the level of individuals and of groups. Introduction to “healthy” job redesign, “conducive production”, and measurement strategies. Principles applied through practical design problems.

PUBH.5490 Sustainable Housing Development and Land Use: Policy and Practice (Formerly 19.549) - Credits: 3

Housing is fundamental to the quality of life in communities, and housing policies shape the availability of this fundamental good. This course will examine the economic, environmental, social, and cultural factors that shape housing and its sustainability. Overall housing and land use policy in the United States will be summarized, with students learning of the ways in which housing policy impacts communities, states, and regions. The course will then give students a detailed understanding of the processes through which housing is developed and the role the market, government, funders, workers, and housing consumers play in influencing the creation and development of housing. The course will highlight the ways in which current housing development policy and practices are not sustainable, and will examine more recent efforts to establish standards and practices that enhance sustainability. Students will learn how to take a housing project through the various stages, such as project conceptualization, market analysis, design, site acquisition, financing, construction, and occupancy. While the course focuses on the U.S. context, students will learn of international efforts to achieve greater sustainability. Students will learn to “healthy” job redesign, “conducive production”, and measurement strategies. Principles applied through practical design problems.

PUBH.5500 Environmental Law (Formerly 18/19.527) - Credits: 3

The large body of law, which has developed since the early 1960’s, is examined in considerable detail. Federal laws relating to the environment, particularly with the Environmental Protection Agency and the Occupational Safety and Health Acts. State and local laws and ordinances are discussed where pertinent.

PUBH.5510 Work Environment Policy and Practice (Formerly 19.551) - Credits: 3

This course provides an overview of occupational safety and health (OSHA) policy and practice. It focuses on the legal and administrative vehicles, especially the Occupational Safety and Health Administration (OSHA) and OSH Act of 1970. It demonstrates the public health and business case for safety via case studies. The course provides an analytical framework for examining social, economic, and political factors in the recognition and control of occupational hazards and a management program for identifying and preventing hazards at the worksite. The course covers national and international workplace management systems as well as business and organizational management policies to ensure safety and how these are translated to effective practice at the level of a specific worksite.

PUBH.5550 Comparative Environmental (Formerly 19.555) - Credits: 3

Human social and productive activities often harm the natural environment. Environmentally related health problems will become more prominent and put additional stress on industrial, as well as transitional and developing nations. A sustainable world is one that provides not only for environmental viability but also economic health, social justice and political participation. This course is designed to explore the dynamics and interactions of social, economic and political factors that aid or impede a community’s ability to contribute to global environmental sustainability. The course will be offered in collaboration with the Department of Regional Economic and Social Development as course 57.518.

PUBH.5570 Toxic Use Reduction (Formerly 19.557) - Credits: 3

Toxic Use Reduction (TUR) is a new approach to hazardous waste management and environmental protection. Rather than addressing chemical contamination as waste (after its generation), to be managed through permits and emission regulations, TUR focuses on chemicals while still in production. In Massachusetts, firms are required to prepare plans demonstrating how they will reduce or eliminate the use of toxic chemicals. The course is organized as a set of discussions and case studies from the real-life program.

PUBH.5590 Conflict Resolution (Formerly 19.559) - Credits: 3

This course gives students an understanding of the main issues and solutions involved in community level conflict resolution; e.g., in neighborhoods, workplaces, and other institutions. It develops students’ skills in practicing conflict resolution and/or evaluating programs in the field of dispute resolution. It is important to understand why conflict happens and how to resolve conflict.

PUBH.5750 Epidemiology and Biostatistics - Credits: 3

Epidemiology is the study of the distribution and determinants of disease in human populations, and the risk factors
associated with diseases. This course provides an introduction to epidemiology and the associated biostatistical methods that constitute the principal quantitative methods for disease prevention. Topics include: measures of disease frequency, measures of central tendency and spread, rates and risks, precision and validity, bias, simple linear regression, and the important study designs (population surveys, cohort, case-control and cross-sectional studies).

PUBH.5760 Biostatistical Programming - Credits: 3

This course is designed to provide familiarity with several types of statistical software commonly used in public health research. The course covers topics including: reading raw data and existing data sets; modifying data; combining data sets; applying basic statistical procedures; and sorting, summarizing, and printing data.

PUBH.5770 Biostatistics for Health Data - Credits: 3

This is a practical course in biostatistical methods for health research. Emphasis is placed on developing an understanding of the use and interpretation of standard biostatistical methods. Topics include probability and sampling distributions, regression and ANOVA, methods for analyzing rates and proportions, power and sample size calculations. Students will gain experience in using a statistical software package to apply and expand their data analysis skills.

PUBH.5790 Disability Outcomes and Interventions (Formerly 19.579) - Credits: 3

This course will address the epidemiology of disability outcomes through a mix of didactic presentation and critical discussion of the literature, covering both observational and intervention studies. Qualitative research methods will also be highlighted in terms of how they can enrich the study hypotheses, construct measures, etc. The first half of the course will cover observational studies of individual and environmental risk factors for disability outcomes, including features of both the workplace and the community. Then we will describe the key design features of clinical trials to evaluate interventions, again at both the individual and the organizational levels. Interspersed with lecture material, selected observational and intervention studies from the peer-reviewed scientific literature will be evaluated with respect to study design, methodologic rigor, and adequacy of statistical analysis.

PUBH.5910 Co-Op Internship CPT (Formerly 19.591) - Credits: 0-1

Practical training course for students to perform CPT. "Variable credit course, student chooses appropriate amount of credits when registering."

PUBH.5930 Directed Study (Formerly 19/31/32.593) - Credits: 1-3

PUBH.5980 Thesis Review (Formerly 19.598) - Credits: 1

PUBH.6000 Practicum/Capstone I (Formerly 19.600) - Credits: 3

This is the first course in a two-semester sequence that provides the opportunity to apply practical skills through a culminating practice experience for students in the Master’s programs in Work Environment and Public Health. The course is designed to provide students with the opportunity to examine an interdisciplinary problem in depth and propose a solution to the problem by applying technical knowledge and skills obtained in their program to a real world issue. The product will be a report and a public presentation of the project.

PUBH.6010 Practicum/Capstone II (Formerly 19.601) - Credits: 3

This is a second course in a two-semester sequence that provides the opportunity to apply practical skills through a culminating practice experience for students in the Master’s programs in Work Environment and Public Health. The course is designed to provide students with the opportunity to examine and interdisciplinary problem in depth and propose a solution to the problem by applying technical knowledge and skills obtained in their program to a real world issue. The product will be a report and a public presentation of the project.

PUBH.6030 Global Development and Health (Formerly PUBH.603) - Credits: 3

This course discusses global health efforts in relationship to human health and quality of life. Using a case methodology, this course will enable students to analyze complex health and development challenges in the less-developed world, and propose and evaluate interventions that address challenges. Topics include maternal and child health, nutrition, infectious and noninfectious diseases, natural disasters, sanitation and health inequality. Access to health care in developing and developed countries will be analyzed. The concept of positive deviance will also be explored.

PUBH.6050 Advanced Research Methods in Work Environment (Formerly 19.605) - Credits: 3

An advanced seminar focused on developing research skills needed for understanding the causes of health and safety hazards in the work environment as well as their solutions. The seminar topics will vary each semester, depending on the
research fields of the students enrolled as well as the expertise of the participating faculty members. The goal is to provide depth in theory, background literature, state of the art measurement tools, and research methods at a level appropriate to students undertaking independent research. All doctoral students are required to take two semesters of this seminar.

**PUBH.6070 Healthcare Information Systems** *(Formerly 32.607) - Credits: 3*

This course provides a broad-range overview of the healthcare information systems industry, its history, recent developments and continuing challenges, as well as a practical understanding of healthcare information systems acquisition and implementation. Topics include EMR, Data, CMS Quality Programs, Clinical Integration and health information exchange.

**PUBH.6090 Work in Progress Seminar** *(Formerly 19.609) - Credits: 1*

This seminar course provides a forum for doctoral students (and advanced master's students) to discuss research with their peers and the faculty in a supportive interdisciplinary community. Doctoral trainees from all Public Health fields are required to present their work in progress to their peers. Although all doctoral students must register for this seminar for credit in one semester during their career, they are expected to attend and present regularly while they are in the research and writing phase of their doctorate.

**PUBH.6100 Exposure Assessment** *(Formerly 19.610) - Credits: 3*

Concepts of quantification of occupational exposures (chemical and physical hazards) for purpose of correlating health effects with exposures. Topics discussed include reasons for conducting exposure assessment, sampling methods, sampling strategies (for epidemiology, compliance, control), and statistical considerations. Principles are illustrated through a series of case studies.

**PUBH.6110 Physical Properties of Aerosols** *(Formerly 19.611) - Credits: 3*

A seminar covering aspects of aerosol science not discussed in 19.514 but necessary for the completion of research projects involving aerosols. Topics covered include the electrical, thermal, and optical properties of aerosols, particle agglomeration, evaporation and condensation, and the generation and measurement of test aerosols. Course will consist of lectures and laboratory sessions.

**PUBH.6120 Exposure Data Analysis** *(Formerly 19.612) - Credits: 3*

An advanced seminar covering statistical considerations for exposure sampling and data analysis. Topics include sampling data distributions; the effects of averaging time, autocorrelation, multiple task jobs and limit of detection samples on the sampling distribution; the use of linear models to examine between and within worker variability in exposure; the determination of homogeneous exposure groups; the development of multiple regression models to predict exposure levels and evaluate exposure determinants; and methods of model development, interpretation and validation.

**PUBH.6131 Design and Evaluation Of Ventilation Systems** *(Formerly 19.613) - Credits: 3*

A seminar intended for students pursuing research involving industrial ventilation system design and evaluation. It covers material not included in 19.518, such as recent theoretical models which describe system performance, design of systems for high-temperature operation, trouble-shooting techniques, and advanced instrumentation techniques. Course consists of lectures and laboratory sessions.

**PUBH.6140 Evaluation of Work Environment Hazards** *(Formerly 19.614) - Credits: 3*

This course provides the work environment professional with a systematic method of evaluating chemical, ergonomics and work organizational hazards in the field. Basic industrial processes and their potential hazards are reviewed. Approaches for evaluation of indoor air quality are covered. Worksite surveys of hazards and control technologies and the evaluation of existing health and safety programs are implemented through a series of workplace walkthrough visits in a variety of industries. Team work skills are developed and utilized to produce professional final reports and presentations that cover rankings of worksite hazards and recommendations.

**PUBH.6150 Solutions for Work Environment Hazards** *(Formerly 19.615) - Credits: 3*

Techniques for controlling exposure to airborne contaminants. Basic controls include substitution, ventilation, isolation, administrative controls, and personal protective equipment. Special focus is placed on Toxic Use Reduction (TUR) and Pollution Prevention strategies.

**PUBH.6160 Law and Ethics in Healthcare** *(Formerly 32.616) - Credits: 3*

This course presents an overview of legal and ethical issues facing managers and providers in health care. It provides
students with a foundation of health law and ethics and reviews health care legal and ethical situations and dilemmas. The goals are to provide students with practical knowledge of health law and ethics and their application to the real world of health care.

**PUBH.6161 Exposure and Risk Assessment (Formerly 19.616) - Credits: 3**

This course covers quantitative and qualitative approaches to the development of sampling strategies. Statistical considerations in the quantification of occupational exposures are covered. Assessment of dermal exposures and the use of biomarkers for exposure assessment are also a focus of this class. An introduction to the methods of risk assessment will also be covered.

**PUBH.6191 Measurement of Chemical Exposure (Formerly 19.619) - Credits: 3**

Basic properties of airborne particles, with particular regard to properties important to health. Sampling and analysis methods used in the evaluation of occupational exposures to aerosols, gases, vapors. Direct reading instrumentation, calibration and data processing. Integrated sampling methods and chemical analysis of organic and inorganic compounds will be covered in class and lab.

**PUBH.6200 Advanced Exposure Assessment (Formerly 19.620) - Credits: 3**

An advanced seminar covering exposure assessment for studies of acute and chronic respiratory disease, pharmacologic modeling for exposure assessment and the design of models to evaluate the role of production process factors in determining workplace airborne exposures. The course assumes a prior background in epidemiology and biostatistics as well as industrial hygiene and toxicology.

**PUBH.6210 Nanomaterials: Exposure, Health and Safety (Formerly 19.621) - Credits: 3**

This course presents a comprehensive overview of environmental health and safety issues of nanotechnology, with focus on biologically based exposure assessment and control. Methods based on biology, toxicology, and knowledge of disease mechanisms are presented for identifying and quantifying nanoscale materials exposures found in occupational/environmental setting and consumer products and for designing exposure assessments for the study of health effects. This course is needed to fill a gap in the current curriculum offerings and to assist the various researchers in understanding possible risks associated with diverse nanotechnologies. The course will include introductory lectures, paper critiques, and laboratory sessions.

**PUBH.6220 Biomarkers in Occupations and Environment (Formerly 19.622) - Credits: 3**

This new course, the only of its kind in the occupational & environmental hygiene program in the country, will discuss the significance of occupational environmental and household skin exposure to chemicals, skin exposure assessment and regulatory aspects. The course will address important topics, such as physiology and metabolism of normal skin, skin absorption of a variety of chemicals, including solids and nanomaterials, factors affecting skin permeation, permeability of compromised skin barrier integrity, skin sampling methods, skin-lung interactions and prevention of skin exposure, through a mix of didactic presentations and critical discussion of the scientific peer-reviewed literature. Each session will start with a presentation on the topic, followed by guided discussions of realistic, but provocative, scenarios. As laboratory space and instrumentation becomes available in the near future, a laboratory component will be added to the course to emphasize major sampling techniques and illustrate/visualize skin permeation of chemicals.

**PUBH.6250 Health Policy (Formerly 32.625) - Credits: 3**

This course provides students with a basic framework for health policy analysis and examines major aspects of U.S. health policy. Detailed consideration and discussion focus on the relationship of national policy to the planning, implementation and funding of healthcare services. The course covers topics such as the healthcare policy environment in the U.S., government-funded healthcare through Medicaid and Medicare, and the Massachusetts healthcare reform.

**PUBH.6260 Leadership in Healthcare (Formerly 32.626) - Credits: 3**

The purpose of this course is to encourage students to carefully analyze their leadership style and skills within the context of health care. The course includes the study and application of leadership theories, concepts, and skills. Students will also assess their own leadership potential through the completion of readings, personal and leadership self-assessments, values exploration, and leadership skill exercises.

**PUBH.6270 Socioeconomic Inequalities in Health (Formerly 32.627) - Credits: 3**

The course explores the relationship between social and
economic justice and public health. Focusing primarily on the U.S., the forces that either establish and exacerbate or prevent socioeconomic inequities will be analyzed to understand the intricate links between social, behavioral, physical, and biological determinants of health. Several theoretical orientations will be reviewed in order to better understand how each frames research and public health strategies that have been used to address health inequalities. Students will be able to competently articulate the relationships between social and health inequalities. They will be able to explain the strengths and limitations of different theoretical orientations to these issues and frame the policy needs to positively reduce health disparities.

**PUBH.6320 Health Information System Planning (Formerly 32.632) - Credits: 3**

A graduate-level course introducing healthcare professionals to healthcare information system life-cycles. The course will take a detailed look at the process of systems planning, analysis, design and implementation within the healthcare environment. The concepts are taught in a manner that allows the skills learned to be applied to any discipline with the organization. The course is designed to give healthcare professional a practical understanding of the steps to successful systems delivery and its importance to a successful organization. Skills learned in this course will enable the student to work effectively with and support the information systems planning effort in order to ensure better system that align with the IS, clinical and business objectives.

**PUBH.6321 Advanced Biomechanics (Formerly 19.632) - Credits: 3**

A course in advanced biomechanical modeling methods, covering three dimensional static models, optimization methods and dynamic models. Special emphasis will be placed on biomechanical models of the hand. Time will also be dedicated to reviewing current developments in the scientific literature.

**PUBH.6330 Healthcare Database Design (Formerly 32.633) - Credits: 3**

A practical approach to the design, and development of a relational database with an emphasis on healthcare. Analyzing the requirements of the database proceeds to the design of the structure of the relational database, which is then developed in a Relational Database Management System (RDBMS). Microsoft Access is used as the RDBMS platform.

**PUBH.6340 Macroergonomics: A comprehensive approach to Job and Organizational Design (Formerly 19.634) - Credits: 3**

This is a graduate level course providing a comprehensive foundation for project management as it applies to healthcare. Students will be introduced to the theory and concepts of project management and the tools to manage projects with a focus on healthcare. At the end of this course, students should be able to develop, execute, and control a basic project plan that is capable of supporting organizational objectives linked to measures of success for a single project.

**PUBH.6380 Strategic Planning in Healthcare and HIT (Health Information Technology) (Formerly 32.638) - Credits: 3**

A graduate-level course introducing healthcare professionals to strategic planning for the information systems organization. The concepts are taught in a manner that allows the skills learned to be applied to any discipline with the organization. The course is designed to give healthcare professional a practical understanding of strategic planning and its importance to a successful organization. Skills learned in this course will enable the student to work effectively with and support the information systems planning effort in order to ensure better IS, clinical and business alignment.

**PUBH.6381 Methods In Work Analysis (Formerly 19.638) - Credits: 3**

Criteria for selection of an approach to ergonomic job analysis depend on the combination of exposures (micro- and macro-level ergonomic stressors) observed to be present as well as the analytical goal. Many ergonomic analysis techniques are based on traditional industrial engineering approaches (time-motion study and work sampling), applied to the identification and evaluation of potential risks to workers' health. A variety of methods, both observational and instrumental, will be discussed; laboratory sessions will permit hands-on application of several of these for critical evaluation.

**PUBH.6390 Electronic Health Record Systems (Formerly 32.639) - Credits: 3**

The course addresses Electronic Health Records (EHR) integration with patient care flow, clinical decision making and patient engagement, as well as patient registries and clinical quality reporting. Students also learn core EHR functions, strategies for EHR optimization, and how the EHR can be leveraged for population health management. The course uses industry-leading EHR software as a learning tool to demonstrate how electronic health record technologies are used in a healthcare setting.
19.640) - Credits: 3

The purpose of this course is to introduce students to the Macroergonomics field. Macroergonomics, also known as the third generation of ergonomics, is a top-down sociotechnical systems approach to the design of organizations, work systems, and jobs. The goal of macroergonomics is a fully harmonized work system at both the macro- and micro-ergonomic level which results in improved productivity, job satisfaction, health and safety, and employee commitment.

PUBH.6430 Health Work Organization Design (Formerly 19.643) - Credits: 3

Rationales for prevention; determinant of job change feasibility, classic and alternative work organization theories, alternative productivity conceptions, health and growth assessment strategies, conducive work processes, work-group based re-design processes, communicative and network-oriented processes, organization-level change process, product redesign, occupational and political strategic issues.

PUBH.6510 Work Environment Policy (Formerly 19.651) - Credits: 3

This course provides an overview of occupational safety and health policy in the U.S. It focuses on the legal context, especially on OSHA, but also provides an analytical framework for examining the role of social, economic and political factors in the recognition and control of occupational hazards.

PUBH.6540 Work, Technology and Training (Formerly 19.654) - Credits: 3

This course examines the broader issues of the impact of technology on the work environment and on workers. Topics include technology and craft work, Taylorism and the development of mass production methods, labor in the “factory of the future”, skill-based automation, shop floor programming, and other issues in technology policy. The course is offered in collaboration with the Department of Regional Economic and Social Development as 57.503.

PUBH.6550 Introduction to Environmental and Natural Resource Economics (Formerly 19.655) - Credits: 3

This course introduces students to the economic and policy aspects of environmental quality and natural resource issues. The course also incorporates relevant work-environment related issues. Simple and complex models are used to blend economic theory with environmental facts. Students will learn to derive policy insights form theoretical constructs. The primary objective is to show how the basic principles in economics can play a valuable role in analyzing and evaluating critical environmental issues and help in determining policy guidelines. Standard benefit cost of efficiency criteria will be applied to a wide variety of environmental, work-environment and natural resource problems. In attempting to do so we shall also emphasize how difficult it is to model actual environmental problems in the real world. We shall draw upon the basic tools of environmental and health economics to discuss current policy issues and questions that policy makers confront in practice. Graduate students in work environment will be required to do an economic analysis of an occupational health and safety intervention.

PUBH.6580 Clean Product Design (Formerly 19.658) - Credits: 3

This advanced seminar will provide an introduction to clean product design and management which includes the use of lifecycle thinking, eco-design concepts, materials analysis, inherent produce safety, recycling and reuse, produce take back, and design for the environment. As background, the seminar will cover renewable resources, bio-based materials and green chemistry solutions and conclude with a consideration of new forms of sustainable consumption.

PUBH.6590 Cleaner Production (Formerly 19.659) - Credits: 3

This course will explore the rapidly expanding developments in cleaner production methods and policies. The course will focus on new directions in environmentally conscious manufacturing and product design in Europe. The subject will cover topics ranging from European demonstration projects, environmental auditing, cleaner technology assessment, eco-efficiency models, water and energy conservation, sustainable product design, eco-design and life cycle assessment, product take-back and extended product life, full cost accounting, industrial ecology, environmental management systems and ISO 14000. Special emphasis will be given to new information data sources and an introduction to new cleaner production methods software.

PUBH.6660 MPH Practicum (Formerly PUBH.666) - Credits: 3

This practicum is the first of two culminating experiences in the MPH program that requires a student to apply theories and principles from coursework in a public health setting. The practicum is a planned, supervised and evaluated practice experience under the supervision of a qualified preceptor. Students meet in a seminar with a faculty member who oversees their final applied practice project during the practicum and integrated practical learning courses.

PUBH.6670 Integrated Practical Learning (Formerly
PUBH.667) - Credits: 3
This course is designed as the second of two applied learning courses following PUBH.6660 MPH Practicum. It is a culminating experience for students in the MPH program. Students in this course will demonstrate the mastery of a body of public health knowledge and achievement of the MPH competencies. They will do this through completing their practicum experience and developing a high-quality written product.

PUBH.6750 Introduction to Manuscript Writing (Formerly 19.675) - Credits: 3
This course helps doctoral students (and high-level master’s students) gain knowledge and critical practical skills in scientific writing and oral communication in public health. This includes writing dissertation proposals, dissertations, grant applications, scientific meeting abstracts, scientific manuscripts, factsheets, and presenting to scientific and non-scientific audiences. Specific content area includes study design and methodology, the structure of scientific documents, literature review, and communication strategies. Specific attention will be given to effective scientific writing and to guiding principles for ethical research.

PUBH.6760 Introduction to Proposal Writing (Formerly 19.676) - Credits: 1
This seminar will cover the basics of how to write a thesis proposal or grant application. Participants will bring at an idea for a project and, if possible, an outline or draft of a proposal to be developed further with peer and instructor feedback.

PUBH.6800 Introduction To SAS (Formerly 19.680) - Credits: 0-1
This course is designed for researchers who will be doing data analysis using SAS. No prior programming experience is necessary, though familiarity with and general experience in use of a PC (DOS and Windows) is required. The course covers topics including: basics of SAS, reading raw data and existing SAS data sets, modifying data, combining data sets, basic statistical procedures, sorting, summarizing, and printing data. "Variable credit course, student chooses appropriate amount of credits when registering.".

PUBH.6820 Applied Epidemiology Methods (Formerly 19.682) - Credits: 3
This course emphasizes the design and conduct of epidemiology studies. Major topics covered include: casual inference in epidemiology, point and interval estimation for cohort and case control studies, exposure assessment for epidemiology, control of confounding, the identification and interpretation of effect modification, as well as cross-sectional designs and meta-analysis.

PUBH.6830 Risk Assessment (Formerly 19.683) - Credits: 3
This course will review both the methods and policy implications of risk assessment in the development of occupational and environmental standards. Students will conduct risk assessments on real problems, and study important cases in which these methods have been used in setting public policy.

PUBH.6840 Musculoskeletal Epidemiology (Formerly 19.684) - Credits: 3
An advanced course on methods and content of research on work-related musculoskeletal disorders. Reviews pathophysiology, diagnosis, prevalence, latency and surveillance issues. The key literature is examined with attention to study design, quality of exposure assessment, control of bias and adequacy of statistical analysis.

PUBH.6850 Applied Public Health Research and Practice - Credits: 3
The focus of this course is to provide students with advanced skills necessary to collect quantitative and qualitative data for public health research and practice. Students will learn quantitative methods including questionnaire development, survey planning, data collection, data coding and data management. The course will prepare students to design, conduct, analyze and interpret qualitative research. Strategies for mixed methods research in social and behavioral sciences will be discussed.

PUBH.6860 Program Development and Implementation - Credits: 3
This course is designed to equip students with the knowledge and skills necessary to systematically develop and implement public health programs. Models for program planning are utilized to inform program design. In addition to didactic work, students are guided through the creation of a program and implementation strategies to accelerate the translation of evidence into practice.

PUBH.6870 Quantitative Models for Public Health - Credits: 3
This course introduces quantitative models commonly used in public health research and practice. Emphasis is placed on understanding the logic and underlying assumptions of theses
models. Students will gain knowledge and skills in properly selecting and applying these models in various practical settings. Topics include probability sample surveys, quantitative risk assessment, quasi experimental design, propensity matching, interrupted time series, epidemics of infectious diseases, Monte Carlo simulations, and predictive analytics.

PUBH.6871 Health Communication and Technology - Credits: 3

Students will explore the theories and practice of communication in public health, with a particular emphasis on the role of technology in sharing public health information. The impact of social and environmental factors on the success of health messages, and the relevance of social media and other technology to positively impact issues in population health will be analyzed. The strategic and ethical use of media in developing and implementing effective public health communications is a focus of the course. The targeting of health communication campaigns to populations for the purpose of influencing behaviors and health policy will be examined.

PUBH.6890 Advanced Regression Modeling (Formerly 19.689) - Credits: 3

This course will introduce linear, generalized linear and time-to-event regression models that are commonly used in epidemiologic research, community needs assessment and public health program/policy evaluations. Topics include regression models for continuous, binary, ordinal, multinomial, count, time-to-event, and longitudinal data.

PUBH.6900 Critical Review Health Regulations (Formerly 19.690) - Credits: 3

Course designed to explore the practical applications of epidemiologic methods to the setting of actual standards. Students gain experience in distinguishing minor from major design and analysis flaws. Course is presented as a seminar with four case studies and problem analysis.

PUBH.6950 Chemical Process/Sustainability (Formerly 19.695) - Credits: 3

This course surveys the basis of chemical engineering process design and fundamentals of unit operations. The student will be able to understand the basics of chemical engineering design methods for the purpose of enhancing sustainability of chemical production processes.

PUBH.7020 Independent Study: Industrial Hygiene (Formerly 19.702) - Credits: 1

Advanced topics in industrial hygiene, exposure assessment or exposure control not offered in the regular curriculum. Topics may vary from year to year.

PUBH.7040 Independent Study: Ergonomics (Formerly 19.704) - Credits: 1

Advanced topics in biomechanics, work physiology, occupational safety or human factors not covered in the regular curriculum. Content may vary from year to year.

PUBH.7080 Independent Study: Epidemiology (Formerly 19.708) - Credits: 1

Advanced topics in occupational epidemiology, design and confounding, exposure-response modeling, or surveillance not covered in the regular curriculum. Content may vary from year to year.

PUBH.7090 Independent Studies: Occupational Epidemiology (Formerly 19.709) - Credits: 1

Advanced topics in occupational epidemiology, design and confounding, exposure-response modeling, or surveillance not covered in the regular curriculum. Content may vary from year to year.

PUBH.7110 Independent Study: Industrial Hygiene (Formerly 19.711) - Credits: 1-3

Advanced topics in industrial hygiene, exposure assessment or exposure control not offered in the regular curriculum. Topics may vary from year to year.

PUBH.7120 Independent Study: Industrial Hygiene (Formerly 19.712) - Credits: 1-3

Advanced topics in industrial hygiene, exposure assessment or exposure control not offered in the regular curriculum. Topics may vary from year to year.

PUBH.7130 Independent Study: Ergonomics (Formerly 19.713) - Credits: 3

Advanced topics in biomechanics, work physiology, occupational safety or human factors not covered in the regular curriculum. Content may vary from year to year.

PUBH.7150 Independent Study: Work Environment Policy (Formerly 19.715) - Credits: 3

Advanced topics in work environment policy, risk perception,
risk communication and management, regulatory affairs or labor-management programs not covered in the regular curriculum. Content may vary from year to year.

PUBH.7170 Independent Study: Epidemiology (Formerly 19.717) - Credits: 3
Advanced topics in occupational epidemiology, design and confounding, exposure-response modeling, or surveillance not covered in the regular curriculum. Content may vary from year to year.

PUBH.7190 Independent Study: Clean Production (Formerly 19.719) - Credits: 3
Advanced topics in clean production, pollution prevention, and environmental protection efforts. Not offered in the regular curriculum. Topics may vary from year to year.

PUBH.7210 Selected Topics: Industrial Hygiene (Formerly 19.721) - Credits: 1-3
PUBH.7230 Selected Topics: Ergonomics (Formerly 19.723) - Credits: 3
PUBH.7250 Epidemiologic Theory (Formerly 19.725) - Credits: 1-3
An advanced seminar in epidemiologic theory. The goal of the course is to develop each student's own theoretical perspective on the field to ground practical problems of study design and analysis. Students read a major text in modern chronic disease epidemiology as well as relevant papers, and discuss and evaluate the perspectives of different authors. Topics include: causality, study designs, measures of disease frequency, measures of association, statistical inference, biases, and confounding.

PUBH.7270 Sel Top: Epidemiology (Formerly 19.727) - Credits: 3
PUBH.7280 Sel Top: Work Env Policy (Formerly 19.728) - Credits: 3
PUBH.7290 Selected Topics: Clean Production (Formerly 19.729) - Credits: 3
PUBH.7330 Capstone Project (Formerly 32.733) - Credits: 3
Near the end of one's Master's Degree program, students register for Capstone Project and complete a real world case study report and presentation. The Capstone Project applies concepts and skills learned in the program. It involves research and development, and culminates in a substantial business-type report. 3 credits, Requires Instructor Permission.

PUBH.7331 Graduate Project (Formerly 19.733) - Credits: 3
Advanced research project required of all master's degree candidates in the ergonomics, industrial hygiene, occupational epidemiology and work environment policy concentrations.

PUBH.7350 Independent Study: Policy (Formerly 19.735) - Credits: 3
PUBH.7360 Graduate Project - Work Environment (Formerly 19.736) - Credits: 6
PUBH.7370 Independent Study: Epidemiology (Formerly 19.737) - Credits: 3
PUBH.7390 Graduate Project - Work Environment (Formerly 19.739) - Credits: 9
Advanced research project required of all master's degree candidates in the ergonomics, industrial hygiene, occupational epidemiology and work environment policy concentrations.

PUBH.7430 Master's Thesis Research (Formerly 19.743) - Credits: 3
PUBH.7590 Doctoral Dissertation (Formerly 19.759) - Credits: 1-9
Faculty supervision of doctoral dissertation.

PUBH.7610 1 - Credit Continued Graduate Research (Formerly 19.761) - Credits: 1
1-Credit Continued Graduate Research course is for students with less than one year to defend or complete program. Part of reduce course load program for international students.

PUBH.7630 Continued Graduate Research (Formerly 19.763) - Credits: 3
PUBH.7700 Directed Readings: Epidemiology Biostatistics (Formerly 19.770) - Credits: 3
PUBH.7750 Capstone/Thesis Review (Formerly 32.775) - Credits: 1
PUBH.7760 Curricular Practical Training (CPT) (Formerly 32.776) - Credits: 0-1
An internship, practicum or other type of employment that is either required by the students academic program or an experience for which a student receives academic credit. To be eligible the student must be in legal F-1 status and have been enrolled full-time for one academic year. CPT work experience must be in the students field of study and contain a curricular component. "Variable credit course, student chooses appropriate amount of credits when registering."

PUBH.9990 Intercampus Graduate Research (Formerly 19.999) - Credits: 0

This course will allow doctorate students to remain active while they are taking courses/research at the other UMASS campuses.
School of Nursing

The UMass Lowell Solomont School of Nursing at offers the following graduate programs:

- Doctoral Program (Ph.D.)
- Post-Master’s Doctorate in Nursing Practice (DNP) Program
- Master’s - Doctor of Nursing Practice Fast Track Program
  [http://www.uml.edu/Catalog/Graduate/Health-Sciences/Nursing/Post-Masters-Doctorate.aspx]
- Master’s of Science in Nursing
- Bachelor’s-Master’s Program

Philosophy

The philosophy of the Solomont School of Nursing reflects beliefs regarding person, environment, health, nursing and education. People have unique, individual qualities and basic needs for respect, worth and recognition of personal dignity. They have the right to make choices and establish goals, which influence and are influenced by the environment. Health is a dynamic state of physiological, psychological, social and spiritual well-being. Nursing is a health care discipline guided by professional standards of care to support individuals, families, groups and communities in the promotion of health throughout the life span.

Education is a self-actualizing, creative, lifetime endeavor involving values clarification, progressive systematic inquiry, critical analysis and judgment. The bachelor’s nursing program incorporates a liberal education with generalized preparation in professional nursing. The masters program is predicated upon a baccalaureate nursing education and prepares individuals as advanced practice nurses. The doctoral program builds on both the generalized preparation in professional nursing and the specialist preparation at the masters level to prepare nurse scholars in health promotion.

Master of Science in Nursing

The UMass Lowell School of Nursing offers a master’s program in nursing that emphasizes depth of knowledge and excellence in nursing in two areas of specialization: Adult-Gerontological Nursing and Family Health Nursing.

- Description of Program

Program Outcomes

1. Practice in the advanced nursing role of the specialty
2. Collaborate with clients, peers, and other health professionals
3. Demonstrate leadership in the profession of nursing.

Admission and Degree Requirements

Requirements for the master’s program are:

- A baccalaureate degree with a major in nursing from an accredited program,
- An undergraduate scholastic average of 3.0 or better,
- Official transcripts, from all of your previous degree coursework (Associates and Bachelors in Nursing) as well as any completed or in progress graduate courses.
- An introductory course in statistics. Course grade must be on transcripts.
License to practice nursing in the Commonwealth of Massachusetts. Out of state RN licenses are accepted for application review, but all accepted students will need to obtain Massachusetts License prior to practicum courses.

Experience working as an RN prior to enrolling in Advanced Health Assessment and subsequent Specialty courses.

A resume, summarizing educational and professional nursing experience and any other related honors, special skills or certifications.

Three letters of recommendation preferably from nursing faculty, supervisors or nurse leader in your organization. All recommendations should be sent to graduate admissions using the link and if addendum documents are attached they should be on hospital/school/agency letterhead and signed by the author of the recommendation. Recommendation should address your academic ability and professional qualifications as well as your potential for success in a graduate NP program.

Written Statement: A goal statement that briefly highlights relevant work history and immediate and long term professional goals as an advanced-practice nurse. Goal statements should be congruent with the specialty tracks offered at UMass-Lowell (FNP or AGNP) and demonstrate an understanding of the scope of the advanced practice nurse in ambulatory, long term care settings.

Computer literacy with WORD, email, internet searches and electronic learning platforms and programs.

Completed application and fees.

GREs are not required for the MS program

A minimum of 42 credits of course work is required for graduation with an MS for all students. A research project or a thesis is an option but not required for graduation.

Students may be admitted for part-time study. Part-time students must meet the same admission requirements for graduate study as full-time students. Part-time students will meet with their assigned advisor and plan a schedule for their program of studies. All admitted students are advised to contact their assigned advisors for program of study recommendations and to register for courses during University advisement periods (April and November).

Transfer of credits for non-matriculated students: The maximum number of credits that can be transferred from non-UMass Lowell programs is 6 credits. Prospective students can take up to an additional 6 credits from UMass Lowell prior to matriculation and can be applied to the MS degree.

Those taken at another accredited institution may be transferred if appropriate to the MS degree program in nursing and after approval by the faculty of record for the UMass Lowell course and the petition signed by the Graduate Coordinator. To qualify for transfer, the course must have been taken within 5 years prior to the date of matriculation. Transfer of credits may not be granted for Advanced Health Assessment, Specialty Courses or Specialty Practicum courses.

Admission is competitive. Admission is competitive and only completed applications will be reviewed. It is the responsibility of the applicant to check their electronic admission file for completion of checklist items. Applications are accepted on a Rolling Admission basis for the Fall and Spring matriculation. Full-Time Students are generally admitted to the Fall Semester and can complete the degree in 2 years (4 semesters). Part-Time students can complete the degree in 3-5 years. Please seek advice from Lisa Marchand (Lisa_Marchand@uml.edu) Coordinator of the MS/NP program for appropriate courses to take as a non-matriculated student. Upon admission, these courses can be transferred via petition.

Additional Information

The following health and professional documentation is required upon admission: Current CPR certification, RN nursing license, required immunizations (or titers indicating immunity) influenza, Hepatitis B, MMR, Tdap, varicella, PPD; and recent health exam by health care provider. In addition, every student must be cleared by CORI (Criminal Offender Record Information). Students who cannot provide this information will be unable to complete required clinical practicum.

Degree Pathway for Master of Science in Nursing Advanced Practice Registered Nurse (full time option*)

- Degree Pathway (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)

Areas of Specializations:

Adult-Gerontological Nursing

This specialty focuses on promoting health of young adults age 13 and up, adults and older adults during the process of normal aging and identifying and treating common health
problems. Students develop advanced skills in communicating with young adults, adults and older adults, health assessment, health teaching and nursing intervention and evaluation. Students are prepared as nurse practitioners and eligible to sit for the adult gerontological primary care nurse practitioner certification exam.

**Family Health Nursing**

This specialty focuses on facilitating the health practices of families during the process of normal development and identifying and treating common health problems across the life span. Students develop advanced skills in communicating with families, health assessment, health teaching and nursing intervention and evaluation. Students are prepared as nurse practitioners and are eligible to sit for the family nurse practitioner certification exam.

**Ph.D. in Nursing Program**

The Doctor of Philosophy in Nursing Program at UMass Lowell is a research-focused doctoral degree in nursing with a focus in health promotion. The focus in health promotion allows students to acquire cutting edge knowledge in the field of health promotion, a top priority in the nation. The executive program model uses a cohort system, which allows students to progress through the program together, either part-time or full-time. Students generally attend core nursing courses once/month on a Saturday; the remaining course modules are conducted online. Graduates will advance knowledge in the fields of nursing and health promotion at the individual, family and community level.

- Ph.D. Program Overview
- Admission Requirements
- Degree Requirements
- Sample Course of Study (full-time)
- Sample Course of Study (part-time)
- Qualifying Examination
- Dissertation
- Contact

**The Ph.D. Program Overview**

Established in 1996, the program has produced graduates who are leaders in nursing and health promotion research. All nursing courses are offered using a weekend-blended model with two courses offered completely online. This is the only Nursing Ph.D. program in New England that uses this flexible approach to learning.

Graduates of the Ph.D. in Nursing program are prepared to:

1. Extend the body of knowledge in nursing and health promotion through research and theory development.
2. Create change in health outcomes among targeted populations through the development and implementation of health promotion research.

**Admission Requirements**

Students who wish to apply for admission to the Ph.D. program must submit a graduate admissions application form. Applications are reviewed on a rolling basis. The preferred deadline is April 1 for Fall admission; new students are only accepted in the Fall. The graduate application form can be obtained from the UMass Lowell Graduate Admissions Office.

**Requirements Include:**

1. B.S. degree in nursing with a minimum G.P.A. of 3.3
2. A masters degree in nursing or health-related field with a minimum GPA of 3.3
3. A current Massachusetts R.N. license or eligibility (International students may waive this requirement but must have an equivalent nursing degree and will be evaluated on an individual basis)
4. An official transcript of all previous academic records (both graduate and undergraduate)
5. Official GRE score results, taken within the past 5 years.
6. A personal statement about the applicants interest in the program that includes professional goals
7. Three letters of recommendation from individuals who can assess the applicants potential for doctoral work
8. A recent Curriculum Vitae
9. International students must submit evidence of an equivalent undergraduate program in nursing and masters program in nursing or related field.
10. International students must submit an acceptable TOEFL or IELTS score.

**NOTE: GREs are required.** Completion of a graduate course in statistics is strongly recommended; Writing examples are also highly recommended to accompany the personal statement.

The Ph.D. Admissions Committee is chaired by the Ph.D. Program Director and comprised of at least one other faculty member who teaches in the graduate program. The Admission
Committee will interview applicants and make the final decision. There are three types of decisions:

1. Accept
2. Accept with conditions, or
3. Deny

The application process is described as follows:

- The applicant logs onto Graduate Admissions website to obtain all required application forms and documents.
- The applicant completes the application form online and pays the fee.
- The applicant submits documents online to Graduate Admissions Office as they are ready.
- The Graduate Admissions Office notifies the Director of Ph.D. Program in Nursing once the application is complete.
- The Ph.D. Admissions Committee reviews all applicants to determine candidates to interview.
- The Ph.D. Admissions Committee conducts interview for those who passed the initial review.
- The Ph.D. Admissions Committee makes a decision and submits it to Graduate Admissions
- The applicant receives a letter from Graduate Admissions for either acceptance or denial

Degree Requirements

The doctoral program in nursing with a focus in health promotion requires a total of 48 semester credits beyond the masters degree. Students may enroll full or part-time. Part-time students are expected to enroll with their cohort for a minimum of two courses/semester in the first two years. A sample program of studies for full and part time students includes:

Sample Full-Time Plan of Study - UMass Lowell Ph.D. Nursing Program

DEGREE PATHWAY
([https://www.uml.edu/docs/phd%20in%20nursing%20degree%20pathway%20full%20and%20part%20time%20October%202015-final_tcm18-248375.pdf](https://www.uml.edu/docs/phd%20in%20nursing%20degree%20pathway%20full%20and%20part%20time%20October%202015-final_tcm18-248375.pdf))

Fall Semester Year 1

<table>
<thead>
<tr>
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<tr>
<td>NURS.7010</td>
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<tr>
<td>NURS.7020</td>
<td>Theoretical Foundations of Health Promotion (blended)</td>
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<tr>
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<tr>
<td>NURS.7160</td>
<td>Qualitative Methods (blended)</td>
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Summer Semester Year 1

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<td>Health Promotion Research (blended)</td>
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<tr>
<td>NURS.7130</td>
<td>Curriculum and Teaching in Nursing (blended)</td>
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Subject: Catalog Archive 2020 - 2021 / School of Nursing - General Information

es/NURS/7130)  
Total: 9 credits

### Spring Semester Year 2

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Total: 6 credits

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TOTAL PROGRAM CREDITS: 48

Sample Part-Time Plan of Study - UMass Lowell Ph.D. Nursing Program

### Fall Semester Year 1

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Total: 6 credits

### Summer Semester Year 1

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Total: 6 credits

### Spring Semester Year 2
NURS.7160
(https://www.uml.edu/catalog/courses/NURS/7160)
Qualitative Methods 3

NURS.7060
(https://www.uml.edu/catalog/courses/NURS/7060)
Measurement OR NURS.7370
(https://www.uml.edu/catalog/courses/NURS/7370)
Advanced Qualitative Methods 3

Total: 6 credits

Fall Semester Year 3

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Total: 6 credits

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Fall and Spring Semester Year 4

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Spring Semester Year 4

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<td>NURS.7530</td>
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TOTAL PROGRAM CREDITS: 48

Nursing Qualifying Examination

The qualifying examination is designed to determine the students ability to analyze and synthesize conceptual, theoretical and methodological knowledge as it pertains to health promotion within a substantive research area. The examination provides a method of assessment to ascertain if the student is ready to advance to the dissertation stage. It consists of two written publishable papers, that are focused on: a concept or theory; a systematic review on a specific topic related to the students research area; or a paper related to research methods. Both papers will be original, critical evaluations that relate to the students identified research area. Students are eligible to complete the qualifying examination after completion of all of the core courses (33 credits).

Dissertation

Dissertation planning may be initiated in the first year, but formal work begins following successful completion of the Nursing Qualifying Examination and all course work. At this time a Dissertation Committee is formed to direct the students research. The dissertation requirement is designed to demonstrate that the student has acquired a substantial body of knowledge related to the selected field of study, has developed the ability to use appropriate data analysis methods, and has contributed to the advancement of nursing knowledge related to health promotion. The students dissertation work must be original and represent a unique contribution to the literature.

Contact:

Barbara Mawn, Ph.D., RN
Ph.D. Program Director
113 Wilder Street, Suite 200 Lowell MA 01854
Office Location: Health and Social Science Building, Room 200
978-934-4485
Doctorate in Nursing Practice (DNP) Program

About the Program

Our DNP program educates advanced practice registered nurses and nurse leaders who seek to develop or expand their leadership roles in the health care system. With the knowledge and skills acquired through UML’s DNP program, our graduates will be prepared to propose solutions to improve patient care and health care outcomes. This is achieved through an interdisciplinary curriculum which provides nurses with knowledge and skills in evaluation research, health policy, organizational leadership and financing, evidence-based practice and health care informatics. Our DNP graduates will have a positive impact on the health care system by using an evidence-based approach to improve health care delivery.

By enriching our DNP program with content on cultural competency, DNP graduates are prepared to reduce health care disparities for culturally diverse and underserved populations. Our graduates will also have advocacy skills that are essential in influencing governmental and organizational policy decisions.

The DNP Program offers 4 pathways for the completion of the DNP degree:

- **Post Baccalaureate DNP (BS-DNP)** - may be completed in 4 years full time, including summer semesters, or 5 years, part-time, including summer semesters. Courses are delivered in a hybrid format. Students choosing this option have up to 8 years to complete the requirements for graduation. The BS-DNP pathway offer 2 options: Adult-Gerontology Primary Care Nurse Practitioner (A-GPCNP)Family Nurse Practitioner (FNP)

- **Post Master’s DNP (MS-DNP)** - may be completed in 3 academic years part time or 2 academic years full time. Courses are delivered in an online format with 5 on campus intensives. Students have up to 5 years to complete requirements for graduation.

- **Fast Track BS-DNP** - GPA of 3.5 is required for applicants from UMass Lowell Solomont School of Nursing baccalaureate program. Applicants may transfer up to 12 credits from approved BS courses (5000 or higher) toward the DNP degree. Students who are completing their BS program in the spring are eligible to apply for the Fast Track BS-DNP option for admission in the following fall term. Courses are delivered in a hybrid format with online courses, some requiring 1 Saturday a month on campus. Students have up to 8 years to complete the requirements for graduation. The BS-DNP pathway offer 2 options: Adult-Gerontology Primary Care Nurse Practitioner (A-GPCNP)Family Nurse Practitioner (FNP)

- **Fast Track MS-DNP** - GPA of 3.5 is required for applicants from UMass Lowell Solomont School of Nursing master’s program or students from universities with which UMass Lowell has an agreement. Applicants may transfer up to 6 credits from approved master’s courses toward the DNP degree. Students who are completing their master’s program in the spring are eligible to apply for the Fast Track Master’s DNP option from admission in the following fall term. Courses are delivered in an online format and students have up to 5 years to complete requirements for graduation.

See below for the:

- Doctor of Nursing Practice Scholarly Project

Post Baccalaureate Doctor of Nursing Practice Option (BS-DNP)

Specific application requirements include:

- Program application and all required documents submitted through the Graduate Admissions office.
- A baccalaureate degree with a major in Nursing from an accredited program.
- An undergraduate scholastic average of 3.0 or better.
- Official transcripts, from all of previous degree coursework (Associates and Bachelors in Nursing) as well as any completed or in progress graduate courses.
- An introductory course in statistics. Course grade B (3.0 or better) must be on transcripts.
- License to practice nursing in the Commonwealth of Massachusetts. Out of state RN licenses are
accepted for application review, but all accepted students will need to obtain Massachusetts License prior to practicum courses.

- Experience working as an RN prior to enrolling in Advanced Health Assessment and subsequent Specialty courses.
- A resume, summarizing educational and professional nursing experience and any other related honors, special skills or certifications.
- Two letters of recommendation preferably from nursing faculty, supervisors or nurse leader in your organization.
- A goal statement highlighting: relevant work history, immediate and long term professional goals as an advanced-practice nurse, and the reason you chose the BS-DNP Doctor of Nursing Practice degree option. Goal statements should be congruent with the specialty tracks offered at UMass-Lowell (FNP or AGNP) and demonstrate understanding of the Doctor of Nursing Practice degree.
- Computer literacy with WORD, email, internet searches and electronic learning platforms and programs.
- Completed application and fees.
- An interview.

Degree Pathway Information

- BS-DNP & Fast Track Part-time Pathway
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
- BS-DNP & Fast Track Full-time Pathway
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)

Post-Masters Doctorate of Nursing Practice Option (MS-DNP)

Specific application requirements include:

- Program application submitted to the Graduate Admissions office.
- MS in Nursing with APRN preparation with national certification as an APRN or board eligible for certification OR MS in Nursing with a current RN license.
- Prior official transcripts from undergraduate and graduate programs.
- Two letters of recommendation (one academic recommendation preferred).
- Interview with nursing faculty.
- Minimum cumulative GPA of 3.0 on a 4.0 scale in a nursing Masters degree program, 3.3 GPA preferred.
- Written narrative of professional goals.
- 500 Master’s or Post-Master’s practicum hours. Applicants who are not APRNs must provide evidence of practice hour equivalents from their master’s program or ANCC certification in their area of practice which affords 250 hours.
- Resume.
- TOEFL if appropriate.

Degree Pathway Information

- MS-DNP & Fast Track Part-time Pathway
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)
- MS-DNP & Fast Track Full-time Pathway
  (https://www.uml.edu/catalog-AY21/pdf/Graduate.pdf)

BS-DNP Option (Fast Track)

Specific Application Requirements include:

- Application and all required documentation submitted through Graduate Admissions Office.
- Application fee being waived.
- Applicants must be in their final year of their BS program at UMass Lowell.
- A 3.5 or better GPA in the SSON BS program at
the time of application, graduation and a acceptance will be conditional upon passing the NCLEX exam.

- Two letters of recommendation, one from faculty and one from current employer.
- A goal statement highlighting: relevant work history, immediate and long term professional goals as an advanced-practice nurse, and the reason you chose the Doctor of Nursing Practice degree option. Goal statements should be congruent with the specialty tracks offered at UMass-Lowell (FNP or AGNP) and demonstrate and understanding of the Doctor of Nursing Practice degree.
- An interview.

MS-DNP Option (Fast track)

**Specific Application Requirements include:**

- Program application submitted to the Graduate Admissions office with the application fee being waived.
- Students must be in their final year of their MS NP program at UMass Lowell or a university with which UMass Lowell has a current agreement for Fast Track MS to DNP admission. Non-UMass Lowell students must submit official transcripts.
- The student must have maintained a 3.5 or better GPA in their masters program at the time of application and graduation.
- Students must submit 2 letters of recommendation, one from faculty and one from current employer.
- Students must submit a letter of purpose identifying immediate and long-term goals and a resume with evidence of working in a professional role.
- Interview with UMass Lowell faculty.
- Within six months of completing the masters NP program the student must show evidence of passing the national APRN certification exam and obtain a state license to practice as an APRN.
- Up to 6 credits of approved graduate level courses (5000 or higher) which were awarded to the MS degree may be applied toward the DNP degree as long as a grade of B or higher was obtained in the courses.

**Contact**

Susan Parker (https://www.uml.edu/Health-Sciences/Nursing/faculty/parker-susan.aspx), DNP, APRN, GNP-BC, ACHPN
Phone: 978-934-4685

**Doctor of Nursing Practice Scholarly Project**

**Criteria for DNP Project**

**Types of DNP Projects**

**DNP Scholarly Project Guidelines**

**DNP Proposal**

**Completing the DNP Project**

The DNP scholarly project reflects the culmination of academic studies completed throughout the DNP program that demonstrates the ability of the student to effect positive change in a health care setting/arena through the careful syntheses of evidence as well as to evaluate the effectiveness of the change.

**Criteria for the DNP Scholarly Project**

**The DNP Scholarly Project Should:**

- Focus on a change that impacts healthcare outcomes either through direct or indirect care.
- Have a system (micro-, meso-, or macro-level) or population or aggregate focus.
- Demonstrate implementation in the appropriate arena or area of practice.
- Use a systematic approach and collect data using methods and tools that meet accepted standards.
- Be conducted according to ethical principles and is
approved by UMass Lowell Institutional Review Board if applicable.

- Include a plan for sustainability (e.g. financial, systems, or political realities).
- Include an evaluation of processes and/or outcomes (formative or summative).
- Be disseminated to the appropriate audiences.

Types of DNP Scholarly Projects

*Some examples of scholarly projects include, but are not limited to:*

- Quality improvement projects to address gaps in practice.
- Evaluation of implementation of evidence-based practice guidelines.
- Development of models of care or programs.
- Evaluation of financial analyses to compare models of care.
- Analysis of policies related to health care practice.
- Development of inter-professional and/or intra-professional collaborative projects to implement policy or evaluate care models.

DNP Scholarly Projects Guidelines

Students choose a DNP Project Chair at the designated point in course work. The Chair, a UMass Lowell faculty member or emeritus with a terminal nursing degree, guides the student through the development to the conclusion of the project acting as the PI if an IRB is required at UML. A Community Mentor, who represents the health care setting, is selected by the student and the Chair, and is the third member of the DNP Scholarly Project Team. The UMass Lowell IRB may determine that the project is expedited or exempt. IRB status may be determined by the health care setting in which the project is conducted. Students are required to complete the

DNP Scholarly Project Team Request Form (https://www.uml.edu/docs/DNP%20Scholarly%20Project%20Team%20Request%20Form_tcm18-322507.pdf)

Project Proposal Approval Form (https://www.uml.edu/docs/DNP%20Scholarly%20Project%20Proposal%20Approval%20Form_tcm18-322506.pdf)

Completion of the DNP Scholarly Project

Students are required to complete all course work, present a final an oral presentation, prepare a manuscript of publishable quality, disseminate the project through an approved means, and complete their portfolio. The Project Approval Form is completed and signed.

DNP Proposal Approval Form (https://www.uml.edu/docs/DNP%20Scholarly%20Project%20Approval%20Form_tcm18-322503.pdf)

Stop Out Procedure

Students accepted into DNP Program who elect to stop out of the BS-to-DNP Program and earn a master’s degree have one of two options:

1. The student who has earned 60 credits which includes successful completion of all 5000 and 6000 level courses, and NURS.7170 (https://www.uml.edu/catalog/courses/NURS/7170), NURS.7700 (https://www.uml.edu/catalog/courses/NURS/7700), NURS.7740 (https://www.uml.edu/catalog/courses/NURS/7740) and NURS.7710 (https://www.uml.edu/catalog/courses/NURS/7710) with at least a B, may petition to earn a master’s degree and graduate from the university. This student must be in good standing and have a GPA of at least 3.0 with no more than 6 credits below a B (3.00). The student who wishes to return to complete the DNP Degree must reapply, however, if it is within 3 semesters, only a new application form and statement of purpose are needed. Students may be readmitted on a space available basis. Graduating students must complete the clearance process at the
Registrar’s Office. All graduate courses whether taken for the doctoral program or as part of the master’s degree will be included in the point average and listed on the student’s transcript.

2. The student with less than the 60 credits completed of the required courses who wishes to stop out with a master’s degree, may petition to drop down to the master’s program on a space available basis in the master’s program. This student must have an earned GPA of at least a 3.0, be in good standing with GPA attainment as indicated above. The student who wishes to return to complete the DNP degree must reapply. Students may be readmitted on a space available basis.

**Graduate Certificates in Nursing**

At this time the Graduate Certificates in Nursing are on hold.
NURS.5220 Independent Study Health Promotion  
(Formerly 33.522) - Credits: 1-3

Health Promotion gerontological clinical practicum is designed to be taken as a co-requisite to 33:611 Gerontological Nursing II didactic, in which the student focuses on comprehensive assessment and diagnosis of health problems in older adults with complex, multi-system health issues. Students utilize evidence-based research to design, implement and evaluate intervention strategies to promote optimum functioning and wellness. Pharmacological and complementary therapies are applied. Client teaching is included.

NURS.5520 Social, Cultural and Policy Issues in Health Care (Formerly 33.552) - Credits: 3

This course links health and illness to other central domains of life: gender, kinship, and culture within the context of the family, community and the current health care system. It draws on concepts from the social, health, and policy sciences to critically examine factors relating to health and health-seeking behaviors across the life course. Ethical dimensions of health policy formation and implementation are analyzed.

NURS.5530 Scholarly Writing - Credits: 2

This course provides an overview of, and introduction to the concepts and skills of scholarly writing as it pertains to scientific reports and papers. Course topics will include scientific literature searches, organizations of research papers and reports, ethical and authorship considerations, and steps in critiquing one’s own and others’ writing. Course objectives will be accomplished by reading and critiquing professional writing, creating original written work, and integrating feedback to improve work.

NURS.5540 Palliative and End of Life Nursing Care  
(Formerly 33.554) - Credits: 3

Through didactic, discussion and field experiences, participants in this course explore research and theory related to death, dying, grief, bereavement, and end-of-life-care throughout the lifespan. Personal, professional, cultural, and ethical barriers and facilitators to the provision of palliative care will be examined using a holistic approach. Comfort and restorative care will be considered within the context of the family and the community in a variety of settings where palliative care is provided.

NURS.5580 Geropsychiatric and Mental Health Nursing (Formerly 33.558) - Credits: 3

The focus of this course is on the nursing care of older adults with psychiatric and mental health problems. This course promotes a holistic approach to mental health care of older adults within the community and long-term care setting. Nursing implications of psychopharmacology, behavioral, and complementary interventions will be discussed. Community resources for older adults with psychiatric and mental health problems will be explored.

NURS.5590 Advanced Pharmacology (Formerly 33.559) - Credits: 3

This nursing course focuses on clinical pharmacology and the mechanisms of drug action which determine therapeutic efficacy in clinical practice. Content includes basic pathophysiology, clinical pharmacology and monitoring parameters and standards of practice. Emphasis is given to implications of patient safety, patient diversity and patient teaching.

NURS.6000 Theoretical Foundations for Advanced Nursing Practice (Formerly 33.600) - Credits: 3

Course focuses on the analysis, critique, and application of theory as a basis for advanced practice nursing. Relationships among theories, research, and nursing practice are emphasized.

NURS.6010 Research for Evidence-Based Practice  
(Formerly 33.601) - Credits: 3

Course focuses on the critique of research studies for the purpose of determining implications for evidence-based practice. The research process will be applied to researchable nursing problems. The role of frameworks, ethics, research designs, sampling theory, and measurement strategies are emphasized.

NURS.6020 Clinical Psychopharmacology (Formerly 33.602) - Credits: 3

This survey course aims to educate advanced practice nurses for safe and effective prescribing practices in the treatment of psychiatric illnesses. The course utilizes a symptom management framework that integrates concepts from normative psychobiology with pathophysiology of the psychiatric diseases. From this perspective, emphasis is placed on gaining a fundamental understanding of the hypothesized compliment between the pathophysiologic basis of the disease state and mechanism of action of the drug treatment as a basis for rational selection of pharmacologic treatment. Current standards of practice and treatment algorithms are emphasized in helping the student to develop a working knowledge of psychopharmacology for the practice arena.

NURS.6040 Directed Study: Multiple Topic - Credits: 4
NURS.6100 Adult Gerontological Nursing I (Formerly 33.610) - Credits: 4

The focus of this course is on the advanced practice nursing role in the holistic assessment and management of health problems of the adult and older adult within a family and community context. Evidence-based strategies to prevent and treat common health problems and to maintain and promote health through the application of advanced knowledge, theory, relevant research and critical decision making are emphasized. Community resources, pharmacological therapies, and complementary strategies are addressed.

NURS.6110 Adult Gerontological Nursing II (Formerly 33.611) - Credits: 4

The focus of this course is on health promotion and biopsychosocial well-being of young, middle aged and older adults from diverse cultures. Utilizing current scientific research, physical/natural sciences, social sciences, and the humanities, implications for advanced nursing interventions and health policy are identified. Principles of pharmacology and pharmacological therapies, and complementary therapies are addressed.

NURS.6120 Adult/Gerontological Nursing III (Formerly 33.612) - Credits: 4

This capstone course builds on the adult/gerontological nursing curriculum of the previous three semesters. Issues related to health care policy and legislation relative to their impact on the role of the nurse practitioner within primary care are analyzed. Advanced knowledge of the management of complex health issues is integrated in nursing practice. Transition to the role of the advanced practice nurse is examined and actualized through an intensive, precepted, clinical experience.

NURS.6130 Adult Gerontological Nursing Practicum I (Formerly 33.613) - Credits: 3

This course focuses on comprehensive assessment and diagnosis of health problems in adults and older adults with complex, multi-system health issues. Students utilize evidence-based research to design, implement and evaluate intervention strategies to promote optimum functioning and wellness. Pharmacological and complementary therapies are applied. Group leadership, client and peer teaching are included.

NURS.6140 Adult-Gerontological Nursing Practicum II (Formerly 33.614) - Credits: 3

The focus of this course is on promotion of biopsychosocial well-being of adults and older adults through comprehensive assessment of health, the diagnosis of age-related changes and health problems, and the design, implementation and evaluation of pharmacologic and complementary intervention strategies. The application of scientific knowledge, theory and research findings to clinical practice is emphasized.

NURS.6500 Family and Adult-Gerontological Advanced Practice Nursing I - Credits: 4

Focus is on the advanced practice nursing role in the holistic assessment and management of health problems of the adolescent, adult, and older adults, within a family and community context. Evidence-based strategies are applied to the prevention, treatment, and management of acute and chronic health problems. Health promotion and maintenance are emphasized through the application of advanced knowledge, theory, research, and critical decision-making. Community resources, pharmacological therapies, and complementary strategies are integrated throughout the course.

NURS.6510 Advanced Health Assessment and Diagnostic Reasoning (Formerly 33.651) - Credits: 3

This course focuses on the development of advanced critical thinking and clinical judgment skills through comprehensive health assessment. Health promotion and health maintenance content, including relevant research findings are utilized to evaluate health status and to evaluate health risk among individuals and groups. Age, gender, and cultural variations in health and implications for advanced practice are included. Advanced practice health assessment skills are developed and refined.

NURS.6511 APRN Practicum I - Credits: 3

This course focuses on comprehensive assessment and diagnosis of health problems in adolescents, adults and older adults with complex, multisystem health issues. Students utilize evidence based research to design, implement, and evaluate intervention strategies to promote optimum functioning and wellness. The application of advanced knowledge, theory, relevant research, and critical decision making are emphasized. Pharmacological and complementary therapies are applied. Group leadership, client and peer teaching are included. Transition of the role of the advanced practice nurse is examined and actualized through an intensive, precepted, clinical experience.

NURS.6512 APRN Practicum II - Credits: 3

This course focuses on health promotion, illness prevention, and treatment through the comprehensive assessment and management of common health issues of individuals in the health setting; Application of theory, knowledge, and research finding to clinical practice is emphasized. The utilization of current clinical technologies is introduced.
NURS.6513 APRN Practicum III - Credits: 3
Advanced knowledge of the management of complex health issues of individuals across the life span is integrated in advanced nursing practice. Transition to the role of the advanced practice nurse is examined and actualized through an intensive, precepted clinical experience.

NURS.6520 APRN Care of Adults - Credits: 3
Focus is on the advanced practice nursing role in the holistic assessment and management of health problems of the adolescent, adult, and older adult, within a family and community context. Evidence-based strategies are applied to the prevention, treatment, and management of acute and chronic health problems. Health promotion and maintenance are emphasized through the application of advanced knowledge, theory, research, and critical decision making. Community resources, pharmacological therapies, and complimentary strategies are integrated throughout the course.

NURS.6521 APRN Care of Children and Adolescents - Credits: 3
This course focus is on the advanced practice nursing of children adolescents in the primary care setting. Health promotion, disease prevention, diagnosis and management principles are applied to alterations in health within a family and community context. Evidence-based strategies to prevent, assess, diagnose and treat common health problems are emphasized as the scientific foundation for independent practice. Additionally, this course emphasizes collaborative partnership development among individuals, families, and intra-professional teams.

NURS.6522 APRN Women's Health Across the Lifespan - Credits: 3
The focus of this course is on health promotion and management of common health issues pertaining to women, from menarche to older adulthood. Based on current scientific research, students will develop knowledge to assess, diagnose and manage alterations in health and develop holistic plans of care that address the health promotion, illness prevention, and primary care needs women across the lifespan. Sociocultural and political factors that affect the health of women will be discussed.

NURS.6523 APRN Care of Older Adults - Credits: 3
Focus is on the advanced practice nurse in the holistic assessment and management of health problems of the adult and older adult in a family and community context. Evidence-based strategies to prevent and treat common health problems and to maintain and promote health though the application of advanced knowledge, theory, relevant research and critical decision making are emphasized. Community resources, pharmacological therapies and complimentary strategies are addressed.

NURS.6524 APRN Role Transition - Credits: 1
This course builds on the APRN curriculum of the previous three semesters. Issues related to health care policy, legislation, transition to the APRN role, ethical and fiscal concepts relative to their impact on the role of the nurse practitioner are analyzed.

NURS.6600 Family Health Nursing I (Formerly 33.660) - Credits: 4
Focus is on the advanced practice-nursing role in the holistic assessment and management of health problems of the family across the lifespan within a family and community context. Evidence-based strategies to prevent and treat common health problems and to maintain and promote health through the application of advanced knowledge; theory, relevant research and critical decision-making are emphasized. Community resources, pharmacological therapies, and complimentary strategies are addressed.

NURS.6610 Family Health Nursing II (Formerly 33.661) - Credits: 4
The focus of this course is on health promotion and management of common health issues pertaining to woman and to infants, children, and adolescents. Based on current scientific research, students develop skills in analyzing data, differential diagnosis, and developing holistic plans of care that address the health promotion, illness prevention, and primary care needs of a wide-variety of client populations.

NURS.6620 Family Health Nursing III (Formerly 33.662) - Credits: 4
This capstone course builds on the family nursing curriculum of the previous three semesters. Issues related to health care policy and legislation relative to their impact on the role of the nurse practitioner within primary care are analyzed. Advanced knowledge of the management of complex health issues is integrated into nursing practice. Transition to the role of the advanced practice nurse is examined and actualized through an intensive, precepted, clinical experience.

NURS.6630 Family Health Nursing Practicum I (Formerly 33.663) - Credits: 3
The focus of this course is on the advanced practice-nursing role in the holistic assessment and management of health
problems of the family across the lifespan within a family and community context. Evidence-based strategies to prevent and treat common health problems and to maintain and promote health through the application of advanced knowledge, theory, relevant research and critical decision-making are emphasized. Community resources, pharmacological therapies, and complementary strategies are addressed.

NURS.6640 Family Health Nursing Practicum II
(Formerly 33.664) - Credits: 3

This course focuses on health promotion, illness prevention, and treatment through the comprehensive assessment and management of common health issues of infants, children, adolescents and woman in the context of family and social environments. Application of theory, knowledge, and research findings to clinical practice is emphasized. The utilization of current clinical technologies is introduced.

NURS.6890 Scholarly Project/Capstone (Formerly 33.689) - Credits: 3

This capstone project affords the student the opportunity for further knowledge development in an area of interest and learning need. The faculty-guided experience involves the development of a scholarly project which may involve a number of options: a scholarly review of the literature in a specific area; development of clinical teaching materials related to some dimension of sleep and/or sleep disorders; or a translational research project whereby a body of current research is interpreted for application to practice. The project will be negotiated with the faculty of record to meet the objectives of the course.

NURS.7010 Philosophy of Science (Formerly 33.701) - Credits: 3

This course provides doctoral students in nursing with philosophical perspectives in science, the nature of knowledge and its development, nursing knowledge development and philosophical underpinning to theory development, methods in scientific inquiry.

NURS.7020 Theoretical Foundations of Health Promotion (Formerly 33.702) - Credits: 3

This course critically examines conceptual frameworks and theories of health promotion and health behavior. The content includes theoretical perspectives from multiple disciplinary perspectives including nursing, psychology, sociology, and public health. Health promotion orientations will include behavioral change and lifestyle modification, environmental enhancement and restructuring, and social ecological approaches.

NURS.7060 Measurement in Health & Behavioral Research (Formerly 33.706) - Credits: 3

This course provides students with theoretical principles of measurement and design in health and behavioral research. The strategies, techniques, and issues in survey research, sampling methods, and the development and administration of survey instruments will be critically examined. Psychometric properties using standardized approaches to measurement will be analyzed. Students will be required to select an appropriate instrument and conduct a comprehensive psychometric evaluation of the instrument.

NURS.7070 Epidemiology of Health Promotion
(Formerly 33.707) - Credits: 3

This course provides an in-depth exploration of the concepts and methods of epidemiological research. Students will critique the principles of epidemiology with an emphasis on health promotion research. Students will analyze and develop epidemiological approaches, which seek to promote health and prevent disease.

NURS.7130 Curriculum and Teaching In Nursing
(Formerly 33.713) - Credits: 3

The focus of this course is on development, implementation, and evaluation of nursing curricula and academic courses. Contemporary theories of learning are applied to analysis of student learning needs, teaching strategies and educational methodologies. This course is intended for those nursing students post-MS or enrolled in doctoral study who wish to teach in the academic and/or practice environment. However, students in a MS program who are interested may register for the course with permission.

NURS.7150 Independent Study (Formerly 33.715) - Credits: 3

This independent study course is designed to enhance the international student’s verbal and writing skills in order to successfully integrate in a doctoral level program. The student will meet weekly with the course instructor in addition to participating in a formal communication and writing course for international students.

NURS.7160 Qualitative Methods (Formerly 33.716) - Credits: 3

The study of predominating qualitative methodology in the health sciences literature. Emphasis is on phenomenology, ethnography, life history/narrative, critical incidents, grounded theory, case study, and associated methodologies.
NURS.7170 Evaluation Research (Formerly 33.717) - Credits: 3
This course focus is on the basic concepts of evaluation research and their application to education, health and social programs. Specific design and analytic approaches that effect quality evaluation research will be reviewed. Students will design a mock evaluation study. Prerequisites: Completion of a graduate level research methods course.

NURS.7180 Directed Study (Formerly 33.718) - Credits: 1-4
NURS.7300 Quantitative Research Methods and Grantsmanship (Formerly 33.730) - Credits: 3
This course introduces students to strategies and methods in research including an analysis of theoretical and empirical links, operationalization of concepts, research design, and ethics in behavioral research. Students will identify appropriate funding sources and complete a research grant application.

NURS.7310 Health Promotion Research (Formerly 33.731) - Credits: 3
This course focuses on interdisciplinary health promotion research that targets diverse individuals, families, groups, and communities/society. Students will identify and analyze ethical issues, philosophical and conceptual underpinnings, measurement principles and major gaps in current knowledge in nursing and health promotion. Students will critique research approaches to health promotion studies and propose a research study in a topic relevant to health promotion.

NURS.7330 Graduate Project - Nursing (Formerly 33.733) - Credits: 3
Course focus is on application of the nursing research process. The student actively engages in at least two aspects of research under the guidance of a faculty mentor. The course product has practical implications for nursing practice.

NURS.7370 Advanced Qualitative Methods (Formerly 33.737) - Credits: 3
This course will focus on the in-depth historical and philosophical underpinnings of qualitative research. The student will examine and critique various analytic qualitative methods. The student will complete a project incorporating qualitative analysis using a qualitative software program.

NURS.7390 Mentored Research Experience (Formerly 33.739) - Credits: 3
In this course, students participate in a mentored research experience. Students actively contribute as a member of a research study that will contribute to scientific knowledge. Opportunities are provided for the application of research skills and the dissemination of research with an emphasis on an interdisciplinary approach. This course also includes a monthly seminar, which focuses on ethical underpinnings, cultural considerations and disparities in health research.

NURS.7430 Master’s Thesis - Nursing (Formerly 33.743) - Credits: 3
Course focus is on the application of the full research process to a topic relevant to nursing practice and/or health outcomes. The student is expected to propose, conduct and defend the study under the guidance of a designated faculty thesis committee.

NURS.7520 Independent Study - Credits: 9
Independent Study

NURS.7530 Doctoral Dissertation (Formerly 33.753) - Credits: 1-6
A structured series of sequenced seminars which guides students through dissertation proposal development, defense, collection and analysis of data. The first seminar concludes with the development of Chapters I and II of the dissertation; the second seminar concludes with defense of the proposal; and the third seminar culminates in the development of discussion and conclusions of the dissertation effort.

NURS.7560 Doctoral Dissertation (Formerly 33.756) - Credits: 6
A structured series of sequenced seminars which guides students through dissertation proposal development, defense, collection and analysis of data. The first seminar concludes with the development of Chapters I and II of the dissertation; the second seminar concludes with defense of the proposal; and the third seminar culminates in the development of discussion and conclusions of the dissertation effort.

NURS.7590 Doctoral Dissertation (Formerly 33.759) - Credits: 9
A structured series of sequenced seminars which guides students through dissertation proposal development, defense, collection and analysis of data. The first seminar concludes with the development of Chapters I and II of the dissertation; the second seminar concludes with defense of the proposal; and the third seminar culminates in the development of discussion and conclusions of the dissertation effort.
NURS.7610 Continued Grad Research (Formerly 33.761) - Credits: 1

Continued Grad Research

NURS.7630 Continued Graduate Research (Formerly 33.763) - Credits: 3

NURS.7690 Continued Graduate Research (Formerly 33.769) - Credits: 9

NURS.7700 Evidence Appraisal (Formerly 33.770) - Credits: 3

In this course the student will explore the role of the DNP in evaluating evidence to inform practice. The student will also identify a critical issue or influential trend within the health care system that impacts health care delivery. Methods relevant to reviewing, analyzing, synthesizing, and applying evidence from the scientific literature will be discussed. Models of systematic reviews of the literature will be explored and implemented. Decisions will be made relative to the student’s topical area of interest and identification of the Scholarly Project Chair.

NURS.7710 Advanced Nursing Leadership and Management (Formerly 33.771) - Credits: 3

This course consists of a seminar and leadership experience. The seminar will explore the major concepts in leadership and management and their application in the health care setting. The role of DNP will also be discussed in terms of leadership in the health policy, education, and clinical settings. A leadership project will be completed by the end of the semester.

NURS.7720 Scholarly Project Implementation (Formerly 33.772) - Credits: 3

In this course, students will implement their DNP Projects according to DNP Scholarly Project guidelines. Building on the course work of previous semesters, students will share progress on their projects and discuss issues related to implementation. Course work will guide students through the phases of implementation and evaluation.

NURS.7730 Evidence Dissemination, Advocacy & Policy (Formerly 33.773) - Credits: 3

This course will include a weekly seminar. The students will complete the scholarly project by undertaking dissemination activities. The student will analyze policies influencing DNP practice and quality, cost, and access to health care and participate in the policy making process.

NURS.7740 Scholarly Project Design (Formerly 33.774) - Credits: 3

In this course, the student will design and present the Scholarly Project proposal. Students will meet biweekly with the scholarly project chair to develop the DNP scholarly project using knowledge acquired in previous course work. Students will complete a University of Massachusetts Lowell Institutional Review Board application that considers ethical and cultural issues related to the scholarly project.

NURS.7760 DNP Immersion - Credits: 3

This course focuses on the synthesis of advanced practice leadership and evidence-based practice by the DNP student in the health care specialty of their choice. In preparation for the translation of acquired knowledge to practice in the scholar practice role of the DNP, the student completes this practicum under the guidance and mentor-ship of faculty and a preceptor. The DNP student utilizes this opportunity to refine and incorporate evidence-based practice into the care and education of patients, families and other professionals. The DNP student will assume a leadership role in some aspect of the care and/or education provided in a specialty practice. Students will utilize core concepts from the DNP Essentials.

NURS.7770 Independent Study: Practicum in Nursing Education (Formerly 33.777) - Credits: 3

In this independent study practicum students will apply knowledge of curriculum and teaching in nursing in an educational setting under the mentorship of a nursing faculty member. Students will actively engage in curriculum development, evaluation and refinement, course preparation, classroom and clinical teaching, and student evaluation. The nurse educator role will be explored.

NURS.7930 Cooperative Education (Formerly 33.793) - Credits: 1