Program Change Request

New Program Proposal

Date Submitted: 11/22/19 3:26 pm

Viewing: Applied Drug Development

Parent Plan: MAJ: Pharmaceutical Sciences MS

Last edit: 11/26/19 11:53 am

Changes proposed by: clauhon

Name of the school or college academic planner who you consulted with on this proposal:

Name

Mel de Villiers - PHM

Proposal Abstract/Summary:

Applied Drug Development will be a new named option under the Master of Science in Pharmaceutical Sciences degree. As proposed, the named option will be a 30 credit, accelerated, distance-delivered degree program in which students will be able to complete the course of study in three terms (two semesters + one summer term).

The Applied Drug Development named option will appeal to recent graduates as well as working professionals. The accelerated degree will provide the opportunity to complete the degree in 1 calendar year. This provides a "fifth year" option for students wishing to prepare for employment in the pharmaceutical and/or bio-pharmaceutical industry. It is anticipated that a significant number of students may be working full-time while completing this program. The named option is structured to accommodate a student's needs in that students may register as part-time students to complete the program in a longer time frame.

PharmSci APPROVED: 10/1/19
SOP APC APPROVED: 11/15/19

Basic Information

Type of Program: Named Option

Parent Program: MAJ: Pharmaceutical Sciences MS
Parent Audience: Graduate or professional
Parent Home Department: PHARMACY
Parent School/College: School of Pharmacy

The program will be governed by the home department/academic unit as specified. Will an additional coordinating or oversight committee be established for the program?

No

Parent is in the Graduate School: Yes

SIS Code:

SIS Description:

Transcript Title: Applied Drug Development

Named Options:
- Sub Plan 1068: No Title Found
- Sub Plan 1118: No Title Found

Does the parent program offer this as an additional major as well? 

No

Roles by Responsibility: List one person for each role in the drop down list. Use the green + to create additional boxes.

<table>
<thead>
<tr>
<th>Role Type</th>
<th>Name (Last, First)</th>
<th>Email</th>
<th>Phone</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Chair</td>
<td>Buxton, Eric C</td>
<td><a href="mailto:ebuxton@wisc.edu">ebuxton@wisc.edu</a></td>
<td>608/265-2259</td>
<td>Chair, Division of Pharmacy Professional Development</td>
</tr>
<tr>
<td>Faculty Director</td>
<td>Buxton, Eric C</td>
<td><a href="mailto:ebuxton@wisc.edu">ebuxton@wisc.edu</a></td>
<td>608/265-2259</td>
<td>Chair, Division of Pharmacy Professional Development</td>
</tr>
<tr>
<td>Primary Contact</td>
<td>Buxton, Eric C</td>
<td><a href="mailto:ebuxton@wisc.edu">ebuxton@wisc.edu</a></td>
<td>608/265-2259</td>
<td>Chair, Division of Pharmacy Professional Development</td>
</tr>
<tr>
<td>Primary Dean's Office Contact</td>
<td>De Villiers, Melgardt M</td>
<td><a href="mailto:devilliers@wisc.edu">devilliers@wisc.edu</a></td>
<td>608/890-0732</td>
<td>Vice Dean for Academic Affairs</td>
</tr>
</tbody>
</table>

List the departments that have a vested interest in this proposal.

<table>
<thead>
<tr>
<th>Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Pharmacy (PHARMACY)</td>
</tr>
</tbody>
</table>

Are all program reviews in the home academic unit up to date? Yes
Are all assessment plans in the home academic unit up to date? Yes
Are all assessment reports in the home academic unit up to date? Yes

Mode of Delivery: Distance Education (>50% - 99%)

Provide information on how any lab courses required for the degree will be handled.

The laboratory course will initially be offered as an instructor led, face-to-face course on campus. Future goals include offering the lab course in a condensed schedule during intersession and summer terms to better accommodate working professionals. In the future, we also plan to develop lab simulation courseware that will provide students the option to complete laboratory learning experiences at a distance.
Will this program be part of a consortial or collaborative arrangement with another college or university?
No

Will instruction take place at a location geographically separate from UW-Madison?
No

Parent has outside accreditation:
No

Graduates of parent program seek licensure or certification after graduation.
No

First term of student enrollment:
Fall 2020 (1212)

When will the application for the first term of enrollment open?
Spring 2020 (1204)

Which terms will you allow new students to enroll? What are the application deadlines for each term selected?

<table>
<thead>
<tr>
<th>Start Term</th>
<th>Application Deadline MM/DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>07/31</td>
</tr>
<tr>
<td>Spring</td>
<td>10/31</td>
</tr>
</tbody>
</table>

Year of three year check-in to GFEC (3 years after first student enrollment):
2024

Year of first program review (5 years after first student enrollment):
2026

If this proposal is approved, describe the implementation plan and timeline.

The implementation plan includes the following key milestones and timeline:
Final program approval - December 2019
Finalize course schedule - December 2019
Recruit and hire academic advisor - December 2019
Launch marketing campaign - January 2020
Begin accepting applications for fall 2020 - January 2020
Complete production of distance-delivered courses for fall 2020 - June 2020
Close applications for Fall 2020 - July 2020
Admit first class - September 2020
Complete production of distance-delivered courses for spring 2021 - October 2020
Recruit and employ second academic advisor - September 2020
Complete production of distance-delivered courses for summer 2021 - March 2021
Complete year-one self-assessment - July 2021

Rationale and Justifications

How does the named option relate to the major and to other named options in the major, if relevant?
The PhD in Pharmaceutical Science-Applied Drug Development program prepares individuals primarily for research and development roles in the pharmaceutical and bio-pharmaceutical industries. The current Pharmaceutical Sciences MS degree is an early exit option for students who elect to not complete their PhD program. The current MS degree is non-admitting and students are admitted directly to the PhD program.

The proposed named option is intended to provide students with the knowledge, skills, and abilities to work in a variety of roles within the biotech and pharmaceutical industries. Graduates of the named option program will contribute in research and development laboratories as well as manufacturing, quality, and systems roles within pharmaceutical industry organizations. The program fills a gap between research scientists and the entry level
Pharmaceutical Science faculty have expressed interest in making courses offered within the named option to Pharmaceutical Science PhD candidates - as many of the topics would benefit PhD level scientists who plan on working in industry as well. The named option provides SOP greater capabilities in the area of applied drug development - enhancing our teaching in the areas of process, quality, regulatory affairs, and pharmacoeconomics.

We plan to open some of the courses to PhD and Master’s level students in the current Pharmaceutical Sciences program and provide them an expanded number of course options and learning opportunities in areas that have long been in demand, but to date have not been available. Examples include courses in quality, regulatory affairs, and project management.

Why is the program being proposed? What is its purpose?

The named option provides constituents with applicable skills that enhance their competitiveness for employment in the pharmaceutical and bio-pharmaceutical industries. Currently, The Division of Pharmacy Professional Development (DPPD) provides non-credit professional development and continuing education courses to working professionals in the pharmaceutical and bio-pharmaceutical industries. And though valuable, the nature of these programs appeals to a limited number of participants and a limited segment of the overall market. The addition of a professional master’s degree provides the opportunity to vertically integrate our offerings while meeting a broader audience.

The mission of the SOP and DPPD is to advance knowledge and professional practice in pharmacy and the pharmaceutical sciences. This named option creates a higher level of professional practice across the life-cycle of drug development, manufacture, and ongoing safety management. The program will provide students with career opportunities by meeting a demand for knowledgeable and skilled workers in these rapidly expanding industries. The named option will produce industry-ready professionals to fill professional and technical jobs in the state, regional, national, and international economy.

Within the Dane County economy alone, there are unfilled, well-paying positions that require the knowledge, skills, and abilities that this named option is designed to provide. The industry partners that worked with DPPD in designing the program described the unfilled positions at their companies as well as anticipated job growth due to planned expansion. Through this program we will provide students with career opportunities while supporting the growing pharmaceutical and bio-pharmaceutical industry in Wisconsin and beyond.

Do current students need or want the program? Provide evidence.

The named option is designed to provide students with knowledge, skills, and abilities that prepare and make them more competitive for jobs in the pharmaceutical and bio-pharmaceutical industry.

Currently, graduates with bachelor’s degrees in Biology, Chemistry, Biochemistry, Chemical Engineering, Industrial Engineering, and related life-sciences are hired into entry level positions by companies in the industry. Career development options are limited and professional development consists of on-the-job training and limited extra-curricular continuing education. The named option will provide students an advanced level of preparation; preparing them for employment above entry level.

For working professionals, the named option provides an opportunity to advance their careers at an accelerated pace. Senior managers from multiple organizations have told us that they see the program as a vehicle to develop their high-potential employees, and would support their employees with tuition reimbursement benefits.

Evidence of student demand is also seen in our non-credit program offerings. We are seeing
consistent increases in our pharmaceutical sciences programs (~30%) over the past 5 years. This is especially true for courses that address drug development topics.

What is the market, workforce, and industry need for this program? Provide evidence.

Market and competitive assessments performed by DPPD have identified a significant and unmet need for industry professionals at the master's level. As designed, the named option creates a new class of professionals that fulfill a variety of roles in the previously ignored space between entry-level bachelor degree holders and PhD scientists. The named option provides students with knowledge, skills, and abilities that prepare and make them more competitive for mid-level jobs in the bioprocessing industry. Employment for chemical and biological scientist/technician positions in the pharmaceutical and bio-pharmaceutical industry is projected to grow at 11% and 7% respectively by 2028. Median salaries for these positions ranges from $70,000 to $85,000 (source: US Bureau of Labor Statistics).

The current industry practice is to employ graduates with chemistry, biology, biochemistry, and chemical engineering bachelor degrees and provide on-the-job training. This approach is expensive, time consuming, and severely constrains job opportunities for the employee. The named option will provide the ability for a program graduate to enter the workforce at a higher level and to be more competitive in their career progression.

The rapid growth rate for employment in the pharmaceutical and bio-pharmaceutical industries is particularly noticeable in the Dane County area. Catalent, Inc. has recently announced that they will be increasing the workforce of their local manufacturing operation from 350 to 700 employees over the next 2 years. Similarly, Covance, Inc. has announced plans for significant expansion of their Madison, WI operations, essentially doubling their local employment. Organizations in related industries, e.g. Exact Sciences, have also announced plans to significantly increase employment. The jobs being created are those targeted by the named option. Similar growth is being reported regionally, nationally, and internationally, providing graduates with substantial opportunities for career growth and mobility.

The named option will enhance employment opportunities by preparing graduates for careers in the pharmaceutical and bio-pharmaceutical industry. The unemployment rates for recent undergraduates in biology and life sciences is 7.4% compared to the 2.4% unemployment rate for recent graduate degree holders (source: Georgetown University Center on Education and the Workforce - Analysis of US Census Bureau, American Community Survey Micro Data. 2009-2012). The knowledge and skills provided to graduates will make them highly desirable candidates for careers in industry.

The Division of Continuing Studies performed a market assessment identifying industry demand and employment for master's level professionals in the pharmaceutical and bio-pharmaceutical industries. The DCS assessment found little demand for master's prepared individuals, though a high demand at the bachelor's level. This can be explained by understanding that the study relied on current employment trends and that there is a small, but increasing number of master's degree programs. In addition, employers generally list minimal requirements for a position, rather than the desired level of preparation. In our face-to-face meetings with director and executive-level professionals in industry, we heard about the need for a program like the named option, and their willingness to support our efforts in the design, development, and delivery of the program.

What gap in the program array is it intended to fill?

At present there is no program in the UW-Madison array that specifically addresses the needs of professionals in the pharmaceutical industry. This program provides a continuum from undergraduate preparation in biology, chemistry, biochemistry, and / or chemical engineering and provides students with knowledge and skills that are directly applicable to all phases of drug development.
Faculty and Staff Resources

List the core program faculty and staff with title and departmental affiliation(s) who are primarily involved and will participate in the delivery and oversight.

<table>
<thead>
<tr>
<th>Name (Last, First)</th>
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<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buxton, Eric C</td>
<td>School of Pharmacy (PHARMACY)</td>
<td>Division Chair / Clinical Associate Professor</td>
</tr>
<tr>
<td>Lauhon, Charles T</td>
<td>School of Pharmacy (PHARMACY)</td>
<td>Associate Dean of Graduate Education</td>
</tr>
<tr>
<td>Audhya, Anjon W</td>
<td>Biomolecular Chemistry (BMOLCHEM)</td>
<td>Professor</td>
</tr>
<tr>
<td>Ge, Ying</td>
<td>Cell and Regenerative Biology (CELL R BIO)</td>
<td>Professor</td>
</tr>
<tr>
<td>Dickmann, Leslie J</td>
<td>School of Pharmacy (PHARMACY)</td>
<td>Faculty Associate</td>
</tr>
<tr>
<td>Scarlett, Cameron O</td>
<td>School of Pharmacy (PHARMACY)</td>
<td>Director, Mass Spec Lab</td>
</tr>
<tr>
<td>Johnson, Jeffrey A</td>
<td>School of Pharmacy (PHARMACY)</td>
<td>Professor</td>
</tr>
<tr>
<td>Kwon, Glen S</td>
<td>School of Pharmacy (PHARMACY)</td>
<td>Professor</td>
</tr>
</tbody>
</table>

What resources are available to support faculty, staff, labs, equipment, etc.? Faculty and staff support will be provided through existing resources in the School of Pharmacy, including office space, administrative support, human resources, etc. IT support will be provided through existing School of Pharmacy systems and structures. Laboratory courses will use existing facilities in the School of Pharmacy and School of Medicine and Public Health. We have secured commitments from both schools to schedule lab courses during schedule openings.

Program advisor(s) with title and departmental affiliation(s).

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<tr>
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<tbody>
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<td>Associate Dean for Graduate Education</td>
</tr>
</tbody>
</table>

Describe how student services and advising will be supported. The program business plan includes funding for student services and advising professional beginning 8 months prior to the first semester of classes. This position will be dedicated to this degree program. In addition, the project plan includes the addition of up to three student services and advising professionals as enrollments dictate. All positions will be supported through 131 funds.

Confirm that the program advisor(s) or coordinator(s) have been consulted and reviewed this proposal.

Resources, Budget, and Finance

Is this a revenue program? Yes

What is the tuition structure for this program? Online/Distance per-credit tuition

Select a tuition increment:

$1,500/credit

What is the rationale for selecting this tuition increment? This tuition price point positions our degree cost ($45,000) competitively, and slightly above the median of current competitors. Given that our target market includes recent graduates, we determined that the
Provide a summary business plan.

The Applied Drug Development named option is designed to be an online, professional master’s degree that can be completed in 1 year (two semesters + summer session). The degree program target audience includes recent graduates who possess bachelor’s degrees in biology, chemistry, biochemistry, chemical engineering and related STEM fields. The program is designed to provide students with the core competencies needed to be successful in all aspects of drug development. The program is scheduled to begin with the fall semester of 2020.

Enrollment - The business plan includes the enrollment of 30 full-time students in year one, and scaling up to 80 full time students in 2023 and beyond. In addition we plan to admit 20 part-time (50%) students in 2021 and scale the number of part-time students to 100 by 2025.

Finance - The program will operate as a Fund 131 program. A market-based tuition of $1,500/credit (resident and non-resident) will produce a positive operating margin in the first year, and provide an initial investment pay-back in 1.92 years.

Development - Funding for program development will be shared by the Division of Continuing Studies (DCS) and the Division of Pharmacy Professional Development (DPPD). DCS will provide development year funding for a program director and 50% student services professional. In addition, DCS will provide instructional design and marketing support to the program. DPPD will fund administrative support, division chair, faculty associate (20%), and expenses related to market assessment and industrial advisory board.

Investing the Margin - in addition to fully funding the named option, the business plan includes funding for School of Pharmacy (SOP) faculty lines, conversion of SOP courses to digital delivery, new course development, and the development of a new professional master’s degree program.

PLEASE NOTE - COPIES OF THE DETAILED BUDGET SPREADSHEET AND ONLINE TUITION REQUEST ARE ATTACHED TO THIS PROPOSAL IN "SUPPORTING INFORMATION" SECTION

Provide an overview of plans for funding the program including but not limited to program administration, instructional/curricular delivery, technology needs and program assessment.

Program funding will be supported by the Division of Continuing Studies (DCS) and the Division of Pharmacy Professional Development (DPPD). DCS will provide funding for year one development to include a program director, 50% student services professional, instructional design support for course development, and program marketing. DPPD will provide administrative and support for market research and program/course development. Beginning in year two, DPPD will assume all operating expenses with the exception of instructional design for online courses and program marketing which will remain with DCS.

The business plan includes investments in educational technology needs for the program as well as the SOP. The business plan identifies the use of existing campus educational technology infrastructure and DCS program services for instructional design and program marketing.
The plan includes funding for instructional support for faculty as well as allocations for faculty professional development in online and distance education. Program assessment and governance will be provided through existing SOP and campus structures.

What is the marketing plan?

The marketing plan includes "upstream" (market research) and "downstream" (go to market) elements. Upstream - the upstream marketing efforts are largely completed and include obtaining industry "voice of customer" (VOC), a competitive assessment, a market assessment, target demographics/psychographics, determination of price-point, and the creation of an industrial advisory board.

Downstream - Downstream marketing efforts will be designed to achieve enrollment targets. These efforts will be led by DCS. The downstream marketing campaign will build on the market intelligence from upstream efforts. Marketing messaging will focus on job and financial opportunities, short time to completion, and SOP reputation. Downstream marketing communications will employ customer touches in
a variety of digital media and social networking platforms. Marketing automation will be employed to assure frequent and strategic customer “touches” designed to lead prospective students through the program pipeline.

In addition to digital and media communications, the program director and student services professional will contact prospective students. These efforts will enhance relationships between the student, program staff and faculty.

The program director will be responsible for maintaining the industrial advisory board and industry contacts as a source of potential student referrals as well as a vehicle for student job placement.

Does the program or change require substantial new resources other than those just described? Describe the needs. Confirm that the dean is committed to providing the resources.

There are no additional / substantial new resources required

Are new Library resources needed to support this program?

No

Describe plans for funding students including but not limited to funding sources and how funding decisions are made.

The business plan includes some financial support for students in the form of scholarships and discounts. Our expectation is that the majority of students will be self-funded, funded through employer benefit plans, or a combination of both.

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**Curriculum and Requirements**

Parent Plan Admissions/How To Get In Requirements

Students apply to the Master of Science in Pharmaceutical Sciences through one of these paths:

M.S. Named Option in Applied Drug Development [REGISTRAR’S OFFICE: PLEASE ADD LINK]

**Ph.D. in Pharmaceutical Sciences**

Guide Admissions/How to Get In tab

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Approved Shared Content from /shared/graduate-school-admissions/

Last Approved: Oct 16, 2019 6:46pm

Please consult the table below for key information about this degree program’s admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program’s website.

Graduate admissions is a two-step process between academic programs and the Graduate School. **Applicants must meet the minimum requirements of the Graduate School as well as the program(s).** Once you have researched the graduate program(s) you are interested in, apply online.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Deadline</strong></td>
<td>July 31</td>
</tr>
<tr>
<td><strong>Spring Deadline</strong></td>
<td>October 31</td>
</tr>
<tr>
<td><strong>Summer Deadline</strong></td>
<td>The program does not admit for the summer term.</td>
</tr>
<tr>
<td><strong>GRE (Graduate Record Examinations)</strong></td>
<td>Required.</td>
</tr>
<tr>
<td><strong>English Proficiency Test</strong></td>
<td>Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements <a href="https://grad.wisc.edu/apply/requirements/#english-proficiency">https://grad.wisc.edu/apply/requirements/#english-proficiency</a>.</td>
</tr>
<tr>
<td><strong>Other Test(s) (e.g., GMAT, MCAT)</strong></td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Letters of Recommendation Required</strong></td>
<td>2</td>
</tr>
</tbody>
</table>

Accepted students commonly have strong scientific backgrounds and a desire to work in the biopharmaceutical industry. Students with undergraduate degrees in the physical or biological sciences, engineering, pharmacy, and related fields are encouraged to apply.

Please see admissions on the program website for the application deadline and required supplemental materials. Related links describe frequently-asked admissions questions, selection criteria, and typical pharmaceutical career paths for various undergraduate majors.

Describe plans for recruiting students to this program.
Working in concert with the Division of Continuing Studies, we plan to:
- Travel to college and career fairs across the United States (Host institution invites many colleges to present at informational booths)
- Create pop-up events and lunch and learns at targeted universities and businesses (where UW-Madison is the only visiting institution, often a more intimate event with a presentation)
- Host a series of events on UW-Madison campus targeting UW-Madison undergraduate students (examples might include: tips for your application, difference between masters and PhD, panel of students or admissions committee)
- Work with Applied Drug Development program staff to host booths at targeted conferences and career fairs to reach working professionals
- Call all leads within 24 hours of RFI form submission including video conferencing as requested
- One to one email and texting with prospective students to answer questions and connect to program staff as appropriate
- Develop automated campaigns to move prospective from interested to started the application and started the application to completed the application
- Develop automated yield campaigns and strategies to get accepted students to enroll
- Coordinate many of the above marketing activities in conjunction with partner departments (e.g., partners take program brochures to conferences they attend and vice versa)

Projected Annual Enrollment:

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>30 FT</td>
</tr>
<tr>
<td>Year 2</td>
<td>50 FT</td>
</tr>
<tr>
<td>Year 3</td>
<td>70 FT</td>
</tr>
<tr>
<td>Year 4</td>
<td>80 FT</td>
</tr>
<tr>
<td>Year 2</td>
<td>20 PT</td>
</tr>
<tr>
<td>Year 3</td>
<td>50 PT</td>
</tr>
<tr>
<td>Year 4</td>
<td>70 PT</td>
</tr>
<tr>
<td>Year 5</td>
<td>90 PT</td>
</tr>
</tbody>
</table>

Maximum enrollment that can be supported with existing instructional and student services resources: 200

Those who are not familiar with using the HTML editor fields may upload a document with information about the curriculum for use by those who will format and edit the content that will appear in the Guide.

Parent Requirements

Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/
Last Approved: Oct 25, 2018 11:29am

Minimum Graduate School Requirements

Review the Graduate School minimum [academic progress and degree requirements](https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept Approver), in addition to the program requirements listed below.

Major Requirements
MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

Approved Shared Content from /shared/graduate-school-mode-instruction-definitions/
Last Approved: Oct 25, 2018 11:30am

Evening/Weekend: These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

Online: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

Hybrid: These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

Accelerated: These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

University General Education Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<a href="https://registrar.wisc.edu/course-guide/">https://registrar.wisc.edu/course-guide/</a>).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required.</td>
</tr>
<tr>
<td>Other Grade Requirements Assessments and Examinations</td>
<td>See one of the Named Options in the program for policy information.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>No language requirements.</td>
</tr>
</tbody>
</table>

Required COURSES

Select a [Named Option](#) for courses required.

Named Options (Sub-Majors)

A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferral. Students pursuing the M.S. in Pharmaceutical Sciences must select one of the following named options: [REGISTRAR'S OFFICE: ADD TILES HERE :) - Emily in the Grad School]

Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/
Last Approved: Oct 25, 2018 11:30am

Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

Named Option Requirements

**MODE OF INSTRUCTION**

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Face to Face</th>
<th>Evening/Weekend</th>
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<td>No</td>
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Mode of Instruction Definitions

Approved Shared Content from /shared/graduate-school-mode-instruction-definitions/

**CURRICULAR REQUIREMENTS**

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</tr>
<tr>
<td>Minimum Credit Requirement</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university’s Course Guide (<a href="https://RegistrarWisc.edu/course-guide/">https://RegistrarWisc.edu/course-guide/</a>).</td>
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<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>Candidates will be dropped from the program if they receive more than 7 credits of grades at the BC level or lower. This applies to formal courses and research credits.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>The program expects the M.S. candidate to complete a capstone project under guidance of an approved mentor.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>No language requirements</td>
</tr>
</tbody>
</table>

**Required COURSES**

PHM SCI 750 The Drug Development Process
PHM SCI 751 Introduction to Regulatory Practice
PHM SCI 759 Current Trends in Drug Discovery and Development
PHM SCI 752 GxP (Good Practice): Working in a Regulated Environment
B M I/STAT 541 Introduction to Biostatistics

PHM SCI/M&ENVTOX/MEDICINE/ONCOLOGY/PHMCOL-M/POP HLTH 625 Toxicology I
or
PHM SCI 768 Pharmacokinetics
PHMCOL-M 781 Molecular and Cellular Principles in Pharmacology
PHM SCI 755 Laboratory and Instrumentation Methods
PHM SCI 753 Pharmaceutical Economics and Project Management
PHM SCI 760 Capstone for Applied Drug Development

Total credits required:
30

Parent Plan Graduate Policies

Approved Shared Content from /shared/graduate-school-policies/
Last Approved: Oct 25, 2018 11:30am

Graduate School Policies

The Graduate School's Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Major-Specific Policies

Graduate Program Handbook

The Graduate Program Handbook is the repository for all of the program's policies and requirements.

Prior Coursework

Graduate Work from Other Institutions
   See Named Options for policy information.

UW–Madison Undergraduate
   See Named Options for policy information.

UW–Madison University Special
   See Named Options for policy information.

ProbatioN

   See Named Options for policy information.

ADVISOR / COMMITTEE

   See Named Options for policy information.

CREDITS PER TERM ALLOWED

   See Named Options for policy information.

Time Constraints

   See Named Options for policy information.

Other

   See Named Options for policy information.
Approved Shared Content from /shared/graduate-school-policies/
Last Approved: Oct 25, 2018 11:30am

Graduate School Policies

The [Graduate School’s Academic Policies and Procedures](#) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Named Option-Specific Policies

**Graduate Program Handbook**

The Graduate Program Handbook is the repository for all of the program's policies and requirements.

**Prior Coursework**

- **Graduate Work from Other Institutions**
  
  No graduate work from other institutions is accepted.

- **UW–Madison Undergraduate**
  
  With program approval, students are allowed to count no more than 7 credits of UW–Madison courses numbered 500 or above (earned as a UW–Madison undergraduate) toward the M.S. degree. Coursework should be presented to the SoP graduate dean in the first semester of enrollment for consideration. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

- **UW–Madison University Special**
  
  With program approval, students are allowed to count no more than 9 credits of coursework numbered 500 or above taken as a UW–Madison special student. coursework should be presented to the SoP graduate dean in the first semester of enrollment for consideration. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

**ProbatioN**

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

- Good standing (progressing according to standards).
- Probation (not progressing according to standards but permitted to enroll; specific plan with dates and deadlines in place in regard to removal of probationary status).
- Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor).

**ADVISOR / COMMITTEE**

Students will be assigned an advisor within the program; students will have an approved mentor for their capstone project.

**CREDITS PER TERM ALLOWED**

15 credits

**Time Constraints**

Master's degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence; that coursework may not count toward Graduate School credit requirements.

Discuss expected progress to degree and time to degree. For undergraduate programs discuss considerations for supporting students to complete the degree in four academic years.
The curriculum design and schedule of classes supports a student's ability to complete the degree in an accelerated (1 year) time frame. We expect that full-time students will complete the program in two semesters and a summer term. Part-time students will likely complete the degree program in two to three years.

**Program Learning Outcomes and Assessment**

**Parent Program Learning Outcomes**
- Demonstrate critical knowledge and in-depth understanding of principles in pharmaceutical sciences and in the student's area of expertise.
- Identify important research questions, formulate testable hypotheses, and design experiments to test those hypotheses.
- Conduct research that contributes to the student's field of study.
- Communicate scientific knowledge and research results effectively to a range of audiences.
- Apply ethical principles in conducting scientific research.

Summarize the assessment plan.
- The Associate Dean for Graduate Education, with support from the SOP Assessment Office, is responsible for collecting and analyzing annual assessment data and presenting the subsequent report to the Pharmaceutical Sciences Division faculty. Data will be collected annually on all learning outcomes but analyzed and reported every other year to ensure a large enough sample. Recommendations and implementation are the responsibility of the assistant dean for graduate studies with assistance from the graduate program coordinator.

**Commitments**

All required courses are approved through the school/college level.
- Yes

Courses are offered on a regular basis to allow timely completion.
- Yes

Courses have enrollment capacity.
- Yes

Students may complete only 1 named option within a plan code.
- Yes

The program faculty/staff will ensure the program website, Advance Your Career materials if applicable, and other presentations are consistent with the Guide information for this program.
- Yes

Credential will not be awarded retroactively to students who completed all of the requirements before the credential was approved.
- Yes

**Supporting Information**

List name and department of those who are in support of this proposal.

<table>
<thead>
<tr>
<th>Name (Last, First)</th>
<th>Date of contact/support letter received</th>
<th>School, College, or Department</th>
<th>Comment by contact person</th>
<th>On behalf of</th>
</tr>
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<tbody>
<tr>
<td>Mount, Kenneth J</td>
<td>10/16/2019</td>
<td>School of Med &amp; Pub Hlth ACAF (SMPH ACAF)</td>
<td>supports course usage (see attached)</td>
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<td>Keck, James L</td>
<td>10/21/2019</td>
<td>School of Med &amp; Pub</td>
<td>looks forward to contributing (see attached)</td>
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<tr>
<td>Name</td>
<td>Date</td>
<td>Department</td>
<td>Remarks</td>
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<td>Swanson, Steven M</td>
<td>5/18/2019</td>
<td>School of Pharmacy (PHARMACY)</td>
<td>supports program development (see attached)</td>
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<td>Husk, Bryan T</td>
<td>10/21/2019</td>
<td>School of Med &amp; Pub Hlth ACAF (SMPH ACAF)</td>
<td>We offer our enthusiastic support for this degree program.</td>
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<tr>
<td>Newton, Michael A</td>
<td>10/31/2019</td>
<td>Biostatistics and Medical Info (B MI)</td>
<td>Letter of support for program</td>
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