Program Change Request

New Program Proposal

Date Submitted: 11/02/20 2:06 pm

Viewing: : Certificate in Applied Bioinformatics

Last edit: 12/04/20 2:37 pm
Changes proposed by: mamith27

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

<table>
<thead>
<tr>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Andrea Poehling - MED</td>
</tr>
<tr>
<td>Marty Gustafson - DCS</td>
</tr>
</tbody>
</table>

Proposal Abstract/Summary:

The Graduate/Professional Certificate in Applied Bioinformatics is proposed for graduate students in the online MS in Applied Biotechnology program as a way to build their skill set in a growing discipline in demand in the field of biotechnology. The certificate will have a fully online, asynchronous curriculum comprised of 12 credits in four courses. A Capstone Certificate with the same curriculum is also being proposed for special non-degree seeking students. Both the degree and certificate are offered through a collaborative overseen by UW-Extended Campus, and include UW-Green Bay, UW-Madison, UW-Oshkosh, UW-Parkside, UW-Platteville, UW-Stevens Point, and UW-Whitewater. The need for this graduate certificate was identified by market research and input from the MS Applied Biotechnology advisory board.

We are requesting time at the 12/11/20 GFEC meeting and on the 12/17/20 UAPC consent agenda. Presenters will be SMPH Associate Dean James (Jim) Keck and Master of Science in Biotechnology Program Associate Director Natalie Betz.

Basic Information

Program State: Active

Type of Program: Certificate

Who is the audience? Graduate or professional

Home Department: Cell and Regenerative Biology (CELL R BIO)

School/College: School of Medicine and Public Health

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

Is this in the Graduate School? Yes
SIS Code:

SIS Description:

Transcript Title: Certificate in Applied Bioinformatics

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></th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Chair</td>
<td>Wellik, Deneen</td>
<td><a href="mailto:wellik@wisc.edu">wellik@wisc.edu</a></td>
<td>608/261</td>
</tr>
<tr>
<td>Faculty Director</td>
<td>Betz, Natalie</td>
<td><a href="mailto:nabetz@wisc.edu">nabetz@wisc.edu</a></td>
<td>608/261</td>
</tr>
<tr>
<td>Primary Contact</td>
<td>Husk, Bryan</td>
<td><a href="mailto:bthusk@wisc.edu">bthusk@wisc.edu</a></td>
<td>608/261</td>
</tr>
<tr>
<td>Primary Dean’s Office Contact</td>
<td>Poehling, Andrea</td>
<td><a href="mailto:adpoehl@wisc.edu">adpoehl@wisc.edu</a></td>
<td>608/261</td>
</tr>
<tr>
<td>Primary Contact</td>
<td>Smith, Michele</td>
<td><a href="mailto:msmith27@wisc.edu">msmith27@wisc.edu</a></td>
<td>608/261</td>
</tr>
</tbody>
</table>

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

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 (100% online)

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

No lab courses are required for the certificate.

Will this program be part of a consortial or collaborative arrangement with another college or university? Yes

Upload proposal: 

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

Will this program have outside accreditation? No

Will graduates of this program seek licensure or certification after graduation? No

First term of student enrollment: Fall 2021 (1222)
Year of three year check-in to GFEC (3 years after first student enrollment): 2025
Year of first program review (5 years after first student enrollment): 2027

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

The Graduate/Professional Certificate in Applied Bioinformatics represents an enhancement of the MS in Applied Biotechnology program. Funding levels for new courses (i.e. course development, revision and instruction) will be supported by UW-Extended Campus (UW-EX) following the current Memorandum of Understanding for the MS-ABT degree program. After approval by early Spring 2021, marketing of the certificate will be added to the existing MS-ABT marketing campaign, supported primarily by UW-EX with local UW-Madison support (funded by UW-EX). Recruiting will be rolled into the UW-Extended Campus enrollment team for the MS-ABT, with standard hand-off procedures to the admissions and student services staff in the MS-Applied Biotechnology Program at UW-Madison. The first course in the graduate/professional certificate program is an existing course in the MS-ABT and will be offered in Fall 2021.

Additional courses will be offered in Spring 2022, making it possible after full implementation to complete the certificate in one year.

Rationale and Justifications

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept. Approver

2/13
Why is the program being proposed? What is its purpose?
The Graduate Certificate in Applied Bioinformatics will be targeted toward working
biotechnology professionals who wish to work in the area of bioinformatics or entry level
professionals in the biotech or related industries but do not possess the required skillset.

The amount and speed of data are increasing across every biotechnology industry. Training in
Bioinformatics ensures a strong foundation in data analysis methods so working professionals
can create innovative solutions or improve the ones already in place. Learning tools for data
analysis ensures they can understand how to make key decisions about health, security, and
biotechnology information problems.

Completion of the graduate/professional certificate will provide the core competencies needed
to gain entry into bioinformatics positions, or to continue on to the online M.S in Applied
Biotechnology. According to the Biotechnology Innovation Organization, since 2001 U.S.
bioscience companies have increased employment by 19 percent and wage growth for the
industry consistently exceeds other occupations.

How is the certificate program designed to complement the degree/major of participating students?
The additional courses required to earn the graduate/professional certificate were developed
(and will be taught) by existing graduate program faculty and support the program learning
outcomes. Skills in bioinformatics complement the curriculum by offering a "deeper dive" into
data gathering, analysis and representation needed to specialize in this area of the field.

Do current students need or want the program? Provide evidence.
Research conducted by UW-Extended Campus found two primary audiences interested in an
Applied Bioinformatics certificate program. The first is current MS-ABT students to be served by
a Graduate Certificate, and the second is a Capstone certificate only (non-degree seeking)
student looking to enter into the field of bioinformatics from a peripheral career in
biotechnology or health care. It is estimated that 15% of degree-seeking students will choose to
complete the optional certificate program (i.e., the Graduate/Professional Certificate and the
program will attract at least 10 new certificate-only students per year in its first year (i.e.,
Capstone Certificate).

UW-EX anticipates strong enrollments with approximately 20 students completing the
graduate/professional certificate program each year by the end of year five across the
collaborative. (Note: UW-Madison’s enrollment will be a % of the total enrollment, estimated to
be between 25-30 students.) Based on experience with similar collaborative online graduate-
level programs, it is anticipated that the annual attrition rate will be moderate—less than 20
percent—for students moving through the certificate program.

What is the market, workforce, and industry need for this program? Provide evidence.
Based on a study by the University Professional and Continuing Education Association Center
for Research and Strategy Studies commissioned by UW-Extended Campus in 2019,
occupations related to bioinformatics are predicted to show strong growth over the next 10
years. The average annual salary for related occupations within the state and region was
approximately $80,000. In addition,
a focus group conducted during the Certificate curriculum development process comprised of
bioinformatics industry professionals confirmed the current need for more scientists with
bioinformatics skills and their support for the certificate as designed.

UPCEA also found there is a significant need for biotechnology professionals to succeed in
leadership and management positions within the industry. Nationally, biotechnology
professionals are projected to experience an annual growth rate of 1.8% over the next 10 years.
Forecasted growth rates for all biotech occupations are either equivalent to the national
average or higher, ranging from 0.7% to 1.1% annually on the national scale. Additionally,
bioinformatics professionals have a low unemployment rate (3.1%), significantly lower than the
national average for all occupations. Over the past five years, biotechnology professionals in
Wisconsin have experienced an average annual growth rate of 0.8%. This demand is expected to
continue to grow throughout 2018 and beyond.

UW-Madison, an academic partner and lead campus in this program, offers an M.S. in Clinical
and Health Informatics, and is proposing a new Capstone Certificate in Clinical and Health
Informatics. These programs differ in their focus on electronic health records and clinical data
analysis, whereas the bioinformatics program will offer a broader range of tools for analyzing
data in agricultural and biotechnology related fields.

What gap in the program array is it intended to fill?
The current MS-ABT curriculum does not include courses specific to bioinformatics, one of the
fastest growing segments of the field. Bioinformatics was identified by both the industry board
and market research as a gap in existing training for biotechnology
professionals, but it requires a greater amount of training for entry-level proficiency. Therefore
a graduate/professional certificate was appropriate to showcase the depth of work in the area.

Diversity and Inclusion

Describe how the proposed program curriculum and learning outcomes will advance inclusive excellence. Discuss specific components and requirements within the curric
and learning activities to engage in diversity with respect to perspectives, theories, practices, and populations different from themselves. If internships or clinical, practic
be required, discuss how students will have access to diverse practice settings.
The mission of UW-Extended Campus, the entity that will lead this graduate/professional
certificate effort, is to expand educational access to adults across the state. By design, the
collaborative online programs (to include the proposed Applied Bioinformatics Certificate) are
developed following an inclusive and equitable process involving a number of UW institutions,
diverse faculty, and external stakeholders. Faculty from participating UW campuses work with
UW-EX Instructional design staff to develop curriculum (learning outcomes, courses and
learning resources) to satisfy the diverse needs and interests of a broad range of adult,
nontraditional learners. A design feature and commitment of these programs is to incorporate
significant student-to-student interaction into the learning experience to include the sharing of
individual differences, prior knowledge, and life experiences. Instructional designers work with
faculty in the intentional development of activities within the courses which serve to increase
awareness, content knowledge and empathetic understanding of diversity and inclusivity – to
include the ways diverse individuals interact with each other and within systems and
institutions.

Discuss how the proposed program will actively pursue an equity in student recruitment, access, retention, and degree completion. Describe specific strategies to identify
for programs that do direct admissions. Include evidence-based and effective practices. Provide examples of academic and student support services that will be implem
completion.

UWEX engages primarily in digital marketing for all of its online programs. Digital marketing is
designed to reach all who are interested in its content and utilizes national campaigns and
associated trade organizations. They do not specifically reach out to specific diverse population
groups, so incorporate imagery of diverse individuals, use language that does not contain
jargon that may eliminate diverse populations, as well as make sure their ads reach
cities/geographical regions that are diverse.
UWEX awards each of the seven UW campuses involved in these programs $7000 for regional
marketing and recruitment. The experiences of UWEX with online programs suggests that 70% of
students apply to a campus within 100 miles of their residence. UW - Parkside is one of the
campuses involved and provides access to diverse populations in Milwaukee, Kenosha, and
Racine. The other campuses involved provide access to more rural communities in Wisconsin.
The reputation of UW - Madison not only regionally, but globally, also provides recognition to
students across the US and abroad.
Efforts at UW - Madison (in addition to digital marketing), include attendance at the ABRCMS
(Annual Biomedical Research Conference for Minority Students) in 2019, with its own trade
floor table to connect with prospective students. Over 5,000 undergraduate students attend
this conference each year and both the ABT and in-person MS in Biotechnology Program were
represented by Mr. Bryan Husk, who also was an invited guest speaker at the conference.
Attendance at this conference generated over 70 prospective leads for both degrees. The
bioinformatics certificates expand the portfolio of academic offerings for this important
audience. We plan on attending the ABRCMS conference in future years as well.
The UW-Madison MS in Biotechnology Program (which oversees both the in person and online
programs at UW - Madison) partner closely with PDC to coordinate targeted marketing for all
our program offerings. In addition to direct digital marketing campaigns to +45,000 UW-
Madison alumni, the same campaign engages relevant prospective students from the National
Name Exchange and McNair Scholars lists. We also work closely with regional biotechnology
companies to recruit out-of-state students to Madison for employment in the local
biotechnology industry and can provide them with further educational opportunities through
the MD degrees and now pointomics certicates. biotechnology companies are also equally interested in recruiting employees from diverse backgrounds. UW - Madison currently has 29% of its ABT students describe themselves as non-white. An essential goal of this and other UW collaborative online programs is to increase both the access for diverse audiences to this certificate and the success of those students once they enter the programs. Students enrolled in this program will receive academic and student support services that support an inclusive learning environment and equity in student success. Further, a UW Extended Campus success coach will work closely with all students to self-identify unique needs and barriers to their success. Success coaches will serve as a resource to either directly help students overcome those barriers or will point them to other resources available at their home campus or elsewhere. UW Extended Campus will maintain online student environments that will allow individuals from diverse ethnic backgrounds to connect with other students around academic programmatic interests and cultural similarities to help build points of commonality and understanding. Social media opportunities for student connection will be made available through Facebook, Twitter, and LinkedIn, to name a few. As part of its access mission, UW Extended Campus has several initiatives currently underway to attract more students from underrepresented groups into the UW System. For example, UW Extended Campus works with UW HELP to develop and disseminate brochures and materials specific to diverse communities around the state. Our diverse and targeted marketing efforts and diverse program array attract an increasingly diverse group of prospects. Successful retention begins with matching the student to the right program (i.e. program fit) and providing continuous and effective supports to students from admission to program completion.

Although our enrollment advisors apply the same general recruitment practice and protocols for all prospective students, they provide significant high touch supports and assistance for all prospects to include multiple communication options, information delivery formats, and expanded contact hours. Once admitted, UWEX's unique and nationally recognized Success Coaching model and service provide regular proactive and reactive advising to students throughout their learning experience. Retention rates in our programs exceed 80% - almost twice the national average for online programs. The UW Extended Campus program manager for the M.S. in Applied Biotechnology program will engage in outreach, working with

Consider how the proposed program will ensure equity in recruiting and hiring of faculty, instructional staff, and staff who will oversee the program curriculum, professor research/scholarship where relevant.

As shared above, each UWEX-supported online program invites participation from all UW campuses. As part of the collaborative online program model, participating campus partners satisfy all academic supports for the program to include, but not limited to, course instruction, academic advising, academic program assessment, curriculum review and revision, and academic support office functions. As the hiring authority for faculty and staff, each of our UW partners, including UW-Madison, follow their established institutional hiring practices and established diversity goals/plans. While the proposed certificate does not project a significant number of new faculty and staff, the MS-ABT partner institutions will continue to be committed to recruiting a culturally diverse campus community. Each institution has policies in place to support attainment of equity in the recruitment and hiring of faculty and instructional staff, when openings exist in their respective departments, schools, and colleges.

Note any plans or strategic initiatives at the university that are closely linked with the development of the proposed program. Note how efforts will align with the appropr that address diversity where relevant. To the extent that the response to questions related to diversity, equity, and inclusion are connected to plans at the department, sc connections explicit where relevant.

Development of online stackable and stand-alone credentials for non-tradition students follows the Chancellor’s campus strategic framework and plan to (1) expand access to a UW-Madison education, leveraging new modes of delivery, and (2) expand educational programming in areas of high student demand. Online, non-traditional programs by definition must expand our reach to new students that traditionally would not attend UW-Madison. In its first year of the MS-ABT program (which recruits the students for this program), enrollments met our diversity goals with approximately 26% students identifying as non-white.

### 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.

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<thead>
<tr>
<th>Name (Last, First)</th>
<th>Department</th>
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<tbody>
<tr>
<td></td>
<td>Cell and Developmental Biology (CDEP)</td>
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<tr>
<td></td>
<td>Academic Program Director</td>
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</table>
What resources are available to support faculty, staff, labs, equipment, etc.?

The Graduate/Professional Certificate in Applied Bioinformatics is a collaborative program that benefits from the shared academic and administrative resources of all partnering institutions. Faculty and staff from seven academic partners (UW-Green Bay, UW-Madison, UW-Oshkosh, UW-Parkside, UW-Platteville, UW-Stevens Point, and UW-Whitewater) collectively developed and approved the program curriculum, program competencies, student learning outcomes, and admission requirements. These partner institutions will be responsible for identifying qualified faculty and instructional staff to deliver coursework and assess student learning and conduct program review. Each partner institution has an academic program director who will be funded at 0.25 FTE to work with their respective academic units to implement the program. Collaboratively, these directors along with a designated campus continuing education representative or designate and the UW Extended Campus program manager will comprise the program workgroup. This team will meet quarterly and will oversee the ongoing growth, development, and performance of the graduate/professional certificate and associated MS-Applied Biotechnology degree program. In addition to initial funding and ongoing program management, UW Extended Campus provides state and national marketing, recruitment, all instructional design for course development and maintenance, web development and management, student success coaching, fiscal management and other administrative supports required for program success.

UW-Madison has entered into a Memorandum of Understanding with UW System that formalizes their resource commitments, timelines, and responsibilities. Once the program becomes fully self-supporting (i.e. program revenues exceeding program expenses for partner campuses and UW Extended Campus), the residual revenues will be shared equally among all campus partners and UW Extended Campus.

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

<table>
<thead>
<tr>
<th>Name (Last, First)</th>
<th>Department</th>
<th>Academic Program Director</th>
</tr>
</thead>
<tbody>
<tr>
<td>Betz, Natalie</td>
<td>Cell and Regenerative Biology (CELL R BIO)</td>
<td>Academic Program Director</td>
</tr>
<tr>
<td>Husk, Bryan</td>
<td>Cell and Regenerative Biology (CELL R BIO)</td>
<td>Assistant Director</td>
</tr>
<tr>
<td>Smith, Michele</td>
<td>Cell and Regenerative Biology (CELL R BIO)</td>
<td>Program Manager</td>
</tr>
</tbody>
</table>

Describe how student services and advising will be supported.

For existing students in MS-ABT interested in the certificate, the UW-Madison program team will support advising and student services for additional guidance toward earning the credential. For new students interested in earning the degree and certificate, they will first choose a home institution from where their certificate will be conferred. During the selection process, students will work together with the enrollment coaches at UW-EX, who are responsible for nurturing leads to application. Once a student applies to a home campus, the students services team at the campus will be responsible for admissions, advising and student success until graduation. In addition to the UW-Madison program team, there are additional contacts at UW-EX that can provide technical support for UW-EX hosted courses.

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

Upload the 131 spreadsheet. Certificate in Applied Bioinformatics Combined Budget.pdf
What is the tuition structure for this program?

Online/Distance per-credit tuition

Select a tuition increment:

$850/credit

What is the rationale for selecting this tuition increment?

Consistent with the MS in Applied Biotechnology program, tuition for the courses in the Graduate Certificate in Applied Bioinformatics will be set at $850/credit for 2021-2022 and will be identical at all seven partner institutions. The tuition rate is based on market demand estimates as well as comparisons with other master’s level online programs offered by the University of Wisconsin (UW) System and nationally, and will be charged outside the credit plateau. The pricing structure will follow the UW System pricing guidelines for distance education programs provided in UW System Administrative Policy (SYS) 130. Segregated fees for students enrolled in this program would be waived by all of the partner institutions. Students will not be required to pay any additional fees as part of the program, except for the cost of their books. There is no tuition differential for out-of-state students.

Will segregated fees be charged?

No

Upload Online/Distance tuition proposal

Provide a summary business plan.

This graduate certificate is a part of the collaborative program model used by UW-Extended Campus to provide funding to start and coordinate online programs in the UW-System. It does not follow the UW-Madison 131 Budget model and therefore the UW-System budget model spreadsheet is attached to this proposal.

The UW-EX collaborative budget model provides all start-up fees covered by UW-EX funding, with designated payments to campuses each year for an academic director and program coordinator; admissions support, data transfer, local marketing, course development and course instructors. After the program becomes profitable, all net revenue is shared equally between campuses and UW-EX. The model was evaluated by the UW-System Audit team in 2020 and found to be sound and equitable. It predicts that revenue will be shared back to the participating schools into a 131 fund by the third year of enrollments.

Please note that the UW-EX collaborative budget model includes the total overall enrollment across all participating UW campuses. The tuition from all schools is transferred to UW-EX for the administration of the program, and payments are sent to individual campuses for support and instruction per the MOU. UW-Madison estimates that over 50% of the total enrollments will occur at UW-Madison. These estimates are included in the enrollment table in the proposal.

Provide an overview of plans for funding the program including but not limited to program administration, instructional/curricular delivery, technology needs and program N/A: included in the UW-EX Collaborative Model. Funding per the MOU is provided as described above to cover all costs associated with the model in return for revenue share after sustainability is met. Future curriculum updates and upgrades will be paid for by UWEX with program revenue.

What is the marketing plan?

Marketing efforts will be led out of UW-EX and will extend beyond the traditional regions of participating UWs. Given that the reach of the Graduate/Professional Certificate will be broad, the UW-EX Marketing Unit will engage in state, regional and national digital marketing on behalf of the partners utilizing a multi-channel, integrated messaging approach to build awareness of the program and generate leads.

Specific digital marketing tactics employed include paid search (Google & Bing PPC) and paid social [ads on Facebook, or LinkedIn]. The website will be optimized for Search Engine Optimization (SEO) by creating content rich with keywords, blog posts and dedicated landing pages. The marketing unit will also engage in email marketing by reaching out to targeted industries and affiliate organizations. Annual funding is also provided to each of the participating academic partners from the program to support their local marketing efforts.

In the pre-launch phase of the program, the marketing team will identify key messages, and target audiences, develop web content, and build a marketing campaign with supporting creative materials. The marketing strategy will be shared with campus partners prior to full launch. In the post-launch phase of the program we will implement the marketing plan, monitor performance and look for ways to improve efforts to drive traffic to become a program lead.
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

No additional resources are needed outside of the UW Collaborative model.

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.

As a tuition funded program, no funding will be provided. Graduate Certificate students are by default graduate students and therefore are eligible for federal financial aid (usually loans) if the participate in Gainful Employment (GE) requirements, that is, the prepare students for employment in a recognized occupation. For information about gainful employment requirements see:

https://studentaid.ed.gov/sa/about/data-center/school/ge

Curriculum and Requirements

Guide Admissions/How to Get In tab

This Graduate/Professional Certificate in Applied Bioinformatics program is intended only for degree-seeking graduate students enrolled in the M.S. in Applied Biotechnology. The M.S. in Applied Bioinformatics accepts applications year-round.

- Applications are accepted for Fall through July 15
- Applications are accepted for Spring through December 15
- Applications are accepted for Summer through April 15

Incoming students may apply to the Applied Bioinformatics Certificate when applying to the M.S. in Applied Biotechnology program.

Students enrolled in the M.S. in Applied Biotechnology program who are in good standing with the program (average GPA 3.0 or greater) are able to add the Applied Bioinf coursework.

To declare the certificate, please contact the program advisor listed under "Contact Information".

Describe plans for recruiting students to this program.

Recruiting efforts will be shared by UW-EX and UW-Madison. UW-EX will use its student enrollment coaching model to follow up on leads generated by marketing efforts until the point they apply to UW-Madison. This effort is supported through UW-EX salesforce and a professional team of student success coaches. After application start, the DCS enrollment coaching team will work together with the ABT program through Salesforce to support students through application submission and enrollment. In addition, the ABT program will continue to recruit through alumni and professional contacts and societies and their needs.

What is the recruiting and admissions strategy for underrepresented students?

An essential goal of this and other UW collaborative online programs is to increase both the access for diverse audiences to this certificate and the success of those students once they enter the programs.

Students enrolled in this program will receive academic and student support services that supports an inclusive learning environment and equity in student success. Further, a UW Extended Campus success coach will work closely with all students to self-identify unique needs and barriers to their success. Success coaches will serve as a resource to either directly help students overcome those barriers or will point them to other resources available at their home campus or elsewhere. UW Extended Campus will maintain online student environments that will allow individuals from diverse ethnic backgrounds to connect with other students around academic programmatic interests and cultural similarities to help build points of commonality and understanding. Social media opportunities for student connection will be made available through Facebook, Twitter, and LinkedIn, to name a few. As part of its access mission, UW Extended Campus has several initiatives currently underway to attract more students from underrepresented groups into the UW System. For example, UW Extended Campus works with UW HELP to develop and disseminate brochures and materials specific to diverse communities around the state. Our diverse and targeted marketing efforts and diverse program array attract an increasingly diverse group of prospects. Successful retention begins with matching the student to the right program (i.e. program fit) and providing continuous and effective supports to students from admission to program completion. Although our enrollment advisors apply the same general recruitment practice and protocols for all prospective students, they provide significant high touch supports and assistance for all prospects to include multiple communication options, information delivery formats, and expanded contact hours. Once admitted, UWEX’s unique and nationally recognized Success Coaching model and service provides regular proactive and reactive advising to students throughout their learning experience. Retention rates in our programs exceed 80% - almost twice the national average for online programs. The UW Extended Campus program manager for the M.S. in Applied Biotechnology program will engage in outreach, working with employers to encourage and support the education of their employees, to include historically underserved minority groups. In addition, a

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept. Approver
program advisory board will provide support in this area by helping the program extend its reach to diverse
groups of prospective students and communities.

Projected Annual Enrollment:

<table>
<thead>
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<th>Year</th>
<th>Projected Enrollment</th>
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<tbody>
<tr>
<td>Year 1</td>
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<tr>
<td>Year 2</td>
<td>10</td>
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<td>Year 3</td>
<td>15</td>
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<td>Year 4</td>
<td>20</td>
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<tr>
<td>Year 5</td>
<td>20</td>
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</table>

Describe plans for supporting enrollments that are much higher or much lower than the anticipated enrollment.

The asynchronous online format, along with course availability during all three semesters, assures that
there is more than adequate capacity for the number of students. The UW-EX collaborative model includes
a plan for enrollments above anticipated by increasing faculty compensation with enrollments above 24 in a
section, and opening new sections after enrollment reaches 34 students (split into 17). Additional funds are
provided for a second faculty member to teach the new sections, if numbers of enrollees proved to be less
than projected, courses may be staggered and still fulfill the expectation of completion of the capstone in
one year’s time. UWEX also conducts yearly review of program enrollments, and will continue to monitor
and make changes to the program curricula if enrollments do not meet goals.

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.

Guide Requirements tab

Minimum Residence Credits: 12

• All of the graduate/professional certificate credits must be earned “in residence” (which includes distance-delivered courses) at UW-Madison.
• Students must earn a B (minimum GPA of 3.00) or above on all graduate/professional certificate coursework.
• Courses in which a student elects the pass/fail option will not count toward completion of requirements.

Required Coursework: 12 credits

Completion of twelve credits is required for the certificate. A description of the requirements is provided below:

Course List

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ABT 720</td>
<td>Experimental Design and Analysis in Biotechnology</td>
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<tr>
<td>ABT 730</td>
<td>Python for Bioinformatics</td>
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<tr>
<td>ABT 780</td>
<td>Bioinformatic Inquiry</td>
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<tr>
<td>ABT 785</td>
<td>Application of Bioinformatics</td>
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</table>

Total credits required:

12

Guide Graduate Policies tab

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

Program Learning Outcomes and Assessment

List the program learning outcomes:

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<thead>
<tr>
<th>Outcomes – enter one learning outcome per box. Use the green + to create additional boxes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrate professional and scientific communication appropriate for biotechnology settings</td>
</tr>
<tr>
<td>2. Evaluate diverse analytical methods and technologies and their applications in bioinformatics</td>
</tr>
<tr>
<td>3. Demonstrate comprehensive understanding of organizational processes and product development pipelines and the data generated throughout</td>
</tr>
</tbody>
</table>
When learning outcomes are changed, a new assessment plan must be uploaded.

Summarize the assessment plan.
The MS in Applied Biotechnology program assessment team, comprised of academic program directors from each partner institution as well as the UW Extended Campus program manager, will manage the assessment of student learning outcomes for the Graduate/Professional Certificate in Applied Bioinformatics. This assessment team will identify and define measures and establish a rubric to evaluate how well students are demonstrating attainment of program learning outcomes. The team will also identify and collect data needed to complete the assessment. As a part of the course development and review process, the assessment team will determine which examples of student work will be most appropriate to demonstrate competency.

The team will receive data collected from institutions by UW Extended Campus each semester. UW Extended Campus will also monitor data on new enrollments, retention rates, and graduation rates. The assessment team will compile these various sources of data and complete annual reports summarizing the data, the assessment findings, and decisions regarding improvements to the curriculum, structure, and program delivery. The report will be shared with the faculty of the program and other stakeholders at each partner institution. The assessment team is responsible for ensuring that recommendations for improvement are implemented.

Department Approved  
Assessment Plan:  
MS-ABT Sample Program Assessment Plan.docx

Related Programs

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

Courses in the curriculum are numbered 300 or higher.
Yes

Courses in which a student elects the pass/fail option will not count toward completion of requirements.
Yes

Special topics courses are only used if all topics count for the certificate.
Yes

All requirements must be met; exceptions that amount to waiving requirements are not permitted.
Yes

Course substitutions to the curriculum should be kept to a minimum; if substitutions are being made on a regular basis, the curriculum should be re-examined. When course substitutions are formally added to the curriculum through governance for inclusion in the curriculum the following academic year.
Yes

Substitutions are not permitted for any course unless the substitution would be provided for every student with the same substitution request.
Yes

At least half of the credits must be earned in residence (UW-Madison on campus, study abroad, or distance courses); exceptions to the minimum residency requirement are
Yes

Students must earn a minimum 3.000 GPA on required certificate coursework. Completed courses listed within the certificate curriculum, whether or not they meet a specific calculation of the GPA.
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.
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.

If those supporting the proposal provided a letter or email of support upload here. A letter is NOT required. Upload any other explanatory information about support from other UW-Madison units.

Additional Information:

Approvals

Department Approval: This proposal has been approved by the faculty at the department/academic unit level. The program faculty confirm that the unit has the capacity and resources (financial, etc.) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:

Entered by: Andrea Poehling for the program Date entered: 10/28/20

School/College Approval: This proposal has been approved at the school/college level and is submitted with the Dean's support. The Dean and program faculty confirm that the unit has the capacity and administrative resources to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:

Entered by and date: Andrea Poehling Date entered: 11/18/20

GFEC Approval: This proposal has been approved by the Graduate Faculty Executive Committee and the Dean of the Graduate School.

Enter any notes about the approval here:

Entered by: Date entered:

UIAPE Approval: This proposal has been approved by the University Academic Planning Council and the Provost.

Enter any notes about approval here:

Entered by: Date entered:

For Administrative Use

Admin Notes:

Guide URL:

SIS effective date:

Guide publish date/type

Career:

SIS Program Code:

SIS Short Description:

Other plan codes associated with this program:

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept. Approver
Degree:
Field of Study:
Program Length:
National Student Clearing House
Classification:
Plan Group:
Award Category:
Enrollment Category:
CIP Code:
UWSTEM:
HEALTH:
Educational Innovation Program:
Non Traditional Program:
Special Plan Type:
CDR certificate category:
Scan this proposal:
Upload documents that should be scanned:

Reviewer: Andrea Poehling (adpoehli) [10/29/20 11:38 am]: Rollback: See 10/29/20 email.

Reviewer: Regina Lowery (lowery3) [11/09/20 1:02 pm]: Learning outcomes: Format accepted.

Reviewer: Regina Lowery (lowery3) [11/09/20 1:03 pm]: Assessment reporting: Home department, Biotechnology, MS - up to date.

Reviewer: Regina Lowery (lowery3) [11/09/20 1:04 pm]: Assessment plan: Please attach assessment plan to this proposal.