

Certificate in Aerospace Medicine

Z3. New Certificate Proposal 2018-2019 v.2

General Catalog Information

INSTRUCTIONS

Select "Program" from the radio box below, then complete the information requested for level, curriculum approval committee, title and department or program for approval.

Program Type (Select "Program")* Program Shared Core

Level** Undergraduate Graduate

Curriculum Approval Committee** Undergraduate Curriculum Committee Graduate Committee A (COSM, CECS, CONH, BSOM) Graduate Committee B (RSCOB, CEHS, COLA, SOPP)

Title* Certificate in Aerospace Medicine

Approval Route

For the following programs, please select "University Programs" from the list of departments and programs below: Honors, Air Force Studies, and Army Studies.

Department or Program (for approval process)*

Population and Public Health Sciences

Launch  the proposal.

Approve the proposal using the decision  button.

TIPS FOR NEW USERS

Turn the help text on by clicking on the following icon .

All fields with an asterisk (*) are required fields. If left blank, the request will not be launched and cannot be acted upon.

Supporting documents and additional information may be attached using the

 button located at the top of this form.

College*

Medicine, Boonshoft School of

Catalog Display

Select the primary College or Department. **Do not select a program.** This information will determine where a program displays in the catalog. A program may display in only one location, under either a College or Department.

College or Department (for catalog display)*

Population and Public Health Sciences

Requested Effective Term* Fall Spring

Year* 2018

Note: If 50% or more of the program is offered off-campus, mostly on-line, or fully online, ODHE approval and HLC notification is required.

- Where is the program offered? (check all that apply)***
- Dayton Campus
 - Lake Campus
 - Off-Campus in Ohio
 - Off-Campus outside Ohio
 - Off-Campus outside U.S.
 - Fully Online
 - Mostly Online (50% or more of the required courses may be taken as distance-delivered courses)

Please list each off-campus location courses in this program may be offered (or N/A if not applicable).*

N/A

If program will be offered off-campus, how will services be available to students (advising, tutoring, counseling, financial aid, etc.)?

N/A

Program Description

The information entered will appear in the catalog as submitted.

Please include information using the following four headings (Heading 2 format, in the order provided below) for consistent presentation in the catalog.

Program Description

Admission Requirements

Program Learning Outcomes (see examples below)

For more information visit: (include the department website)

Program Learning Outcomes

Examples:

History graduates will be able to:

- write proficiently,
- understand the methodology that historians use, and
- analyze primary sources and secondary works in order to arrive at a coherent and well-organized conclusion.

Program Description:

The Certificate in Aerospace Medicine program is a four-course, 12 semester credit hour, academic track designed to provide students with intense immersion into the scientific foundation of aerospace medicine. Program topics represent essential knowledge for initial understanding of the field of aerospace medicine as well as the care of aviation and space flight crewmembers, passengers, and patients. Students will learn critical concepts of human physiologic responses to the aerospace environment in the context of previous, current, and planned aviation and space technology.

Subject areas included in the certificate program include: Respiratory physiology, Protection from hypoxia, Oxygen systems, Physiology of decompression, Response to both sustained and impact acceleration, Vibration and acoustics in the aerospace environment, Spatial disorientation, Thermal loading and physiologic responses, Considerations of the space environment, Physics and environmental aspects of space flight, Medical evaluation and standards for space flight candidates, Medical systems for space flight, Approach to acute care in the space environment, Aspects of telemedicine, Atmospheric contamination and control, Radiation exposure in the aerospace environment, Fundamentals of aerodynamic principles, Aeronautical decision making, Airplane systems, Aircraft power plant and related systems, Aircraft flight instrumentation. Students will also have the opportunity to engage in journal club activities where research papers of contemporary aerospace medicine topics will be critically reviewed and discussed. Exposure to this fund of knowledge will assist students in establishing a didactic foundation on the basic concepts required for sustaining human operations within the aerospace environment.

Admission Requirements:

An undergraduate, graduate or professional degree in the health sciences. Approval by the Division of Aerospace Medicine is required. If the applicant's native language is not English, a

minimum score of 213 (CBT) or 79/120 (IBT) on the Test of English as a Foreign Language (TOEFL) is required or a band 6 through the International English Language Testing System (IELTS).

Learning Outcomes:

Understand the historical and scientific foundations of Aerospace Medicine and its unique environment.

Discuss the essentials of medical care for Aerospace crewmembers to include, screening, routine care, and longitudinal monitoring as well as emergent evaluation.

Discuss the essentials of care for Aerospace ground crew.

Gain an appreciation of the location, depth, and breadth of aerospace medicine resources and research materials.

Produce high-quality written materials such as background papers or presentations that reflect the current or future state of Aerospace Medicine topics

Deepen individual foundations in Aerospace Medicine to facilitate high-quality communications with crewmembers, aerospace specialists, and consultants lacking a background in the field

For more information

visit: <https://medicine.wright.edu/education>

Program Requirements:

Use the following template when creating program requirements. Each of the following headings is called a "core" in the template. **The information entered will appear in the catalog as submitted.**

Required courses
Elective courses
Other requirements (if applicable)
Total: # Hours **(REQUIRED)**

Undergraduate certificates must be between 12 and 21 credit hours with at least 12 credit hours above the 2000-level. For additional information, please refer to the policies for Academic Standards and Curriculum at <http://policy.wright.edu>.

Graduate certificate programs must be 9-20 credit hours. For additional information, please refer to the policies in the Graduate Council Manual <https://www.wright.edu/graduate-school/graduate-council-manual-graduate-curriculum-procedures>.

Program Requirements*

List all certificate courses not currently in any existing degree programs (required or elective).

Note: ASM 7370, 7571, 7771, 7871 are existing courses in the Master of Science in Aerospace Medicine Degree program. Course hour upgrade requests have been submitted via Curriculog from 2 credit hours per course to 3 credit hours per course to reflect the increased material covered in each of these courses and will fully support the credit requirements of this Aerospace Medicine Certificate curriculum

Does the certificate program consist of 50% or more new courses developed specifically for the requested program (i.e., the certificate is NOT a subset of courses from an existing degree program?).

50% or more new courses?* Yes No

- Certificate Type*
- Undergraduate Certificate - Less than one year in length
 - Undergraduate Certificate - 1-1.99 years in length
 - Undergraduate Certificate - 2-4 years in length
 - Post-Baccalaureate Certificate
 - Post-Master's Certificate
 - Graduate/Professional Certificate
 - Non-Credential Program (Preparatory Coursework/Teacher Certification)

Published Program Length (in Years)* 1

Below, briefly describe the processes for the assessment of student learning such as: development and measurement of learning objectives and continuous quality improvement.

Program Quality

Address how the proposed program of study and evaluation mechanisms meet and ensure successful completion of program objectives. The faculty body responsible for overseeing the quality of the program must be explicitly identified. Proposals must indicate any requirements for maintaining the quality of student performance and continuation in the program for successful completion of the certificate. This should include the following:

- Student GPA and/or performance in a specific course or set of course required to continue/progress in program
- Time limits for completion, including need for continuous registration
- Criteria for reapplying if necessary

Acceptance of previous experience, including Prior Learning Assessment (PLA) or credit by examination (e.g., CLEP)

Program Quality*

Student GPA must remain a 3.0 (B) average for continued progress
Certificate must be completed within 2 years
Reapplication process is identical to initial application through the Division of Aerospace medicine and requires coordination and approval through the Division.
No credit for prior experience or courses may be applied to this program.

Processes for the assessment of student learning*

Certificate students will be assessed by a combination of any/all of the following:

- Participation in classroom discussion
- Presentation of materials to colleagues in the classroom
- Weekly quizzes on materials
- Comprehensive mid-term or final exams
- Discussions of cases and journal articles
- Passage of standardized and/or internally generated exams where available
- Participation in table-top or other exercises

Below, briefly describe the nature of the certificate and any contractual or cooperative agreements with this certificate program. If you have partnered or contracted with a non-accredited entity either an institution or corporation to offer courses (content or platform), identify the information or services by the entity and the percentage or portion of the educational program the entity is providing.

Describe Certificate*

The Certificate in Aerospace Medicine program is a four course, 12 semester credit hour, academic track designed to provide students with intense immersion into the scientific foundation of aerospace medicine. Program topics represent essential knowledge for initial understanding of the field of aerospace medicine as well as the care of aviation and space flight crewmembers, passengers, and patients. Students will learn critical concepts of human physiologic responses to the aerospace environment in the context of previous, current, and planned aviation and space technology.

Subject areas included in the certificate program include: Respiratory physiology, Protection from hypoxia, Oxygen systems, Physiology of decompression, Response to both sustained and impact acceleration, Vibration and acoustics in the aerospace environment, Spatial disorientation, Thermal loading and physiologic responses, Considerations of the space environment, Physics and environmental aspects of space flight, Medical evaluation and standards for space flight candidates, Medical systems for space flight, Approach to acute care in the space environment, Aspects of telemedicine, Atmospheric contamination and control, Radiation exposure in the aerospace environment, Fundamentals of aerodynamic principles, Aeronautical decision making, Airplane systems, Aircraft power plant and related systems, Aircraft flight instrumentation. Students will also have the opportunity to engage in journal club activities where research papers of contemporary aerospace medicine topics will be critically reviewed and discussed. Exposure to this fund of knowledge will assist students in establishing a didactic foundation on the basic concepts required for sustaining human operations within the aerospace environment.

Below, briefly describe the necessary qualifications of the faculty teaching in this certificate program and how these qualifications are being met with new or additional faculty.

Faculty Qualifications and Resources*

Necessary qualifications for faculty teaching the Certificate in Aerospace Medicine Program will include completion of an M.D. or D.O. degree, prior residency training and board certification in Aerospace Medicine or other medical specialty recognized by the American Board of Medical Specialties, extensive experience in operational flight medicine in military and/or civilian environments, experience as a military or Federal Aviation Administration certified Private Pilot or higher, and a background teaching Aerospace Medicine courses or similar field at the graduate level.

All of these qualifications will be met by current faculty within the Division of Aerospace Medicine.

Below, briefly describe the process of academic control of the programs such as admission, program content, and quality.

Academic control process*

The process of academic control for the Certificate in Aerospace Medicine Program will consist of Wright State University Graduate School admission requirements, stringent internal Division of Aerospace Medicine application review, annual review of all courses offered including faculty and student feedback, and assessment of program effectiveness utilizing comprehensive intake and exit examinations to gauge student learning and retention.

Additional information, if needed

N/A

Administrative Data

To be completed by Budget

CIP Code

CIP Code Name

To be completed by Financial Aid

Eligible for Title IV funding: Yes No

To be completed by Registrar

Approved Effective Term Fall
 Spring
 Summer

Year

Banner Program Name	Banner Program Code
Banner Major Name	Banner Major Code
Concentration Name(s) and Code(s), if applicable:	
Degree Type	
Program Type for Acalog	

Marketing Analytics and Insights, MS

Z4. New Graduate Program - Full Proposal 2018-2019

Full Proposal

A full proposal should be submitted only after approval of the Program Development Plan (PDP) and receipt of feedback from the Ohio Department of Higher Education (ODHE) and the Chancellor's Council of Graduate Studies (CCGS) and within two years of submission of the PDP (or re-initiate a new PDP).

Please complete a separate form for each request. Note that new degree programs require approval by the Ohio Department of Higher Education (ODHE). Such programs must first submit a Program Development Plan (PDP) followed by a Full Proposal (FP). Only after receipt of the PDP assessment, will a Full Proposal be submitted for review and Board of Trustees approval and sent to the Ohio Department of Higher Education (ODHE). See the ODHE website for additional information: <https://www.ohiohighered.org/ccgs>. Contact the Graduate School for questions about the process.

INSTRUCTIONS

To begin, select "Program" from the radio boxes below and then choose the "Type of Request."

Program Type
(select "program")*

Program
 Shared Core

Type of Request**

New degree designation (M.S., M.Ed., M.B.A., Ph.D., etc.)
 New degree program within an existing degree (new Ph.D. program, etc.)
 New licensure program or endorsement

Educator Preparation Programs (additional ODHE requirements will be identified by the College of Education and Human Services)

If an endorsement, list related degree

Department or Program (for approval process)*

Marketing

Curriculum Committee Approval**

Graduate Curriculum Committee A (COSM, CECS, CONH, BSOM)
 Graduate Curriculum Committee B (RSCOB, CEHS, COLA, SOPP)

Title: Program, Degree or Area of Study Credential

Example: English, MA

Title* Marketing Analytics and Insights, MS

Launch  the proposal.

Approve the proposal using the decision  button.

TIPS FOR NEW USERS

Turn the help text on by clicking on the following icon .

All fields with an asterisk (*) are required fields. If left blank, the request will not be launched and cannot be acted upon.
Supporting documents and additional information may be attached using the  button located at the top of this form.

College*	Business, Raj Soin College of
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Catalog Display

Select the primary College or Department. **For interdisciplinary programs please choose the appropriate college for accurate display in the catalog.** This information will determine where a program displays in the catalog. A program may display in only one location, under either a College or Department.

College or Department (for catalog display)*	Marketing
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Published Program Length (in Years)*	1
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Requested Effective Term*	<input checked="" type="radio"/> Fall <input type="radio"/> Spring <input type="radio"/> Summer	Year* 2018
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Where Offered? (check all that apply)*	<input checked="" type="checkbox"/> Dayton Campus <input type="checkbox"/> Lake Campus <input type="checkbox"/> Off-Campus in Ohio <input type="checkbox"/> Off-Campus outside Ohio <input type="checkbox"/> Off-Campus outside U.S. <input type="checkbox"/> Fully Online <input checked="" type="checkbox"/> Mostly Online (50% or more of the required courses may be taken as distance-delivered courses)
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Please list each off-campus location courses in this program may be offered (or N/A if not applicable).*	N/A
--	-----

If program will be offered off-campus, how will services be available to students (advising, tutoring, counseling, financial aid, etc.)?
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Program Description

The information entered below will appear in the catalog as submitted.

Please include information using the following four headings (in order). Click on "format" in the edit box below and select "Heading 2" for each heading listed. Select the "normal" format for the body of text under each heading.

Program Description

Admission Requirements

Program Learning Outcomes (see examples below)

For more information visit: (include the department website)

Program Learning Outcomes

Example:

History graduates will be able to:

write proficiently,
understand the methodology that historians use, and
analyze primary sources and secondary works in order to arrive at a coherent
and well-organized conclusion.

**Program
Description,
Admission
Requirements,
Learning
Outcomes and
Program/Departm
Links***

Program Description:

The MS in Marketing Analytics and Insights (MS MAI) program is designed to provide graduate students with a strong base in marketing strategy, consumer behavior, and especially marketing analysis and insights. The program will provide students with the fundamental skills and tools to extract and analyze marketing data, and the opportunity to generate real-world interpretation, insights, and recommendations.

Admission Requirements:

Applicants for the program must possess a bachelor's degree and should have at least 2 years of work experience in Marketing, Analytics, or related business areas.

As with RSCOB's MBA program, no GMAT or GRE is required so long as the candidate's cumulative undergraduate GPA is at least 2.7 out of 4.0. Applicants with a 3.0 or higher GPA will be admitted fully to the program. Applicants with a 2.70-2.99 GPA will be admitted conditionally to the program. Applicants with a GPA of 2.50 to 2.69 may petition for admission so long as that application is accompanied with a GMAT score of at least 400. All students admitted by petition will be conditional. If accepted for conditional admission, that student must maintain a GPA of at least 3.0 out of 4.0 for the first 9 hours of course work.

International students must meet the language requirements set forth by the Wright State graduate school on its website:

<https://policy.wright.edu/policy/5070-international-students>

All admitted students must satisfactorily complete MBA 7600 (Marketing Strategy) prior to taking any of the other courses of the MS MAI program.

Students are expected to have completed, at either the undergraduate or graduate level, six credit hours in statistics within five years prior to admission. Students without this requisite statistics experience must pass an opt-out test or complete the MBA Quantitative Business Analysis course (MBA 5800). The statistics requirement must be met before a student begins the program.

Program Learning Outcomes:

Knowledge of the strategic role of marketing in organizations,
including the key role of a marketing plan;

Understanding of influences on consumer attitudes, beliefs, and, most importantly, their actions and decision processes;
Ability to analyze marketing and financial data, formulate strategies and implement decisions;
Ability to design a research study, collect data, and analyze data by using focus groups, primary data, secondary data and web data;
Awareness of online marketing methods and how to use hands-on tools to increase meaningful web traffic;
Hands-on, computer-based experience with marketing analytical tools to generate insights and marketing decisions that create value and build competitive advantage;
Ability to apply "big data" analytic methodologies such as predictive analytics, data mining, text and other big data related technologies;
Experience working with a real dataset to conduct a thorough data analysis, yielding insightful interpretations and proposed recommendations suitable for a business.

For more information visit:

business.wright.edu/marketing

Program Requirements:

Use the following template when creating program requirements. Each of the following headings is called a "core" in the template. **The information entered will appear in the catalog as submitted.**

Required courses

Elective courses

Other requirements (if applicable)

Total: # Hours **(REQUIRED)**

Masters programs must be a minimum of 30 of credit hours. Doctoral programs should be a minimum of 90 credit hours.

Program Requirements*

Required Courses: 24 hours

MBA 7600 Marketing Strategy
MKT 7050 Consumer Behavior
MKT 7100 Digital Marketing
MKT 7500 Marketing Research & Analysis
MKT 7800 Marketing Analytics
MKT 7820 Marketing Analytics: Tools and Insights
MKT 7950 Marketing Analytics: Big Data and Predictions
MKT 7970 Capstone Project

Elective Courses: 6 hours

Choose 2 courses from the following list:

EC 7090 Econometrics and its Applications
MIS 7100 Data-Driven Businesses and Organizations
MIS 7600 Customer Relationship Mgt. and Business
MKT 7150 Viral Marketing and Social Media
MKT 7300 Entrepreneurship

Total Credit Hours* 30

Describe the credentialing requirements for faculty teaching in the program (degree requirements, special certifications or licenses, experience, etc.)

Credentialing requirements*

Possesses a graduate or terminal degree in the appropriate field, subfield, or closely related field to topics to be taught. Has current (within the past 5 years) and relevant record of academic scholarship or creative endeavors in the business world, including professional experience in the field/subfield. Has demonstrated involvement in graduate instruction through teaching and, where applicable, graduate student supervision.

Describe the process by which this program will be assessed. Identify who will be responsible for program assessment and include the frequency, metrics, and any outside bodies that may be involved.

Also describe the policies and procedures in place to measure individual student success in the proposed program. Please include: responsible position/unit/group, description of measurements used, frequency of data collection and sharing, how the results are used to inform the students as they progress through the program, and initiatives used to track student success after program completion.

Program Assessment*

The curriculum and experiences for the MS MAI program will support outcomes consistent with the mission and objectives of accreditation bodies such as AACSB. The program will leverage RSCOB's processes to foster continuous improvement through ongoing quality assessment.

The MS MAI curriculum covers the essential areas outlined by AACSB, especially in the earlier courses of the program. The general skill areas outlined by AACSB and applicable courses are listed below:

- Written and oral communication (all courses, for assignments and course projects)
- Ethical understanding and reasoning (all courses, especially MBA 7600, MKT 7050, MKT 7100, and MKT 7500)
- Analytical thinking (all courses)
- Information technology (all research and analytics courses)
- Interpersonal relations and teamwork (all courses, for team projects)
- Diverse and multicultural work environments (all courses, especially MBA 7600, MKT 7050, MKT 7100, and MKT 7500)
- Reflective thinking (all courses, especially MBA 7600, MKT 7050, MKT 7100, and MKT 7500)
- Application of knowledge (all courses)
- General business knowledge (all courses, especially (all courses, especially MBA 7600, MKT 7050, MKT 7100, MKT 7500, and MKT 7800)

RSCOB's total learning environment has always been a process of continuous quality improvement. Improvements result from department

faculty modifying degree majors, individual faculty modifying their respective courses, etc.. Input for these changes come from numerous sources including individual faculty research, attendance at professional meetings, discussions and meetings with members of the corporate community, and assessments of student learning.

The Assurance of Learning (AOL) process at RSCOB is fairly mature (over 10 years), developed by the college (Dean, Assistant Deans and Department Chairs) in consultation with faculty. The process is based on the following goals and objectives:

The primary objective of this process is to assure continuous improvement of student learning.

The process is mission driven. Learning goals and objectives flow from the college mission and key college operating values.

The process involves faculty. Faculty develop the goals, objectives, measurement criteria, and rubrics, and map learning objectives to respective courses. The analysis, recommendation for change based on the analysis, and implementation of changes are done by faculty, various college and department curriculum committees and department chairs.

The process focuses on college degree programs.

The process will never be used to evaluate individual teaching, nor will it be used as part of the annual faculty evaluation process or the promotion and tenure process.

The process requires the participation of most faculty in the College to be effective.

Whenever possible, direct measures will be used with lesser emphasis placed on indirect measures.

The process is never complete. Improvement of the student learning process is ongoing.

A cycle (loop) of AoL is defined as the period of time to complete a full set of assessment activities, including assessing measures such as embedded questions (or rubrics) in various courses mapped to respective learning objectives; evaluating student performance using the measures; and recommending changes. A next cycle of AoL starts when recommended changes from the previous cycle are included in respective course syllabi, courses or the curriculum. Faculty modification of objectives, rubrics or embedded questions may occur at the beginning of this new cycle. The faculty considers this part of continuous improvement for the assessment process. As a standard process, once the results are documented, the College curriculum committee discuss results and task appropriate departmental representatives to bring feedback back to departmental curriculum committees for further action. Departmental curriculum committees then study the feedback and propose changes to individual courses to college curriculum committee. Finally, the College curriculum committee approves the changes for implementation in the next cycle.

All semester-based programs used calendar/fiscal year cycles.

We expect the first few cycles of AoL after a major curriculum modification to be difficult, but because of the maturity of the process, the measures show very interesting information that faculty can certainly use to improve the AoL process for the future cycles.

Complete and attach the following to this proposal:

A financial impact form available at <https://www.ohiohighered.org/ccgs>.

Faculty Curriculum Vitae

Course Descriptions

Other evidence in support of the program (eg. need surveys, consultants' reports, letters of support, etc.)

A narrative full proposal will be required for the Board of Trustees and the Ohio Department of Higher Education review and approval.

The following should be addressed following CCGS guidelines:

Academic Quality

- o Program distinction (in concept and quality)
- o Theoretical basis in methods of inquiry/ways of knowing
- o Provides broad education to address major issues/concerns in discipline
- o Critical analysis in problem solving with emphasis on decision making
- o Required culminating experience
- o Identify adequate faculty resources
- o Offers what is needed for professional competence/expertise in field
- o Provide plans to obtain professional accreditation, if applicable
- o Additional admission criteria that are relevant to assess potential student success
- o Describe field/clinical experience, nature of oversight and activities/requirements
- o Provide faculty qualifications to determine if adequate
- o Describe how program plan aspects may relate to professional accreditation
- o Describe how theory and practice are integrated
- o Provide national credit hour norm and how this program compares
- o Describe required culminating experience and contribution to professional preparation

Examples of Program Need

- o Student interest/demand: potential enrollment, ability to maintain critical size
- o Institutional need: plan for development of graduate programs at WSU
- o Societal demand: intellectual development, discipline advancement, employment
- o Scope: Local, regional, national, and international needs

Access and Retention of Underrepresented Groups

- o Ensure recruitment, retention, and graduation of underrepresented groups
- o Provide institutional/departmental profiles of total/graduate enrollment of underrepresented groups within the discipline
- o Compare underrepresented groups degree recipients from department/university at all levels to national norms; supply by group where available

Statewide Alternatives

- o Programs available in other institutions
- o Appropriateness of program for specific locale
- o Opportunities for inter-institutional collaboration
- o Institution Priority and costs – support and commitment of central administration and adequate resources to initiate program

External Support

- o Community, foundation, governmental and other resources

Administrative Data

To be completed after the Board of Trustees' Approval

Resolution
Number

Date of Approval

To be completed by Budget

CIP Code

CIP Name

To be completed by Financial Aid

Eligible for Title IV funding: Yes No

To be completed by Registrar

Approved Effective Term <input type="radio"/> Fall <input type="radio"/> Spring <input type="radio"/> Summer	Year
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Banner Program Name	Banner Program Code
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Banner Major Name	Banner Major Code
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Program Credential Level* Masters
 Doctoral
 Specialist
 N/A

Degree Type

Program Type

MS in Interdisciplinary Applied Sciences and Mathematics

Z4. New Graduate Program - Full Proposal 2018-2019 v.2

Full Proposal

A full proposal should be submitted only after approval of the Program Development Plan (PDP) and receipt of feedback from the Ohio Department of Higher Education (ODHE) and the Chancellor's Council of Graduate Studies (CCGS) and within two years of submission of the PDP (or re-initiate a new PDP).

Please complete a separate form for each request. Note that new degree programs require approval by the Ohio Department of Higher Education (ODHE). Such programs must first submit a Program Development Plan (PDP) followed by a Full Proposal (FP). Only after receipt of the PDP assessment, will a Full Proposal be submitted for review and Board of Trustees approval and sent to the Ohio Department of Higher Education (ODHE). See the ODHE website for additional information: <https://www.ohiohighered.org/ccgs>. Contact the Graduate School for questions about the process.

INSTRUCTIONS

To begin, select "Program" from the radio boxes below and then choose the "Type of Request."

Program Type
(select "program")*

Program
 Shared Core

Type of Request**

New degree designation (M.S., M.Ed., M.B.A., Ph.D., etc.)
 New degree program within an existing degree (new Ph.D. program, etc.)
 New licensure program or endorsement

Educator Preparation Programs (additional ODHE requirements will be identified by the College of Education and Human Services)

If an endorsement, list related degree

Department or Program (for approval process)*

PhD in Interdisciplinary Applied Science and Mathematics

Curriculum Committee Approval**

Graduate Curriculum Committee A (COSM, CECS, CONH, BSOM)
 Graduate Curriculum Committee B (RSCOB, CEHS, COLA, SOPP)

Title: Program, Degree or Area of Study Credential

Example: English, MA

Title* MS in Interdisciplinary Applied Sciences and Mathematics

Launch  the proposal.

Approve the proposal using the decision  button.

TIPS FOR NEW USERS

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College*	Science and Mathematics, College of
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Catalog Display

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College or Department (for catalog display)*	PhD in Interdisciplinary Applied Science and Mathematics
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Published Program Length (in Years)*	2
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Requested Effective Term*	<input checked="" type="radio"/> Fall <input type="radio"/> Spring <input type="radio"/> Summer	Year* 2018
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Where Offered? (check all that apply)*	<input checked="" type="checkbox"/> Dayton Campus <input type="checkbox"/> Lake Campus <input type="checkbox"/> Off-Campus in Ohio <input type="checkbox"/> Off-Campus outside Ohio <input type="checkbox"/> Off-Campus outside U.S. <input type="checkbox"/> Fully Online <input type="checkbox"/> Mostly Online (50% or more of the required courses may be taken as distance-delivered courses)
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Please list each off-campus location courses in this program may be offered (or N/A if not applicable).*	N/A
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If program will be offered off-campus, how will services be available to students (advising, tutoring, counseling, financial aid, etc.)?
--

Program Description

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Please include information using the following four headings (in order). Click on "format" in the edit box below and select "Heading 2" for each heading listed. Select the "normal" format for the body of text under each heading.

Program Description

Admission Requirements

Program Learning Outcomes (see examples below)

For more information visit: (include the department website)

Program Learning Outcomes

Example:

History graduates will be able to:

write proficiently,
understand the methodology that historians use, and
analyze primary sources and secondary works in order to arrive at a coherent
and well-organized conclusion.

<p>Program Description, Admission Requirements, Learning Outcomes and Program/Department Links*</p>	<p>Program Description:</p> <p>Interdisciplinary Applied Sciences and Mathematics (IASM) offers a program of graduate study leading to the Master of Science in IASM.</p> <p>The program focuses on three areas of technological and scientific importance:</p> <ol style="list-style-type: none">1. Materials and Nanoscale Science and Technology Development2. Modeling and Analysis for Physical and Biological Systems3. Computational Problems in the Physical and Biological Sciences <p>Admission to the IASM M.S. program is granted only to applicants who have been accepted to the IASM Ph.D. program.</p> <p>Admission Requirements:</p> <p>The minimum admission requirements set forth by the program are as follows:</p> <p>a B.S. or B.A. degree from an accredited institution in mathematics, science or engineering, with a minimum 3.0 grade point average in mathematics and science coursework, demonstrating a strong mathematics background, with academic training commensurate with IASM focus areas.</p> <p>Additionally, students seeking admission will be required to submit:</p> <ul style="list-style-type: none">Academic TranscriptsA Statement of Professional Objectives3 Letters of RecommendationGraduate Record Examination (GRE) scores on the quantitative and analytical portions of the general examination
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For international students, a score of 6 on the International English Language Testing System (IELTS) examination, or a minimum score of 213 (CBT)/ 79(IBT) on the Test of English as a Foreign Language (TOEFL), will be required.

Program Learning Outcomes:

The IASM M.S. program, is structured around the following specific goals:

1. To prepare broadly trained, scientifically and technologically skilled professionals for careers in applied science in government and industry;
2. To provide a foundation for careers in basic scientific research;
3. To provide quantitative tools and knowledge to enhance workplace effectiveness;
4. To advance knowledge in basic and applied science and mathematics.

For additional information:

www.wright.edu/iasm

<https://science-math.wright.edu/degrees-and-programs>

Program Requirements:

Use the following template when creating program requirements. Each of the following headings is called a "core" in the template. **The information entered will appear in the catalog as submitted.**

Required courses

Elective courses

Other requirements (if applicable)

Total: # Hours **(REQUIRED)**

Masters programs must be a minimum of 30 of credit hours. Doctoral programs should be a minimum of 90 credit hours.

Program Requirements*

New Core

Degree Requirements

The IASM curriculum is based on three types of courses: **Core, Focus Area, and Elective**. All IASM program students will take the same **Core Courses** regardless of the student's chosen focus area.

- 1. Core Courses:** MTH 6060 Mathematical Modeling, MTH 6150 Scientific Computation,
- 2. Focus Area Courses:** 6 courses chosen from Focus Area courses, with at least 2 of these courses chosen from an area different from the student's own focus area.
- 3. Electives:** 2 approved courses, numbered 6000 or above (Please consult the Appendix for a course listing), offered by science, math, or engineering academic

departments. An internship is a recommended substitute for one of these courses.

Students will take 4 courses associated with their selected **Focus Area** and two additional courses from one of the remaining two Focus Areas. Students will select two **Elective** courses, at the 6000 level or above, from an approved list of science and engineering courses as designated by each Focus Area. An internship (IASM 8200) will be a recommended substitute for one of these **Elective** courses. The total required academic course hours for the program will be 30 hours.

Total Credit Hours* 30

Describe the credentialing requirements for faculty teaching in the program (degree requirements, special certifications or licenses, experience, etc.)

Credentialing requirements*

The program faculty members have strong research programs and are active in the new IASM doctoral program. They will also serve the needs of the MS program. Currently there are 41 Program Faculty members from MTH/STT and Physics, Biology, Earth and Environmental Sciences, Neuroscience, Human Factors Engineering and Psychology.

Describe the process by which this program will be assessed. Identify who will be responsible for program assessment and include the frequency, metrics, and any outside bodies that may be involved.

Also describe the policies and procedures in place to measure individual student success in the proposed program. Please include: responsible position/unit/group, description of measurements used, frequency of data collection and sharing, how the results are used to inform the students as they progress through the program, and initiatives used to track student success after program completion.

Program Assessment*

IASM M.S. students must pass the M.S. Qualifying Exams. These examinations will be comprised of two separate 3-hour long written examinations over the content of the following courses:

Exam #1 - Mathematical Modeling (MTH 6060) and Scientific Computation (MTH 6150)

Exam #2 - This will exam will cover a 2- course sequence taken by the student as chosen in consultation with the student's advisor.

The examinations may be taken at most twice and will be graded as "Failing," "Satisfactory," or "Excellent." Satisfactory or Excellent exam performance will entitle students to obtain the IASM MS degree. Students that receive Excellent ratings on both exams may be allowed to advance in the IASM PhD program and work toward developing a Ph.D. dissertation research proposal, provided they also meet the other requirements (e.g. passing a third qualifying exam with an excellent rating and the candidacy exam)

Master's Degree (M.S.) in Interdisciplinary Applied Sciences and Mathematics

Students admitted with the Bachelor's degree, after completing initial program coursework as described below, and having successfully passed the Qualifying Examinations, will be awarded the Master's Degree in Interdisciplinary Applied Science and Mathematics. To be awarded the IASM M.S. degree, candidates for the degree must:

- Complete M.S. **Core** and **Focus Area** course requirements (a minimum of 30 semester credit hours of course work).
- Receive at least a **satisfactory** grade on the **Qualifying Examination**.
- Meet the **degree requirements** of the **Graduate School**.

Complete and attach the following to this proposal:

- A financial impact form available at <https://www.ohiohighered.org/ccgs>.
- Faculty Curriculum Vitae
- Course Descriptions
- Other evidence in support of the program (eg. need surveys, consultants' reports, letters of support, etc.)

A narrative full proposal will be required for the Board of Trustees and the Ohio Department of Higher Education review and approval.

The following should be addressed following CCGS guidelines:

Academic Quality

- o Program distinction (in concept and quality)
- o Theoretical basis in methods of inquiry/ways of knowing
- o Provides broad education to address major issues/concerns in discipline
- o Critical analysis in problem solving with emphasis on decision making
- o Required culminating experience
- o Identify adequate faculty resources
- o Offers what is needed for professional competence/expertise in field
- o Provide plans to obtain professional accreditation, if applicable
- o Additional admission criteria that are relevant to assess potential student success
- o Describe field/clinical experience, nature of oversight and activities/requirements
- o Provide faculty qualifications to determine if adequate
- o Describe how program plan aspects may relate to professional accreditation
- o Describe how theory and practice are integrated
- o Provide national credit hour norm and how this program compares
- o Describe required culminating experience and contribution to professional preparation

Examples of Program Need

- o Student interest/demand: potential enrollment, ability to maintain critical size
- o Institutional need: plan for development of graduate programs at WSU
- o Societal demand: intellectual development, discipline advancement, employment
- o Scope: Local, regional, national, and international needs

Access and Retention of Underrepresented Groups

- o Ensure recruitment, retention, and graduation of underrepresented groups

- Provide institutional/departmental profiles of total/graduate enrollment of underrepresented groups within the discipline
- Compare underrepresented groups degree recipients from department/university at all levels to national norms; supply by group where available

Statewide Alternatives

- Programs available in other institutions
- Appropriateness of program for specific locale
- Opportunities for inter-institutional collaboration
- Institution Priority and costs – support and commitment of central administration and adequate resources to initiate program

External Support

- Community, foundation, governmental and other resources

Administrative Data

To be completed after the Board of Trustees' Approval

Resolution Number	Date of Approval
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To be completed by Budget

CIP Code
CIP Name

To be completed by Financial Aid

Eligible for Title IV funding: <input type="radio"/> Yes <input type="radio"/> No

To be completed by Registrar

Approved Effective Term <input type="radio"/> Fall <input type="radio"/> Spring <input type="radio"/> Summer	Year
Banner Program Name	Banner Program Code
Banner Major Name	Banner Major Code
Concentration Name(s) and Code(s), if applicable:	

**Program
Credential Level*** Masters
 Doctoral
 Specialist
 N/A

Degree Type

Program Type