

Missouri State University
Curricular Proposal – New Program
(MAJOR, OPTION, MINOR, CERTIFICATE, OR CERTIFICATION)

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This form is to be used for internal Missouri State approval of any proposal for a new program involving two or more courses, including any new graduate program, new undergraduate major (whether comprehensive or non-comprehensive), new option within an existing program (whether graduate or undergraduate), new minor, new certificate, or new certification program.

New graduate programs, new undergraduate majors, and certificate programs involving more than 18 credit hours require approval by the CBHE as well as approval through the Missouri State curricular process. CBHE applications for such programs are processed through the Office of the Graduate College, regardless of whether the program is graduate or undergraduate. Contact the Graduate College, CARR 306, for a copy of the CBHE policies and information concerning proposal development. All proposals for new programs requiring CBHE approval should progress through the Missouri State curricular process accompanied by a draft of the required CBHE documentation.

Department English, Biology (see para 2, attached)

Date 2/1/13

Attach on separate sheets (1) statement of rationale and objectives, (2) estimated costs for first five years, and (3) complete catalog description (including new courses and course changes pending approval). [Note: For new programs requiring CBHE approval, CBHE forms NP, PS, and PG will satisfy #1 and CBHE form FP will satisfy #2.]

PROPOSED PROGRAM

Bachelor of General Studies degree

Major Comprehensive Major Option Minor Certificate Certification Academic Rules Other

Degree Applicability See para 5, attached

General Education Courses Required See paras 4, 9, attached Total Hours 42-45

General Education Courses Recommended See para 9, attached Total Hours See para 9

Requirements (including Admission) and Limitations for Specific Degree
See paras 7-8, attached

Courses Required in Department See para 9, attached Total Hours See para 9

Courses Required in Other Departments See para 9, attached Total Hours See para 9

Prerequisites for Required Courses See paras 7, 9, attached

Recommended Electives in Department See para 9, attached Total Hours See para 9

Recommended Electives in Other Departments See para 9, attached Total Hours See para 9

Limitations on Electives See para 9, attached

DEPARTMENT Route according to ART VI, SEC 3B(1-4) of Bylaws of the Faculty Senate. Attach New Program Resource Information form (FS-302a/06) and forward three typed, originally signed forms to one of the following (please mark all that apply). If the program needs to go through more than one committee/council, forward one additional form for each additional council/committee marked.

College Council (Send all new undergraduate programs through College Council as first step before forwarding either to PEC, CGEIP, or directly to Faculty Senate)

Professional Education Committee (All proposals affecting BS and MS in Education and Educational Specialist degrees)

Committee on General Education and Intercollegiate Programs (All general education and multi-college programs)

Graduate Council (All graduate programs)

Signature A. Mathis
Department Head

Date 3-7-13

(Routing on Reverse Side)

New Degree Proposal for Missouri State University
Bachelor of General Studies (BGS) Degree

December 15, 2012

Faculty Committee

Carmen Boyd (CHHS)
Lyn Gattis (COAL)
Kathy Hughes CNAS)
Arbindra Rimal (AG)
John Satzinger, Chair (COB)
Eric Sheffield COE)
John Strong (CHPA)

Background and Commitment

[1] The proposed Bachelor of General Studies (BGS) is an interdisciplinary degree program for students with broad interests and capabilities rather than a focused area of specialization. The BGS degree was developed by a faculty committee charged to develop a new degree with the broadest possible requirements to serve this existing need. Members of the committee include faculty from all six colleges plus the School of Agriculture.

[2] The faculty members on the committee agreed to serve as long as the new degree was clearly sponsored and proposed by faculty members from all colleges and came through the faculty curricular process. The new degree is not to be housed in an academic department but has been formally sponsored by academic departments in order to bring the proposal forward. Additionally, the committee was assured that the Provost's Office would provide basic resources to administer the degree program in terms of advising, working out an individual degree plan, and verifying completion of the degree plan. The BGS degree will be administered by Interdisciplinary Studies through the Provost's Office under the Associate Provost for Student Development & Public Affairs.

[3] Good students have been identified in all MSU colleges who are at risk of attrition because they have not found one specific major or career path that sufficiently interests them after investing considerable time and resources in their higher education. Additionally, some long-time students are already employed in career positions and need a path to complete a bachelor's degree that makes sense for them. Similar BGS degrees are offered by a growing number of universities, locally including Drury, MU, SEMO, and UMSL.

[4] The BGS degree requires satisfying all General Baccalaureate Degree Policies and Requirements except these sections do not apply: 1) Majors and Options and 2) Multiple Degrees and/or Multiple Majors. The remaining requirements apply: General Education, The Catalog of Graduation Requirement, Constitution Study Requirement, Credits and Grade Point Average Requirements, University Exit Exam, Residence Requirements, and Appeals for Exceptions. Note that the BGS degree cannot be used for a multiple degree program but may be used when a student pursues a subsequent undergraduate degree.

[5] The BGS Degree Requirements will be specified in the Specialized Educational Opportunities/ Interdisciplinary Studies section of the catalog. The proposed catalog description for the degree requirements is as follows:



Program Requirements and Restrictions/Interdisciplinary Programs

Bachelor of General Studies (BGS)

[6] The bachelor of general studies degree is an interdisciplinary degree that requires completion of coursework in two or three departments in place of one major or a major with a minor. No mention of the department areas is included on the transcript or diploma, but a degree plan and graduation check will verify that all of the specific requirements have been met.

Procedure for Seeking Candidacy

[7] The BGS degree is by definition appropriate for those who through several years of interdisciplinary and focused study have learned that their interests are not well served with a specialized academic major. Therefore, it is not available as a degree program for freshman or sophomore students who have not had the opportunity to experience several years of growth and learning as an undergraduate. Admission to the BGS program requires at least 60 hours of college credit, including at least 18 hours of upper division credit.

[8] For current MSU students, application is made by written essay summarizing the applicant's educational background and explaining how the BGS degree program would be personally beneficial in ways that a traditional BA or BS degree program would not. The application is made to the Associate Provost for Student Development & Public Affairs and is approved in consultation with faculty.

Degree Requirements

[9] The candidate for this degree must meet the following requirements:

- A. General Education requirements (42 to 45 hours)
- B. Significant Coursework from two or three specific departments (minimum of 45 hours)
 - 1. If two departments, a minimum of 21 hours each plus 3 additional hours to reach the 45-hour minimum
 - 2. If three departments, a minimum of 15 hours each
 - 3. At least 18 of these hours must be upper division
 - 4. At least 6 of these hours must be from 400 level or above writing intensive courses and/or 300 level or above internship, study away, independent study, service learning, or similar courses.
 - 5. No course listed under the applicable general education program can be used toward the hours in the two or three specific departments
 - 6. Hours used in the two or three specific departments must be completed with a GPA of 2.5 or better
- C. Additional Electives to bring the total hours to at least 125
- D. General Baccalaureate Degree requirements (except these sections do not apply: 1. Majors and Options and 2. Multiple Degrees and/or Multiple Majors).

Request for Bachelor of General Studies Degree, Missouri State University

[A complete proposal should contain the following information in this order and numbered this way. Do not delete any items/questions—use the phrase "Not Applicable" in place of a response.]

New Program Proposal (form NP)

Sponsoring Institution(s): Missouri State University
 Program Title: Bachelor of General Studies Degree
 Degree/Certificate: Bachelor of General Studies Degree
 Options: (Not Applicable)
 Delivery Site(s): Springfield campus
 CIP Classification: _____ (Please provide a CIP code)
 Implementation Date: AY 2014-2015
 Cooperative Partners: (Not Applicable)
 Expected Date of First Graduation: May 2016
 Person to contact for more information (name and phone number) _____

1. Need:

A. Student Demand:

i. Estimated enrollment each year for the first five years for full-time and part-time students (Please complete table below)

	Year				
	1	2	3	4	5
Full Time					
Part Time					
Total					

ii. Will enrollment be capped in the future? No

B. Market Demand:

- i. National, state, regional, or local assessment of labor need for citizens with these skills
 - Entry-level jobs that require college degrees but not necessarily in particular fields
 - Graduate or professional programs
 - Opportunities for promotions that require college degrees

C. Societal Need:

- i. General needs which are not directly related to employment
 - Personal satisfaction
 - Lifelong learning
 - Public Affairs mission; MSU's charge to graduate persons who are prepared for ethical leadership, cultural competence, community engagement

D. Methodology used to determine "B" and "C" above:
Data from Career Services?
Documentation of MSU's PA mission?

2. Duplication and Collaboration:

If similar programs currently exist in Missouri, what makes the proposed program necessary and/or distinct from the others at public institutions, area vocational technical schools, and private career schools?

For nontraditional students who are already employed and living in southwest Missouri, a General Studies degree at MSU offers a feasible and cost-effective way to complete their degrees. The new program provides a path for many former MSU students to complete degrees at the same institution where they began.

For current MSU students who have not found a specific major or career path that interests them, a General Studies degree minimizes the risk of attrition. These students will be able to finish degrees at MSU without wasting the considerable time and resources they have already invested in higher education.

Does delivery of the program involve a collaborative effort with any external institution or organization? If yes, please complete the rest of this section. If no, state not applicable and go to item 3.

(Not Applicable)

Length of agreement (open-ended or limited): _____

- A. Which institution(s) will have degree-granting authority?
- B. Which institution(s) will have the authority for faculty hiring, course assignment, evaluation, and reappointment decisions?
- C. What agreements exist to ensure that faculty from all participating institutions will be involved in decisions about the curriculum, admissions standards, exit requirements?
- D. Which institution(s) will be responsible for academic and student-support services, e.g., registration, advising, library, academic assistance, financial aid, etc.?
- E. What agreements exist to ensure that the academic calendars of the participating institutions have been aligned as needed?
- F. In addition to the information provided by each participating institution regarding Financial Projections (item 4 below), please address the following items:
 - I. How will tuition rates be determined if they differ among the institutions?
 - II. Has a formal agreement been developed regarding cost-sharing policies? If yes, please include it as part of the proposal. If no, please summarize the current understanding between all parties and the plans for developing a formal agreement.
 - III. What arrangements, if any, have been made for exchange of money between participating institutions?

- G. What commitments have been made by all participants to evaluate the program systematically?
- H. If one institution wishes to discontinue the program, what agreements exist for terminating the offering?

3. Program Structure (form PS):

A. What are the total credits required for graduation? This should match C+D+E below.
125 hours minimum

B. Are there any residency requirements?
Residence requirements are the same as for all Baccalaureate Degrees at MSU.

Total Credits by Category

C. General Education courses: Total credits required: 42-45 hours
List of classes that contribute to this total (an example has been entered).

Course ID Course Title Credits

All courses included in the MSU General Education core may contribute to the total of 42-45 hours.

Total above should be the same as item 3.C.

D. Major requirements: total credits required: 45 hours minimum*
List of classes that contribute to this total (an example has been entered).

Course ID Course Title Credits

*Instead of declaring a major, students will complete a minimum of 21 hours in each of two departments, or a minimum of 15 hours in each of three departments. At least 18 of these hours must be upper division. No course listed under the General Education program can be counted in the hours taken in the two or three specific departments. Hours used in the two or three specific departments must be completed with a GPA of 2.5 or better.

Total above should be the same as item 3.C.

E. Free elective credits:
Additional hours to bring the total hours to at least 125.

F. Describe any requirements for thesis, internship or other capstone experience.
At least 6 of the hours in the two or three specific departments must be from 400 level or above writing intensive courses and/or 300 level or above internship, study away, independent study, service learning, or similar courses as approved by the Provost's Office.

G. Describe any unique features such as interdepartmental cooperation.
The General Studies degree will be administered by Interdisciplinary Studies through the Provost's Office under the Associate Provost for Student Development and Public Affairs. The Provost's Office will provide basic resources to administer the degree program in terms of advising, working out an individual degree plan, and verifying completion of the degree plan.

4. **Financial Projections (for public institutions only; Form FP):** Please complete table at the end of this document. Additional narrative may be added as needed. If more than one institution is providing support, please complete a separate table for each institution.

- 5. **Program Characteristics and Performance Goals (form PG).** For collaborative programs, responsibility for program evaluation and assessment rests with the institution(s) granting the degree(s).

Although all of the following guidelines may not be applicable to the proposed program, please carefully consider the elements in each area and respond as completely as possible in the format below. Quantification of performance goals should be included wherever possible.

A. Student Preparation

- Any special admissions procedures or student qualifications required for this program which exceed regular university admissions, standards, e.g., ACT score, completion of core curriculum, portfolio, personal interview, etc. Please note if no special preparation will be required.

The General Studies degree program will not be available to freshmen or sophomores because these students have not had the opportunity to experience several years of growth and learning as an undergraduate. Admission to the BGS program will require at least 60 hours of college credit, including at least 18 hours of upper division credit.

Current MSU students will apply with a written essay summarizing their educational backgrounds and explaining how the BGS degree program would be personally beneficial in ways that a traditional BA or BS degree program would not. The application will be made to the Associate Provost for Student Development and Public Affairs.

- Characteristics of a specific population to be served, if applicable.
The BGS degree is by definition appropriate for students who through several years of interdisciplinary and focused study have learned that their interests are not well served with a specialized academic major.

B. Faculty Characteristics

- Any special requirements (degree status, training, etc.) for assignment of teaching for this degree/certificate.
(Not Applicable)

- Estimated percentage of credit hours that will be assigned to full time faculty. Please use the term "full time faculty" (and not FTE) in your descriptions here.

- Expectations for professional activities, special student contact, teaching/learning innovation.
At least 6 of the hours in the two or three specific departments must be from upper-division writing-intensive courses and/or internships, study away experiences, independent study, service learning, or similar courses. In some cases, faculty in those departments may elect to develop projects or assignments that enable General Studies students to build on unique professional or life experiences.

- C. Enrollment Projections (repeat section 1.A.i)
 - Student FTE majoring in program by the end of five years.
 - Percent of full time and part time enrollment by the end of five years.
 - D. Student and Program Outcomes
 - Number of graduates per annum at three and five years after implementation.
 - Special skills specific to the program.
 - Proportion of students who will achieve licensing, certification, or registration. Because the General Studies degree will be an interdisciplinary program for students with broad interests and capabilities, we expect that few undergraduates in this program will pursue certification or specialization in a single area.
 - Performance on national and/or local assessments, e.g., percent of students scoring above the 50th percentile on normed tests; percent of students achieving minimal cut-scores on criterion-referenced tests. Include expected results on assessments of general education and on exit assessments in a particular discipline as well as the name of any nationally recognized assessments used.
Must meet same 2.0 GPA overall as all other graduates; must have a minimum GPA of 2.5 in each of two or three particular areas
 - Placement rates in related fields, in other fields, unemployed.
 - Transfer rates, continuous study.
[In or out of the program?] Because of the nature of the General Studies degree, we expect transfer rates to be very low. Entering: Must have at least 60 hours, 18 of which must be upper division; most students transferring to MSU with Associate Degrees from other institutions would have to complete at least one semester of upper-division courses before they could be admitted to the BGS program.
 - E. Program Accreditation
 - Institutional plans for accreditation, if applicable, including accrediting agency and timeline. If there are no plans to seek specialized accreditation, please provide reasons.
(Not Applicable)
 - F. Alumni and Employer Survey
 - Expected satisfaction rates for alumni, including timing and method of surveys
 - Expected satisfaction rates for employers, including timing and method of surveys
6. Accreditation: If accreditation is not a goal for this program, provide a brief rationale for your decision. If the institution is seeking program accreditation, provide any additional information that supports your program.
(Not Applicable)

1

7. Institutional Characteristics: Please describe succinctly why your institution is particularly well equipped or well suited to support the proposed program.

Offer wide range of academic areas that would interest potential BGS students

Affordable; good value; appeals to students in our region

Job market in our region is appropriate for college graduates with general knowledge

8. Any Other Relevant Information

Financial information (Section 4)

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenditures					
A. One-time:					
New/renovated space					
Equipment					
Library					
Consultants					
Other					
Total for One-time Expenditures					
B. Recurring:					
Faculty					
Staff					
Benefits					
Equipment					
Library					
Other					
Total for Recurring Expenditures					
TOTAL (A + B)					
2. Revenues					
*State Aid - CBHE					
*State Aid - DESE					
Tuition/Fees					
Institutional/Resources					
Other					
TOTAL REVENUES					

*Please provide a brief description of the nature of the state aid. Is "new" money requested or is "old" money going to be used? What is the nature of the "old" money?

①

NEW PROGRAM RESOURCE INFORMATION

Program Title and Degree: General Studies Degree

Department: English, Biology

Attach on separate sheets (1) statement of rationale and objectives, (2) estimated costs for first five years, and (3) complete catalog description (including new courses and course changes pending approval).
 [Note: For new programs requiring CBHE approval, CBHE forms NP, PS, and PG will satisfy #1 and CBHE form FP will satisfy #2.]

1. Is another program being deleted or altered? Yes x No
2. If this program affects other departments or colleges, has a memo showing how it will affect them been attached to the proposal? x Yes No
3. What justification is being provided to support this proposal? (Current research, accreditation, certification or licensing requirements, other.)
 - Similar programs now being offered at other universities in Missouri
 - Educational requirements for fast-growing occupations in Missouri
 - General employment opportunities for graduates in all areas as reported by MSU Career Center

4. If your response to #3 refers to existing or potential student demand, please indicate the activities undertaken to estimate or verify the potential or existing demand for this new program
 - Review of published research
 - Missouri Economic Research and Information Center
 - MSU Career Center Annual Report, 2011-2012

5. What are the present/future projected enrollments for this program?

1st year 10 3rd year 30

In five years, how many students must be:

- a) declared minors to justify this new minors continuation
- b) declared majors to justify this new majors continuation 10 BGS graduates/year

6. Which of the following would be needed to implement the proposed program? (Check all that apply.) Individuals responsible for specific areas outside of your college must be consulted.

Additional library holdings?	<u> </u> Yes	<u> x </u> No
Additional technology or other supplies?	<u> </u> Yes	<u> x </u> No
Additional or remodeled facilities?	<u> </u> Yes	<u> x </u> No
Additional travel funds?	<u> </u> Yes	<u> x </u> No
Additional faculty?	<u> </u> Yes	<u> x </u> No
Additional support staff?	<u> </u> Yes	<u> x </u> No
Other additional expenses?	<u> </u> Yes	<u> x </u> No

7. Have the individuals responsible for allocation of these resources been contacted to ensure the availability of these resources by the time the program is implemented?

____ Yes ____ No ____ Yes, but cannot ensure availability (N/A)

8. Referring to question 6, if additional faculty are not required, please provide a statement as to how faculty will be made available to teach proposed new courses, if any, or to manage increased enrollments in existing courses which are to be included in the proposed new program.

The General Studies program will by definition attract students with a wide variety of interests and academic goals. Enrollments will be distributed across all colleges and are unlikely to necessitate additional faculty in any one department or program.


9. If the responses to question 1 and any parts of question 6 other than additional faculty are "no," please provide a statement as to how the department/school (or center or college) will manage the enrollment figures provided in question 5.

Enrollments of General Studies students will be distributed across all colleges and are unlikely to create disproportionate demand on the resources of any one college, department, or program.

The signature of the individuals listed below ensures that the items above have been addressed and the resources needed will be made available when the program is implemented.



Department Head



College Dean

2

Missouri State University Curricular Proposal Course Change or Deletion

Department Computer Science

Date 2/22/2013

Check one: This is a change to X an existing COURSE
 an existing REGULAR (i.e. permanent) SECTION of a variable content course

Present Catalog Description (Cut and paste from web catalog or use most recent description.)	Revised Catalog Description (Cut and paste description again, strikethrough all deletions, and insert and bold new information.)
CSC 232 Introduction to Computer Science II Prerequisite: CSC 130; "C" or better in CSC 131; and MTH 215 or MTH 315 or concurrent enrollment. A continuation of CSC 131. Topics will include: algorithm design; complexity analysis; abstract data types and encapsulation; basic data structures and their application, including stacks, queues, linked lists and binary trees; dynamic memory allocation; recursion; sorting and searching; debugging techniques. 4(3-2) F,S	CSC 232 Introduction to Computer Science II Data Structures Prerequisite: CSC 130; "C" or better in CSC 131; and MTH 215 or MTH 315 or concurrent enrollment. A continuation of CSC 131. Topics will include: algorithm design; complexity analysis; abstract data types and encapsulation; basic data structures and their application, including stacks, queues, linked lists and binary trees; dynamic memory allocation; recursion; sorting and searching; debugging techniques. 4(3-2) F,S

What is changing? Check all boxes that apply.

- Course Deletion
 Course Code
 Course Number
 Title
 Prerequisite
 Credit Hours/Contact Hours
 Periodicity
 Description

Reason for Proposed Change or Deletion

Correctly reflects content of course after three-course sequence revision.

How Did You Determine the Need For This Change or Deletion?

CSC 131 and 325 titles were similarly changed but CSC 232 change was inadvertently omitted.

COMPLETE NEW CATALOG INFORMATION (typed)

CSC 232 Data Structures

Prerequisite: CSC 130; "C" or better in CSC 131; and MTH 215 or MTH 315 or concurrent enrollment. A continuation of CSC 131. Topics will include: algorithm design; complexity analysis; abstract data types and encapsulation; basic data structures and their application, including stacks, queues, linked lists and binary trees; dynamic memory allocation; recursion; sorting and searching; debugging techniques. 4(3-2) F,S

 Check if this is a **non-substantive** change. Distribution for non-substantive changes of 100- through 500-level courses: two originally-signed copies to Faculty Senate; 600- through 900-level courses: three originally-signed copies to Graduate Council. Graduate Council will give two copies to Faculty Senate after approval.

Substantive Change: Department routes according to ART VI, SEC 3B(1-4) of Bylaws of the Faculty. Forward three originally signed forms to one of the following (please check all that apply and send to first council/committee marked). If proposal needs to go through more than one council/committee, forward one additional form for each additional council/committee marked. See Senate Action 11-93/94 for definitions of substantive/non-substantive changes.

X College Council

(All substantive course changes numbered 100-599 must go through College Council first. After approval, College Council will forward appropriate number of copies to the next committee/council or directly to the Faculty Senate if no further committee approval is needed. The last level of committee/council will forward two originally signed copies to the Faculty Senate.)

 Professional Education Committee

(Considers all substantive course changes for Professional Education courses and Teaching Methods courses.)

 Committee on General Education and Intercollegiate Programs

(Considers all substantive course changes for General Education and Intercollegiate Program proposals.)

 Graduate Council

(Considers all 600-900 level course changes.)

Signature

Kenneth Tollman

Date

2/22/13

Department Head

(Routing on Reverse Side)

3

**Missouri State University
Curricular Proposal Program Change or Deletion**

Department College of Natural and Applied Sciences Date February 26, 2013

Title of Program Affected Master of Natural and Applied Sciences

Major Comprehensive Major Option Minor Certificate Certification Academic Rules Other

Present Catalog Description (Cut and paste from web catalog or use most recent description.)	Revised Catalog Description (Cut and paste description again, strikethrough all deletions, and insert and bold new information.)
See Attachment A	See Attachment B

What is changing? Check all boxes that apply.

- Title change From option to program (major) Other
 Course changes of under 18 hours From program (major) to option
 Course changes of 18 hours or more Program or option deletion

REASON FOR PROPOSED CHANGE

The changes are to clarify admission and degree requirements for the MNAS degree and add a statement concerning the availability of graduate assistantships.

COMPLETE NEW CATALOG INFORMATION (Typed)

See Attachment B

Total Hours 32

DEPARTMENT: Route according to ART VI, SEC 3B(1-4) of Bylaws of the Faculty Senate. Forward three typed, originally signed forms to one of the following (please check all that apply and send to first council/committee marked). If the program needs to go through more than one committee/council, forward one additional form for each additional council/ committee marked.

- College Council** (Send all undergraduate program changes through College Council as first step before forwarding either to PEC, CGEIP, or directly to Faculty Senate)
 Professional Education Committee (Considers all program changes affecting BS and MS in Education and Educational Specialist degrees)
 Committee on General Education and Intercollegiate Programs (Considers all general education and multi-college program changes)
 Graduate Council (Considers all graduate-level program changes)

Signature *Kenneth Volkmann*
 Department Head *Thomas Olyz*

Date 2-26-13

(Routing on Reverse Side)

FS Program Change - 9/10/2010

Master of Natural and Applied Science – Program Change
Present Catalog Description

Master of Natural and Applied Science (Interdisciplinary Program)

Temple Hall, room 142, Phone: (417) 836-5249

Email: DanielBeckman@MissouriState.edu or XingpingSun@MissouriState.edu

Website: <http://www.cnas.missouristate.edu/mnas.htm>

Directors: **Daniel Beckman and Xingping Sun**

Program Description

The Master of Natural and Applied Science is designed to provide those working in an environment where scientific knowledge is a priority, such as science teaching and scientific applications, the opportunity to expand their knowledge and experiences consistent with their professional goals and objectives through an interdisciplinary program of study in the natural and applied sciences. The curriculum will consist of formal courses in one or more areas of concentration, professional advisement, graduate seminar or research options (e.g., master’s thesis), as well as incorporating the candidate’s background, goals, and objectives.

Program Objectives

1. To increase both the depth and breadth of knowledge in one or more of the areas in natural sciences for understanding and appreciation of the interdisciplinary nature of science.
2. To provide advanced training and education for expanding current scientific knowledge and capabilities.
3. To provide a base of knowledge or enhancement in an area of natural science outside an original field of study.

Admission Requirements

~~Students admitted in full standing must meet the following requirements.~~ **In order to be considered for admission students must meet the following requirements. These are minimum requirements; acceptance into the program is on a competitive basis.**

1. The student must have a bachelor’s degree from a college or university accredited by agencies recognized by Missouri State University or equivalent education from a foreign university.
2. The student must have a GPA of 3.00 on a 4.00 scale for the last 60 hours of course work **required for the undergraduate degree**, AND a score on the Graduate Record Examination (GRE) meeting or surpassing the minimum score prescribed by the MSU Graduate Catalog for admission to graduate study (<http://graduate.missouristate.edu/requirements.htm>).
3. **The student must submit Submission of a Letter-Statement of Interest and at least two Letters of Recommendation-; submit these directly to the MNAS Program Director, or Darr School of Agriculture if Agriculture is the primary area of interest.**
4. International applicants are also required to submit a score of not less than 550 on the paper-based or a comparable score of 213 on the computer-based TOEFL, with a minimum of 50th percentile on the Listening Comprehension Section.

- 5. The student must have an undergraduate background of at least 20 semester hours in the natural and applied sciences. **Students may be required to meet course prerequisites for their emphasis areas. Undergraduate courses will not be credited as course requirements for the master's degree.**

Graduate Assistantships

A limited number of teaching assistantships (TA) may be available, awarded on a competitive basis. Applications (<http://graduate.missouristate.edu/assistantship.htm>) are to be submitted to the MNAS Program Director, or Darr School of Agriculture if Agriculture is the primary area of interest. Applicants should have all application materials submitted by March 1 (fall assistantships) or October 1 (spring assistantships) to ensure being considered for a TA position. GRE General Test scores may be considered in awarding assistantships.

Degree Requirements (minimum of 32 hours)

- 1. **Advisory Committee.** Initially, each student will be advised by the departmental coordinator of graduate studies from the student's primary emphasis area. As soon as possible, the student will select a graduate faculty member from that department to chair a graduate advisory committee consisting of at least three faculty members that includes a faculty member from the student's second area of concentration. This committee will supervise the remainder of the student's program. **Some departments may require that an advisory committee chair be identified prior to acceptance into the program; applicants should contact the department of the primary emphasis area.**
- 2. **Program of Study.** This unique interdisciplinary master's program requires more than one area of concentration. Each individualized program will be structured by the advisory committee in consultation with the student. The academic background, professional experience, academic objectives, and personal needs will be considered in establishing the individual's program.

Students may select areas of primary emphasis in the following six departments in the College of Natural and Applied Sciences: Biology; Chemistry; Computer Science; Geography, Geology and Planning; Mathematics; and Physics, Astronomy and Material Science; and in the Darr School of Agriculture. In special cases, a "primary emphasis" may be a science topic that is interdisciplinary in itself (for example, Environmental Science), and the relevant course work include more than one department; such a program of study must be approved by the student's Advisory Committee and program director. Students will select a second area of concentration from the above mentioned academic units or from the College of Business Administration (COBA). With approval of the Advisory Committee and program director, other possible outside areas may be pursued, such as education. This second area of concentration may also be inherently interdisciplinary as long as it is distinct from the primary area.

- 3. **Course Requirements.** The student must select a primary emphasis area consisting of at least 16 hours of courses selected from one department in the College of Natural and Applied Sciences listed above. The student must also select 9-16 hours of graduate courses outside the primary area approved by the student's advisory committee. In total, the student must complete at least 32 hours of course work, of which at least 16 must be in courses open only to graduate students (numbered 700 or above).
- 4. **Grade Point Average.** A GPA of at least 3.00 on a 4.00 scale for all graduate work at Missouri State and course work transferred from other institutions is required.
- 5. **Research Requirements.** A student will be required to complete one of the following research requirements.

Thesis Option: The Thesis option requires the completion of a research thesis supervised by the student's advisory committee. The thesis shall be approved by the advisory committee and by the Dean of the Graduate College before the degree is granted. A maximum of six hours of thesis credit can be applied toward the minimum hours required for the master's degree.

Non-Thesis Option: The Non-Thesis option requires the completion of a minimum of one semester course which shall require an extensive research paper or creative work. The student's advisory committee must approve the final research paper and complete a Seminar Report form that is submitted to the academic department chosen as the major area of concentration and subsequently to the Graduate College for the approval of the Dean.

Internship Option: The Internship option requires the completion of internship with a discipline-related business, non-profit organization, or government agency (480 hours). This must include an extensive project that is approved and supervised by the student's on-site mentor and the departmental advisory committee. A maximum of six hours of Internship credit can be applied toward the 32 hours required for this degree.

6. **Comprehensive Examination.** After **most of** the course work has been completed, and upon approval of the advisory committee, a written comprehensive examination will be administered and evaluated by the advisory committee. This examination must be passed by the candidate before a degree will be given.
7. **Time Limit.** The student must complete all requirements within an eight-year period (exclusive of the time spent in the United States Armed Forces).

The Professional Science Master Designation

A student who selects business as the second area of concentration and completes the internship option of the research requirements will receive the Professional Science Master (PSM) designation. The PSM program is recognized by the national Council of Graduate Schools.

Accelerated Master's Degree Option

Eligible Missouri State University students in a major in the College of Natural and Applied Sciences may apply for preliminary acceptance into the Master of Natural and Applied Science program after admission requirements for the accelerated master's option have been satisfied. If accepted, graduate courses chosen from approved 600-level courses or higher may be counted toward both the graduate and undergraduate degrees, with a maximum of 12 credit hours. This option offers an opportunity for CNAS majors whose goals, academic capabilities, and career planning include graduate work, to complete the requirements for the master's degree in less time than would otherwise be possible. Contact the MNAS Program Director for further information and guidelines.

All requirements for the implemented undergraduate program should be met for graduation from the undergraduate degree program. A student may fully be admitted to the Graduate College upon completion of the requirements for the baccalaureate degree. All requirements for the implemented master's program should be met for graduation from the master's degree program.

A student must be admitted into the Accelerated Master's Degree Program at Missouri State University in order to begin taking graduate course work for dual credit. Admission requires approval from the Graduate Program Advisor, Department Head of the undergraduate program, and the Dean of the Graduate College. Students admitted into the Accelerated Master's Degree program will not be fully admitted into the Graduate College until completion of their undergraduate degree and fulfillment of all other requirements for admission to the Graduate College (such as the

Graduate Record Examination). Student should be awarded the bachelor's degree upon completion of the minimum of 125 hours of combined graduate and undergraduate course work and degree specific requirements.

3

Admission Requirements for the Accelerated Master's Option

1. Junior standing and a GPA 3.25 or better.
2. ~~A GRE score of at least 1000 on the verbal plus quantitative section.~~
3. A supportive recommendation from the student's undergraduate advisor.
4. Acceptance of applicant by a graduate faculty member who agrees to serve as the student's graduate mentor.

Master of Natural and Applied Science – Program Change
Complete New Catalog Information

Master of Natural and Applied Science (Interdisciplinary Program)

Temple Hall, room 142, Phone: (417) 836-5249
Email: DanielBeckman@MissouriState.edu or XingpingSun@MissouriState.edu
Website: <http://www.cnas.missouristate.edu/mnas.htm>
Directors: Daniel Beckman and Xingping Sun

Program Description

The Master of Natural and Applied Science is designed to provide those working in an environment where scientific knowledge is a priority, such as science teaching and scientific applications, the opportunity to expand their knowledge and experiences consistent with their professional goals and objectives through an interdisciplinary program of study in the natural and applied sciences. The curriculum will consist of formal courses in one or more areas of concentration, professional advisement, graduate seminar or research options (e.g., master’s thesis), as well as incorporating the candidate’s background, goals, and objectives.

Program Objectives

1. To increase both the depth and breadth of knowledge in one or more of the areas in natural sciences for understanding and appreciation of the interdisciplinary nature of science.
2. To provide advanced training and education for expanding current scientific knowledge and capabilities.
3. To provide a base of knowledge or enhancement in an area of natural science outside an original field of study.

Admission Requirements

In order to be considered for admission students must meet the following requirements. These are minimum requirements; acceptance into the program is on a competitive basis.

1. The student must have a bachelor’s degree from a college or university accredited by agencies recognized by Missouri State University or equivalent education from a foreign university.
2. The student must have a GPA of 3.00 on a 4.00 scale for the last 60 hours of course work required for the undergraduate degree, AND a score on the Graduate Record Examination (GRE) meeting or surpassing the minimum score prescribed by the MSU Graduate Catalog for admission to graduate study (<http://graduate.missouristate.edu/requirements.htm>).
3. The student must submit a Statement of Interest and at least two Letters of Recommendation; submit these directly to the MNAS Program Director, or Darr School of Agriculture if Agriculture is the primary area of interest.
4. International applicants are also required to submit a score of not less than 550 on the paper-based or a comparable score of 213 on the computer-based TOEFL, with a minimum of 50th percentile on the Listening Comprehension Section.

5. The student must have an undergraduate background of at least 20 semester hours in the natural and applied sciences. Students may be required to meet course prerequisites for their emphasis areas. Undergraduate courses will not be credited as course requirements for the master's degree.

Graduate Assistantships

A limited number of teaching assistantships (TA) may be available, awarded on a competitive basis. Applications (<http://graduate.missouristate.edu/assistantship.htm>) are to be submitted to the MNAS Program Director, or Darr School of Agriculture if Agriculture is the primary area of interest. Applicants should have all application materials submitted by March 1 (fall assistantships) or October 1 (spring assistantships) to ensure being considered for a TA position. GRE General Test scores may be considered in awarding assistantships.

Degree Requirements (minimum of 32 hours)

1. **Advisory Committee.** Initially, each student will be advised by the departmental coordinator of graduate studies from the student's primary emphasis area. As soon as possible, the student will select a graduate faculty member from that department to chair a graduate advisory committee consisting of at least three faculty members that includes a faculty member from the student's second area of concentration. This committee will supervise the remainder of the student's program. Some departments may require that an advisory committee chair be identified prior to acceptance into the program; applicants should contact the department of the primary emphasis area.
2. **Program of Study.** This unique interdisciplinary master's program requires more than one area of concentration. Each individualized program will be structured by the advisory committee in consultation with the student. The academic background, professional experience, academic objectives, and personal needs will be considered in establishing the individual's program.

Students may select areas of primary emphasis in the following six departments in the College of Natural and Applied Sciences: Biology; Chemistry; Computer Science; Geography, Geology and Planning; Mathematics; and Physics, Astronomy and Material Science; and in the Darr School of Agriculture. In special cases, a "primary emphasis" may be a science topic that is interdisciplinary in itself (for example, Environmental Science), and the relevant course work include more than one department; such a program of study must be approved by the student's Advisory Committee and program director. Students will select a second area of concentration from the above mentioned academic units or from the College of Business (COB). With approval of the Advisory Committee and program director, other possible outside areas may be pursued, such as education. This second area of concentration may also be inherently interdisciplinary as long as it is distinct from the primary area.

3. **Course Requirements.** The student must select a primary emphasis area consisting of at least 16 hours of courses selected from one department in the College of Natural and Applied Sciences listed above. The student must also select 9-16 hours of graduate courses outside the primary area approved by the student's advisory committee. In total, the student must complete at least 32 hours of course work, of which at least 16 must be in courses open only to graduate students (numbered 700 or above).
4. **Grade Point Average.** A GPA of at least 3.00 on a 4.00 scale for all graduate work at Missouri State and course work transferred from other institutions is required.
5. **Research Requirements.** A student will be required to complete one of the following research requirements.

Thesis Option: The Thesis option requires the completion of a research thesis supervised by the student's

3

advisory committee. The thesis shall be approved by the advisory committee and by the Dean of the Graduate College before the degree is granted. A maximum of six hours of thesis credit can be applied toward the minimum hours required for the master's degree.

Non-Thesis Option: The Non-Thesis option requires the completion of a minimum of one semester course which shall require an extensive research paper or creative work. The student's advisory committee must approve the final research paper and complete a Seminar Report form that is submitted to the academic department chosen as the major area of concentration and subsequently to the Graduate College for the approval of the Dean.

Internship Option: The Internship option requires the completion of internship with a discipline-related business, non-profit organization, or government agency (480 hours). This must include an extensive project that is approved and supervised by the student's on-site mentor and the departmental advisory committee. A maximum of six hours of Internship credit can be applied toward the 32 hours required for this degree.

6. **Comprehensive Examination.** After most of the course work has been completed, and upon approval of the advisory committee, a written comprehensive examination will be administered and evaluated by the advisory committee. This examination must be passed by the candidate before a degree will be given.
7. **Time Limit.** The student must complete all requirements within an eight-year period (exclusive of the time spent in the United States Armed Forces).

The Professional Science Master Designation

A student who selects business as the second area of concentration and completes the internship option of the research requirements will receive the Professional Science Master (PSM) designation. The PSM program is recognized by the national Council of Graduate Schools.

Accelerated Master's Degree Option

Eligible Missouri State University students in a major in the College of Natural and Applied Sciences may apply for preliminary acceptance into the Master of Natural and Applied Science program after admission requirements for the accelerated master's option have been satisfied. If accepted, graduate courses chosen from approved 600-level courses or higher may be counted toward both the graduate and undergraduate degrees, with a maximum of 12 credit hours. This option offers an opportunity for CNAS majors whose goals, academic capabilities, and career planning include graduate work, to complete the requirements for the master's degree in less time than would otherwise be possible. Contact the MNAS Program Director for further information and guidelines.

All requirements for the implemented undergraduate program should be met for graduation from the undergraduate degree program. A student may fully be admitted to the Graduate College upon completion of the requirements for the baccalaureate degree. All requirements for the implemented master's program should be met for graduation from the master's degree program.

A student must be admitted into the Accelerated Master's Degree Program at Missouri State University in order to begin taking graduate course work for dual credit. Admission requires approval from the Graduate Program Advisor, Department Head of the undergraduate program, and the Dean of the Graduate College. Students admitted into the Accelerated Master's Degree program will not be fully admitted into the Graduate College until completion of their undergraduate degree and fulfillment of all other requirements for admission to the Graduate College (such as the Graduate Record Examination). Student should be awarded the bachelor's degree upon completion of the minimum of 125 hours of combined graduate and undergraduate course work and degree specific requirements.

Admission Requirements for the Accelerated Master's Option

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1. Junior standing and a GPA 3.25 or better.
2. A supportive recommendation from the student's undergraduate advisor.
3. Acceptance of applicant by a graduate faculty member who agrees to serve as the student's graduate mentor.