

# **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposal Form

Submitte	tted on 03/27/2017 by William Bray ( <u>WBray@MissouriState.edu)</u> .	
'All fields :	s require input	
	posal applies to:	
⊛ Ar	An existing COURSE	
O Ar	An existing REGULAR (e.g. permanent) SECTION of a variable content course.	
Existing Co	Course:	
MTH181 Tr	Trigonometry:	j zastana
urrent online	oposal need to be reviewed by CGEIP? No ® Yes  oposal need to be reviewed by EPPC? ® No © Yes  line catalog description:	
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urrent online MTH 181 Tr Prerequisit. Quantitativ trigonomet graduation s required	posal need to be reviewed by EPPC? No Yes  Ine catalog description:  Trigonometry  Site: "C" grade or better in MTH 135 or appropriate placement score. General Education Course (Focus on tive Literacy), Triangle trigonometry and its applications; trigonometric and inverse trigonometric functions; settric identities and equations; Rational, exponential and logarithmic functions. Cannot receive credit toward on for both MTH 181 and MTH 138. Cannot count toward a mathematics major or minor. A grade of "C" or better ad in this course in order to take MTH 287. Cannot be taken Pass/Not Pass. 3(3-0) F.S.	ose existing formatting; please review
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What is changing? Check all boxes that apply.

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Does	this change affect course assessment (	e.g. stude	nt learning evidence/outcomes)? O No O Yes				
How di	d you determine the need for this chang	e? Check	all boxes that apply or specify other.				
Ø	Routine or annual review/assessment of	of curricu	шт	Ø	Faculty Input	[maj	Student Input
***************************************	Accreditation/certification compliance			O	Review of catalog in	formation	
된	Education. Stu	dents w	as prerequisite and the latter satisfies the Q no place into MTH 181 (by passing MTH 135 nt automatically met. Effectively, this stream	end pa	ss MTH 181 with a C		All The state of t
2	Check if this is a non-substantive chan	ge.					
		•	y departmental or program faculty? (MM/DD/YYY'	n		02/01/20	<b>217</b>
What is		•	y departmental or program faculty? (MM/DD/YYY	n		02/01/20	<b>317</b>
What is	the date that this course change was ap	•	y departmental or program faculty? (MM/DD/YYY'	<b>0</b>		02/01/20	<b>)17</b>
What is <b>Current</b> College	the date that this course change was ap	•	y departmental or program faculty? (MM/DD/YYY'			02/01/20	<b>)17</b>
What is Current College	the date that this course change was an	proved b				<b>02/01/2</b> (	<b>)17</b>
What is Current College Propose 3/27/20	the date that this course change was ap  Status: Council Review I Progress:	proved b				<b>02/01/2</b> (	<b>317</b>
What is Current College Propose 3/27/20	the date that this course change was an Status: Council Review Il Progress: 117 - Submitted by Department H	proved b				02/01/20	2)77



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# (2)

### **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action
Workflow > CAW - Change Course Proposal Form

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Submi	itted on	03/27/:	2017 by Willia	ım Bray ( <u>W</u> i	Bray@Mis	souriSta	<u>te.edu)</u> .				
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What is changing? Check all boxes that apply.

	Course Code	. 0	Course Number ( <u>Check Availability</u> )		Title	С	Prerequisite
C]	Credit Hours/Contact Hours		Periodicity	ন্থ	Description		
1201110	for proposed change change removes MTH 261 as a Qua	ntitative	Literacy course in General Education.				
Does	this change affect course assessment (e	.g. studer	at learning evidence/outcomes)? O No O Yes				
How die	d you determine the need for this change	? Check a	II boxes that apply or specify other.				
Z	Routine or annual review/assessment of	of curricul	um	П	Faculty Input	<b>k.</b>	Student Input
	Accreditation/certification compliance				Review of catalog in	formation	
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83	Check if this is a non-substantive chan	ge.					
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3/27/20	117 - Submitted by Department H	ead (Wi	lliam Bray)				
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lo comn	nents have been added to this pr	oposal.					



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### **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposal Form

Change (	Cou	se Proposal Form	
Submitted or	n 03/27	/2017 by William Bray ( <u>WBray@MissouriState.edu)</u> .	
*All fields requi	re input		
This proposal ap	plies to:		
An existi	ing COURS	E .	
O An existi	ing REGUL	AR (e.g. permanent) SECTION of a variable content course.	
Existing Course:			
MTH287 Compu	tational C	alculus with Analytic Geometry I	
Prerequisité: "C" ( Education Course différential and in credit toward gra	or better i e (Focus d ntegral ca aduation f	Calculus with Analytic Geometry I  In MTH 135 or MTH 138, or an approved score on a department placement test. General  In Quantitative Literacy). Introduction to the concepts and methods of analytic geometry and  Iculus with emphasis on applications in the natural sciences and technology. Cannot receive  or both MTH 287 and MTH 261. Cannot receive credit for both MTH 287 and MTH 285. A grade  In this course in order to take MTH 288. Cannot be taken Pass/Not Pass. 3(3-0) F	
Revise the current or	nline catalo	g description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing for	ormatting; please review or
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Prerequisite: "C" Literacy). Introdusciences and tech of "C" or better is	or better i iction to ti inology. C i required	in MTH 135 or MTH 138, or an approved score on a department placement test. General Education Course (Fecus the concepts and methods of analytic geometry and differential and integral calculus with emphasis on applications annot receive credit toward graduation for both MTH 287 and MTH 261. Cannot receive credit for both MTH 287 at in this course in order to take MTH 288. General Education Quantitative Literacy requirement is fulfilled with a green Pass/Not Pass. 3(3-0) F	s in the natural and MTH 285. A grad
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What is changing? Check all boxes that apply.

	Course Code		Course Number ( <u>Check Availability</u> )		Title		Prerequisite
П	Credit Hours/Contact Hours		Periodicity	. 2	Description		
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Does	this change affect course assessment (e.g	g. student	learning evidence/outcomes)? ® No O Yes				:
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Ø	Routine or annual review/assessment of	curriculu	m	Ø	Faculty Input		Student input
П	Accreditation/certification compliance		•	۵	Review of catalog inf	ormation	
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8	Check if this is a non-substantive change	€.					
What is t	he date that this course change was appa	oved by	departmental or program faculty? (MM/DD/YYYY)	)		02/01/201	7
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3/27/20	17 - Submitted by Department He	ad (Will	iam Bray)				
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o comm	ents have been added to this pro	posal,					
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### **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action
Workflow > CAW - New Interdisciplinary Program Proposal Form

### **New Interdisciplinary Program Proposal Form**

#### Submitted on 03/29/2017 by Matthew Siebert (MSiebert@MissouriState.edu).

This special form is to be used for internal Missouri State approval of a new Interdisciplinary program involving two or more academic departments/schools including graduate programs, undergraduate majors (comprehensive or non-comprehensive), minors, graduate certificates, undergraduate certificates.

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 Institutional Research. 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.

Only select departments with at least 9 hours or at least 30% of total program hours.

Sponsoring Department (1): (responsible for administration and budget)

Sponsoring Department (4): (If applicable)		ining daya ngamanga karang kanggangan kanggan kanggan kanggan kanggan kanggan kanggan kanggan kanggan kanggan Kanggan kanggan kangga
Proposed Program Title:		, rann der segen estemmen mit men der mit mig des bezeitiggeben mit mig die bei der met der mit mit der mit mi
Foundations of Interdisciplinary Science		
Choose One:	nen swapani, di sandah mak <del>a maga maga di</del>	en e
	® Minor	Graduate Certificate
○ Major (Non-Comprehensive/Graduate Program)		○ Graduate Certificate
riogi ai īl J	୍ Undergraduate Certificate	O Master's Degree
்Comprehensive Major	• .	-

Choose All That Apply:

CAW - New Interdisciplinary Program Proposal Form - Curricular Ac... https://mis.missouristate.edu/Student/ccr/createIDProgramProposal/5165

- 2. Estimated costs for first five years: Attached
- 3. Complete catalog description (including new courses and course changes pending approval): Attached
- 4. CBHE Application (If applicable): Not Attached
- \*Note: For new programs requiring CBHE approval, CBHE forms NP, PS, and PG will satisfy #1 and CBHE form FP will satisfy #2.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

03/29/2017

#### **Current Status:**

College Council Review

#### Proposal Progress:

03/29/2017 - Submitted by Department Head (Toby Dogwiler)

03/29/2017 - Submitted by Department Head (Bryan Breyfogle)

03/29/2017 - Submitted by Department Head (David Cornelison)

#### **Review Comments:**

No comments have been added to this proposal.



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#### Rationale

In the state of Missouri, there is a desperate need for high-school science teachers with in-depth content knowledge in their field of interest, but also foundational knowledge in the other biological and physical sciences. This minor works in conjunction with program changes put forth by the departments of Chemistry, GGP, and PAMS to offer students a clear path towards a degree that meets the requirements above. This minor does not include courses in teacher education that are required by the state of Missouri for certification as a teacher. Certification requirements can be met through post-baccalaureate programs or masters programs.

As an interdisciplinary minor that serves students from each of the departments mentioned above, there are a large number of courses explicitly listed within the program of study. However, it is important to note that the actual number of courses this program adds to a student's program of study is much smaller than it first appears. For example, as chemistry major, CHM 160(4), 161(1), 170(3), and 171(1) do not count towards the minor (they are excluded by the statement: "Only course codes outside of the department of your major will count towards the minor" – in fact they are required by the major). Additionally, PHY 123(4) or PHY 203(5) and PHY 124(4) or PHY 204(5) are required by the major. This means that BIO 121(4), BIO 122(4), GLG 110(4), GRY 135(4), and SCI 505(3) comprise the additional courses (5 courses, 19 hours) a chemistry major must take to obtain this minor. It is also important to note that BIO 121(4) can also fulfill the student's Life Sciences General Education requirement, while GLG 110(4), GRY 135(4), PHY 123(4), or PHY 203(5) will fulfill the Physical Science requirement.



#### Estimated costs for first five years

This minor provides a clear course of study for students interested in developing foundational knowledge in biological and physical sciences appropriate for pursuing post-baccalaureate certification to teach in the state of Missouri. The students that are served by this minor are already required to complete these courses in pursuit of certification to teach within the state of Missouri. For this reason, there will be no new costs incurred by implementation of this minor.



#### Foundations of Interdisciplinary Science Minor:

This minor is designed for students preparing to enter post-graduate studies to become a high school science teacher. This minor does not include courses in teacher education that are required by the state of Missouri for certification as a teacher. Certification requirements can be met through post-baccalaureate programs or masters programs. Only course codes outside of the department of your major will count towards the minor:

- A. Foundational biology competencies: BIO 121\*(4) and 122(4).
- B. Foundational chemistry competencies: CHM 160(4), 161(1), 170(3), and 171(1).
- C. Foundational geography and geology competencies: GLG 110\*(4) and GRY 135\*(4).
- D. Foundational physics and astronomy competencies: PHY 123\*(4) or PHY 203\*(5) and PHY 124 (4) or PHY 204 (5).
  - a. Those seeking earth science certification must additionally complete AST 115(4)
- E. Intellectual Foundations of Science and Technology: SCI 505(3)

\*In the Natural World area of General education, BIO 121 will satisfy Life Sciences requirement while GLG 110, GRY 135, PHY 123, or PHY 203 will satisfy the Physical Sciences requirement. Some additional courses on the list may already be part of major degree requirements.

# **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposal Form

Change (	Course P	ropos	al Form				
Submitted or	n 03/02/2017 by	y G Schic	k (AlanSchick@MissouriSta	te.edu).			
*All fields requi	ire input						
This proposal ap	oplies to:						•
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○ An exist	ing REGULAR (e.g. pern	nanent) SECT	ION of a variable content course.		-		
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/ill this proposal ne	ed to be reviewed by El	PPC? <sup>®</sup> N	lo O Yes				
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GHM 452 Bloche	emistry I						
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♦ → B	I S						
enzymes, nucleio	or better in CHM 34 acids, carbohydrate:	s, lipids and	4. Recommended Prerequisite: BIO 12 membranes. CHM 352 and 554 cann ceive credit for both CHM 554 and	ot both be a	pplied toward a		
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Credit Hou	rs/Contact Hours	₩.	Periodicity	Ø	Description		

Reaso	on for proposed change				
Biod	chem I (CHM 452) and Biochem Lab I (CHM 453) are being renumbered in order	er to create gradua	te-level parallel		
11/11/2015	rings for these courses, which also requires updating the course descriptions.				
14) (11)	653 are not available for the CHM course code, the undergraduate courses (C umbered to be consistent with the new graduate courses, CHM 654 and CHM (	Harmon Property Committee	Roman Sami dalim della d		
100000	ng submitted as new course proposals.		COLUNICOSTATE		
100,000					
Doe	es this change affect course assessment (e.g. student learning evidence/outcomes)? 🕦 N	lo O Yes			
How o	did you determine the need for this change? Check all boxes that apply or specify other.		•		
Ø	Routine or annual review/assessment of curriculum	Ø	Faculty Input	된	Student Input
	Accreditation/certification compliance	П	Review of catalog	information	
	Other (be specific):				
	Check if this is a non-substantive change.				
What i	is the date that this course change was approved by departmental or program faculty? (Mi	M/DD/YYYY)		09/20/	2016
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3/03/2	2017 - Submitted by Department Head (Bryan Breyfogle)				
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o com	nments have been added to this proposal.				



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# **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposal Form

Submit	ted or	n 03/0	2/2017 by	G Schic	k ( <u>AlanSc</u>	:hick@Mis	souriStat	e.edu).				
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Prerequise explore the consumer that the consume	Bloche Site CHI he bloch ules. Ch	M 452 or nemical li M 353 a  nline catal  I  ochemistr 4 452 55 vriting, a	concurrent e terature, scie nd 453 canno  g description  y Laboratory  4 or concurre nd the biocher	ntific repo it both be seeded: ( I Int enrollmmical techr	ort writing, an applied towa (Strikethrough all ent. A series hiques used to	d the blocke rd a chemist deletions and ins of multidimer o isolate and	micel technic ry major or m ent/bold new info	ues used to inor. Supple mation. Any cor mical experir cules. CHM	isolate and stu- mental course tent that is copied a	idy:  fee.  Indipasted will lose to explore the 5 cannot both	existing formatting; please biochemical literation be applied toward of 5. Supplemental c	ure,
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	Credit Hours/Contact Hours	₽	Periodicity	kel	Description			
Biocl creat Beca 452 a 654 a	n for proposed change nem lab ! (CHM 453) and the corress e graduate level parallel offerings fo use the course numbers 652 and 65 und 453) are being renumbered to be und CHM 655 are being submitted a ering more than once/year in years	or these co 3 are not a e consiste s new cou	urses, which also requires updati vailable for the CHM course code it with the new graduate courses, se proposals. Periodicity is being	ng the course de , the undergrad CHM 654 and 0	escriptions uate courses (CHM CHM 655, 'CHM			
Does	this change affect course assessment (e.	.g. student l	earning evidence/outcomes)? <sup>®</sup> No	○ Yes				
How die	d you determine the need for this change	? Check all I	poxes that apply or specify other.					
N	Routine or annual review/assessment of	f curriculum		Ø	Faculty Input	<u>52</u> 3	Student Input	
	Accreditation/certification compliance			E	Review of catalog in	formation		
	Other (be specific):	latik (f <b>y</b>						
D	Check if this is a non-substantive chang	je.						
What is	the date that this course change was app	proved by d	epartmental or program faculty? (MM/	DD/YYYY)		09/20/2	<b>016</b>	
urrent	Status:							
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3/03/20	017 - Submitted by Department H	ead (Brya	n Breyfogle)				÷	
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#### **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposel Form

# **Change Course Proposal Form** Submitted on 03/03/2017 by G Schick (AlanSchick@MissouriState.edu). \*All fields require input This proposal applies to: An existing COURSE An existing REGULAR (e.g. permanent) SECTION of a variable content course. **Existing Course:** CHM552 Biochemistry II Will this proposal need to be reviewed by CGEIP? Will this proposal need to be reviewed by EPPC? Current online catalog description: CHM 552 Blochemistry II Prerequisite: "C-" or better in CHM 452. Bioenergetics--Metabolism of biomolecules including carbohydrates, lipids. amino acids and nucleotides. Photosynthesis. Nitrogen metabolism, Mechanisms of hormone action. May be taught concurrently with CHM 652. Cannot receive credit for both CHM 552 and CHM 652. 3(3-0) S Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.) CHM 552 556 Biochemistry II Prerequisite: "C-" or better in CHM 452 554. Bioenergetics---Metabolism of biomolecules including carbohydrates, lipids, amino acids and nucleotides. Photosynthesis. Nitrogen metabolism. Mechanisms of hormone action. May be taught concurrently with CHM 652 656. Cannot receive credit for both CHM 552 556 and CHM 652 656, 3(3-0) S, D What is changing? Check all boxes that apply. Course Code Course Number (Check Availability) Prerequisite

Description

Credit Hours/Contact Hours

Periodicity

Reason for proposed change

Blochem II (CHM 552) and Blochem Lab II (CHM 553), along with their parallel courses (CHM 652 and 653, respectively), are being renumbered to maintain sequential consistency with the Blochem I offerings that are changing course numbers to become CHM 554 (lec) and CHM 555 (lab). A complete renumbering of the main blochemistry sequence is necessary to create parallel 600-level offerings for the Blochem I courses (lec and lab — see other Change Course and New Course proposal forms). Also, enrollments in blochemistry have grown over recent years, so the periodicity of "On Demand" is being added to "Spring" to allow offering flexibility in years of high enrollment.

pageties		KOOZE III		·	
Doe	es this change affect course assessment (e.g. student learning evidence/outcomes)?   No Yes				
How	did you determine the need for this change? Check all boxes that apply or specify other.				
2	Routine or annual review/assessment of curriculum	N	Faculty Input	<b>F</b> 3	Student Input
	Accreditation/certification compliance		Review of catalog int	ormation	
	Other (be specific):				
D	Check if this is a non-substantive change.				
Whati	is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY)	)		09/20/2	016
Curren	nt Status:				
College	e Council Review				·
Propos	aal Progress:		•		
03/03/	2017 - Submitted by Department Head (Bryan Breyfogle)				
Review	Comments:				
No соп	nments have been added to this proposal.				
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### **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action
Workflow > CAW - Change Course Proposal Form

lhang	ge Course 1	Propos	sal Form					
Submitte	ed on 03/03/2017	by G Schic	k ( <u>AlanSchick@M</u>	issouriStat	<u>e.edu)</u> .	·		
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This propo	sal applies to:							
⊛ Aı	n existing COURSE							
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CHM652 B	lochemistry II	1601.2 III.		16	157			
enino acid concurrent evise the cur	s and nucleotides. Phot ly with CHM 552. Cann	osynthesis. Ni ot receive crec	jeticsMetabolism of bi trogen metabolism. Mec lit for both CHM 552 an (Strikethrough all deletions and	hanisms of hor d CHM 652: 3(3	mone action -0) S	May be taught	pasted will lose exis	ting formatting; please raview pr
submission.)	B 1 S	p.p			n en de l'actionne de la company			<u></u>
Prerequisite nucleotides CHM 552 5		en metabolism 3(3-0) 5, <b>D</b>	HM 654. Bioenergetics . Mechanisms of hormon					
	rse Code	<u> </u>	Course Number ( <u>Check</u>	Aveilability) ·	EI	Title		Prerequisite
::) Cred	lit Hours/Contact Hours	S.7	Periodicity		E	Description		

Reason for proposed change

Biochem II (CHM 652) and Biochem Lab II (CHM 653), along with their parallel courses (CHM 552 and 553, respectively), are being renumbered to maintain sequential consistency with the Biochem I offerings that are changing course numbers to become CHM 554 (lec) and CHM 555 (lab). A complete renumbering of the main biochemistry sequence is necessary to create parallel 600-level offerings for the Biochem I courses (lec and lab—see other Change Course and New Course proposal forms). Also, enrollments in biochemistry have grown over recent years, so the periodicity of "On Demand" is being added to "Spring" to allow offering flexibility in years of high enrollment.

Does	Does this change affect course assessment (e.g. student learning evidence/outcomes)? ® No C Yes							
How did you determine the need for this change? Check all boxes that apply or specify other.								
Z	Routine or annual review/assessment of curriculum	M	Faculty Input	Ø	Student Input			
	Accreditation/certification compliance	a	Review of catalog in	nformation				
	Other (be specific):							
	Check if this is a non-substantive change.							
What is	What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY)							

#### Current Status:

**Grad Council Review** 

#### Proposal Progress:

03/03/2017 - Submitted by Department Head (Bryan Breyfogle) 03/07/2017 - Reviewed by Dean (Tamera Jahnke)

#### **Review Comments:**

No comments have been added to this proposal.





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# **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposal Form

Submitt	ted on 03	/03/2017 by G Schick ( <u>AlanSchick@MissouriState.edu)</u> .
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	s <b>require in</b> osal applie	
	An existing C	
o /	An existing R	EGULAR (e.g. permanent) SECTION of a variable content course.
Existing C	Course:	
CHM553	Advanced E	lochemistry Laboratory
fill this prop urrent onlin	posal need to ne catalog de .Advanced l	be reviewed by CGEIP? No Yes  be reviewed by EPPC? No Yes  scription:  Slochemistry Laboratory  9; and CHM 552 or concurrent enrollment, Emphasis on modern techniques in the blochemistry
Vill this prop Current onlin CHM 553 Prerequis laboratory trace tech CHM 553	posal need to ne catalog de Advanced i lite: CHM 45 y; enzymolo niques. Suj and CHM 6	be reviewed by EPPC? ® No Yes scription: Slochemistry Laboratory
CUITENT ONLY CHM 553 Prerequis laboratory trace tech CHM 553	posal need to ne catalog de Advanced I ite: CHM 45 y; enzymolo nniques: Sur and CHM 6 urrent online	be reviewed by EPPC? ® No Yes  scription:  Slochemistry Laboratory  3; and CHM 552 or concurrent enrollment. Emphasis on modern techniques in the blochemistry  3y, protein purification and analysis; protein structure determination; isoelectric focusing; HPLC;  splemental course fee. May be taught concurrently with CHM 653, Cannot receive credit for both  53, 2(0-4) D
Vill this prop Current onlin CHM 553 Prerequis Ilaboratory trace tech CHM 553 Revise the co posubmission.	posal need to ne catalog de Advanced !  Advanced !  itte: CHM 45 y; enzymolo nniques. Suj and CHM 6	be reviewed by EPPC? No Yes  scription:  Slochemistry: Laboratory.  3; and CHM 552 or concurrent enrollment. Emphasis on modern techniques in the blochemistry.  3y, protein purification and analysis; protein structure determination, isoelectric focusing; HPLC;  plemental course fee. May be taught concurrently with CHM 653. Cannot receive credit for both  53, 2(0-4) D.  catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review pri
CHM 553 Cevise the consumment of the consumment	posal need to ne catalog de Advanced il lite: CHM 45 y; enzymolo nniques. Sur and CHM 6 urrent online )  557 Advance lite: CHM 45 on and analy	be reviewed by EPPC?  No Yes  Stochemistry Laboratory  Stochemistry Laboratory  3; and CHM 552 or concurrent enrollment. Emphasis on modern techniques in the blochemistry  3y, protein purification and analysis; protein structure determination; isoelectric focusing; HPLC;  plemental course fee. May be taught concurrently with CHM 653, Cannot receive credit for both  53, 2(0-4) D  catalog description as needed: (Strikethrough all deletions and insert/bold new Information. Any content that is copied and pasted will lose existing formatting; please review prices.
CHM 553 Revise the coordinates of the coordinates o	posal need to ne catalog de Advanced il lite: CHM 45 y; enzymolo nniques. Sur and CHM 6 urrent online )  557 Advance lite: CHM 45 on and analy	be reviewed by EPPC? No Yes  scription:  Slochemistry Laboratory  Stand CHM S52 or concurrent enrollment. Emphasis on modern techniques in the biochemistry  gy, protein purification and analysis; protein structure determination; isoelectric focusing; HPLC:  polemental course fee. May be taught concurrently with CHM 653. Cannot receive credit for both  63. 2(0-4) D  catalog description as needed: (Strikethrough all deletions and insert/bold new Information. Any content that is copied and pasted will lose existing formatting; please review pri  Seed Biochemistry Laboratory II  8. 555; and CHM 552 556 or concurrent enrollment. Emphasis on modern techniques in the biochemistry laboratory; enzymology, protein sits; protein structure determination; isoelectric focusing; HPLC; trace techniques. Supplemental course fee. May be taught concurrently

E)	Credit Hours/Contact Hours	□ Pe	riodicity	<b>E</b> ]	Description			
Bioch respe	i for proposed change nem il (CHM 582) and Biochem Lab ectively), are being renumbered to n se numbers to become CHM 554 (le and CHM 655 (lab), Additionally, up	naintain sequ	ential consistency with the Bioc 555 (lab) and adding new gradu	hem I offerings t ate parallel cour	hat are changing ses, CHM 654		,	
Does	this change affect course assessment (e	.g. student lear	ning evidence/outcomes)? <sup>®</sup> No	○ Yes				
How die	d you determine the need for this change	? Check all box	es that apply or specify other.					
Ø	Routine or annual review/assessment o	f curriculum		23	Faculty Input	<b>Z</b> i	Student Input	
Ω	Accreditation/certification compliance			(ma)	Review of catalog inf	ormation		•
Ö	Other (be specific):			F122		21		
C	Check If this is a non-substantive chang	je.						
What is	the date that this course change was app	proved by depa	ortmental or program faculty? (MM/D	D/YYYY)		09/20/20	116	
urrent	Status:							
College	Council Review							
roposa	al Progress:							
3/03/20	017 - Submitted by Department H	lead (Bryan I	Breyfogle)					
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lo comn	nents have been added to this pro	oposal.						
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#### **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposal Form

# **Change Course Proposal Form** Submitted on 03/03/2017 by G Schick (AlanSchick@MissouriState.edu). \*All fields require input This proposal applies to: An existing COURSE An existing REGULAR (e.g. permanent) SECTION of a variable content course **Existing Course:** CHM653 Advanced Biochemistry Laboratory Will this proposal need to be reviewed by CGEIP? Will this proposal need to be reviewed by EPPC? No ○ Yes Current online catalog description: CHM 653 Advanced Biochemistry Laboratory Prerequisite: CHM 453; and CHM 552 or CHM 652 or concurrent enrollment in CHM 552 or CHM 652. Emphasis on modern techniques in the biochemistry laboratory; enzymology, protein purification and analysis; protein structure determination, isoelectric focusing, HPLC; trace techniques. Supplemental course fee. May be taught concurrently with CHM 553. Cannot receive credit for both CHM 553 and CHM 653. 2(0-4) D Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior I CHM 653 657 Advanced Biochemistry Laboratory II Prerequisite: CHM 453 555 or CHM 655; CHM 552 556 or CHM 652 656 or concurrent enrollment. Emphasis on modern techniques in the biochemistry laboratory; enzymology, protein purification and analysis; protein structure determination; isoelectric focusing; HPLC; trace techniques. Supplemental course fee. May be taught concurrently with CHM 553 557. Cannot receive credit for both CHM 553 557 and CHM 653 657. 2(0-4) D What is changing? Check all boxes that apply Course Code Course Number (Check Availability) Prerequisite

	Credit Hours/Contact Hours	☐ Periodicity	ACI	Des	críption			÷
Reaso	on for proposed change	·						
22:20		Láb II (CHM 653), along with thei to maintáin sequential consisten		and the latest and the same	re changing	10 TO		
GD:HSE	and the second of the second o	4 (lec) and CHM 555 (lab) and ad y, updates to course titles and de		and deciment of the same of the	The second second			
Do	es this change affect course assessme	ont (e.g. student learning evidence/out	comes)? <sup>®</sup> No O Yes					
How	did you determine the need for this ch	ange? Check all boxes that apply or s	pecify other.					
8	Routine or annual review/assessm	ent of curriculum	. 2	Facu	ilty Input	.⊠	Student input	
	Accreditation/certification complia	ince	0	Revi	ew of catalog in	formation		
	Other (be specific):			77777777777777777777777777777777777777		A SECTION OF THE SECT	1 P467 - 2757	
	Check if this is a non-substantive	change.						
Whati	is the date that this course change we	is approved by departmental or progra	am faculty? (MM/DD/YYYY)		·	09/20/20	716	4 D
Curren	it Status:	•						
Grad C	ouncil Review							
Propos	ai Progress:							
	2017 - Submitted by Departme 2017 - Reviewed by Dean (Tam	· · · -						
Review	Comments:		·					
No com	nments have been added to thi	s proposal.						



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### **Curricular Action Workflow**

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Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Department:		
Chemistry		
Type of Program Choose One:		
Major (Non-Comprehensive/Graduate	୍ Minor	Academic Rules
Program)	ਂ Certificate	Other
○ Comprehensive Major	○ Certification	
© Option		

Current Catalog Description: (Either cut and paste present description from online catalog OR provide as an attachment below)

Chemistry (Non-Comprehensive)

Bachelor of Science

- A. General Education Requirements see General Education Program and Requirements section of catalog
- B. Major Requirements
- 1. CHM 160(4), 161(1), 170(3), 171(1), 302(5), 342(5), 343(5), 375(3), 398(1)\*; CHM 505(4) or 506(3) and CHM 507(3) and 508(2), 492(0), 498(1)\*, 502(4); and one hour from CHM 397\* or 399\*,\*\*
  - 2. Chemistry electives from one of the following categories:
- a. For a basic chemistry program without a specific area of emphasis, at least eight hours from CHM 352(3), 376(2), 399\*,\*\*\* or 499(1-3)\*, 460(3) or 461(3), 509(2)
  - b. For students with a strong interest in environmental chemistry: CHM 460(3), 461(3), 462(2)
  - c. For students with a strong interest in biochemistry or pre-medicine: CHM-452(3), 453(2), 552(3), 553(2)
- d. For a specific area of interest not included in categories a, b, or c: at least nine hours of chemistry courses numbered greater than 300 selected in consultation with the student's academic advisor and approved by the department head.
- 3. Public Affairs Capstone Experience will be fulfilled by completion of CHM 398 and 498(2); and CHM 397 or 399 or 499(1)
  - 4. Related science and mathematics requirements:
    - a. MTH 261\*\*\* and 280(10) or MTH 261\*\*\* and 288(8) or MTH 287 and 288(6)
    - b. PHY 123\*\*\* and 124(8) or PHY 203\*\*\* and 204(10)
    - \*Will also count toward the Public Affairs Capstone Experience requirement
    - \*If using CHM399 to fulfill B1 and B.2a. Any hours of CHM399 used to fulfill B.2.a are in addition to B.1.
    - \*\*\*Will also count toward General Education requirements
- G. Minor Required (or second major)
- D. General Baccalaureata Degree Requirements see General Baccalaureate Degree Requirements section of catalog

Not Attached

Complete New Catalog Description: (Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission] OR provide as an attachment below)

			•	
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29.99617		
Chemistry (Non-Comprehensive)		
Bachelor of Science		
	Education Program and Requirements section of catal	log
B. Major Requirements 1. CHM 160(4), 161(1), 170(3), 171(1), 302( and one hour from CHM 397* or 399*,**	(5), 342(5), 343(5), 375(3), 398(1)*; CHM 505(4) or !	506(3) and CHM 507(3) and 508(2); 492(0), 498(1)*, 502(4);
2. Chemistry electives from one of the followi	ng categories:	
a. For a basic chemistry program without 509(2)	a specific area of emphasis, at least eight hours from 0	CHM 352(3), 376(2), 399*,** or 499(1-3)*, 460(3) or 461(3),
b. For students with a strong interest in e	nvironmental chemistry: CHM 460(3), 461(3), 462(2)	
c. For students with a strong interest in bi	ochemistry or pre-medicine: CHM 452(3), 453(2), 552	(3), 553(2)
high school science teaching should declare	a Foundations of Interdisciplinary Science minor led in categories a, b, or c: at least nine hours of chem	
3. Public Affairs Capstone Experience will be f	ulfilled by completion of CHM 398 and 498(2); and CH	M 397 or 399 or 499(1)
4. Related science and mathematics requirem	ents:	
a. MTH 261*** and 280(10) or MTH 261*	** and 288(8) or MTH 287 and 288(6)	
b. PHY 123*** and 124(8) or PHY 203***	and 204(10)	
*Will also count toward the Public Affairs (	Capstone Experience requirement	
**If using CHM399 to fulfill B.1. and B.2.a	Any hours of CHM399 used to fulfill 8.2.a. are in add	lition to B.1.
***Will also count toward General Educati	on requirements	
C. Minor Required (or second major)		
D. General Baccalaureate Degree Requirements -	see General Baccalaureate Degree Requirements secti	on of catalog
		A
Not Attached		
NOT Attached		Total Hours: unchanged
		Total Flours.   Information
What is changing? Check all boxes that app	ılv:	
	•	☑ Other
☐ Title change	☐ From option to program (major)	
☐ Course changes of under 18 hours	☐ From program (major) to option	Added track/option.
☐ Course changes of 18 hours or more	•	
Reason for Proposed Change:		
	lations of interdisciplinary Science", provides basic s	
	ost-graduate studies to become a high school science	
	hat are required by the state of Missouri for certifical post-baccalaureate programs or masters programs.	will as cacille.
What is the date that this new program was	annoved by departmental or program faculty	? (MM/NN/VVV)

**Current Status:** 

College Council Review

#### Proposal Progress:

03/29/2017 - Submitted by Department Head (Bryan Breyfogle)

#### **Review Comments:**

No comments have been added to this proposal.





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# **Curricular Action Workflow**



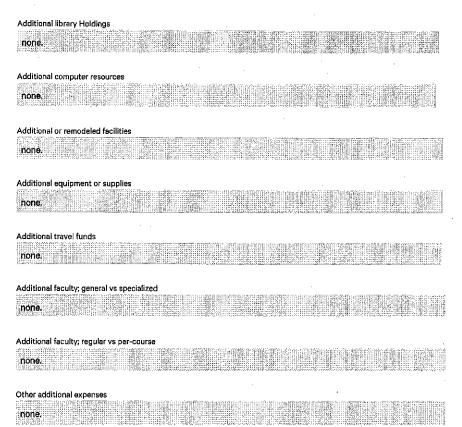


Missouri State > Computer Services - MIS > Curricular Action
Workflow > CAW - New Course Proposal Form

Vev	v Cours	e Proj	osal Form					
Sub	mitted on 03/	/02/2017 I	by G Schick ( <u>AlanS</u>	Schick@Misso	uriState.edu).			
All fiel	ds require inpu				y ac see see see see see see see see see se	,		**************************************
( <b>ệ</b> )	New COURSE						• .	
0	New REGULAR Pl below	ERMANENT SI	ECTION of an existing variab	le content course. If a	new regular section of a	n existing variable topics cour	se, enter the existing co	urse number
Соигве				Course Number: (C	heck Availability)			
Course Bioc	Title: nemistry (							
Will thi	s proposal need to b	e reviewed by	CGEIP? ® No Yes					
Will thi	s proposal need to b	e reviewed by	EPPC? ® No C Yes				•	
PHILIPPIE	uisite/Co-requisite o or better in CHM?		344. Recommended Pren	equisite: BIO 121 or	BMS 110 and 111.			
Struc	ture and function	n of biomolec	Pass/Not Pass grading restr ules: proteins, enzymes, HM 554. Cannot receive	nucleic acids, carb	ohydrates, lipids and r	applicability, UG/GR parallel co nemoranes.	urse, etc.)	
Credit	Hours:	3	Lecture Contact	t Hours:	3	Lab Contact Hours:	0	
Note:	f variable credit, ent	er the highest	number and add to end of co	ourse description. (e.g	. "Variable credit, may be	taken 1-3 hours.")		
eriodie	city. Check all the	at apply.						
<b>2</b> 3	Fall	ū	Fall (even-numbered y	ears only)	D	Fall (odd-numbered y	ears only)	
O	Spring		Spring (even-numbers	d years only)	www.	Spring (odd-numbere	d years only)	

O	Summer	83	On Demand only				•	
	Catalog Description Biochemistry I	•						
Prerequis	ite: "C-" or better in CH		M 344. Recommended Prere ins, enzymes, nucleic acids.			aught concurrently wi	th CHM 554. Cannot receive cred	lit for
both CHM	1 554 and CHM 654. ırs: 3 Lecture contact I			,,	ar and manufactures may go t	aug.it oonour.chiif m		
	offered: Fall, On Demar		Ortaet Hours. O					
include sa	mple syllabus (list top)	cs, course go	als.) Use text box OR upload	d only file types of	PDF, DOC or DOCX.			
Attache	d.			g e e		Attache	.d	
Fre 1 Strendard III	a de un matematico a de o gammillo de a ser en el 1997		e mande l'in camban en litte e ver na entreven et agriferir in elega ( e in	erte e e i se tille e transfer e milija e e issen	o inglant out to the committee of the co	NAMES AND ASSESSMENT OF THE OWNER.		
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	Enter parallel	rourse numbe	ar.				• .	
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	hill for the last of the last				the attached course sylla			
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lew Cours	e Resource Infor	mation						
Anticipated	l Average Enrollment p	er section;		5	Maximum Enrollment Limit	per section:	10	150
				Network Transfer			VEC : XIVA	Est Plant
Anticipated	l Average Enrollment p	er semester:		5	Maximum Enrollment Limit	per semester:	10	
Anticipated	l Average Enrollment p	ег үевг:			Maximum Enrollment Limit	per vear:		Righting
-		-		5			10	
Faculty Loa	d Assignment (equate	d hours):		0				
le anothor -	ourse being deleted?	® No € v.	•					
is another ¢	ourse being deleted?	- NO - Y6	s					

#### What will this course require in the way of:



If additional faculty are not required, how will faculty be made available to teach this course?

The workload for this course will be integrated into that for the (existing) undergraduate parallel course.

List names of current faculty qualified and available to teach this course

Cuebas Fichter Yoshimatsu

What is the anticipated source of students for this course?

Chemistry graduate students who are interested in a biochemistry emphasis but who have not taken an equivalent course as an undergraduate.

If from within the department, will students be taking this course in addition to or in place of other courses?

In place of other courses.

If from outside the department, which courses in other departments would most likely be affected?)

We expect some students from other departments (primarily Biology and/or Biomolecular Sciences) to enroll in this course. Since blochemistry is similar to "molecular biology" it is possible that enrollments in such courses in BIO and BMS would be affected, but students often take both blochemistry and molecular biology as part of their curricula, so the effects would likely be negligible.

Other comments:		
none.		
What is the date that this new course was approved by departmental or program faculty? (MM/DD/YYYY)	09/20/2016	

#### **Current Status:**

**Grad Council Review** 

#### **Proposal Progress:**

03/03/2017 - Submitted by Department Head (Bryan Breyfogle) 03/07/2017 - Reviewed by Dean (Tamera Jahnke)

#### **Review Comments:**

No comments have been added to this proposal.

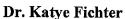




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### CHM 554/654: BIOCHEMISTRY I Fall 2017



Office: 419 Temple; E-mail: kfichter@missouristate.edu
Office Hours: F 3:30-4:30 pm & by appointment

<u>Please note</u>: Emails will not be answered 24 hours before an exam. Please prepare accordingly.

This course is the first semester of an intensive 2-semester survey of intermediate biochemistry. The course begins with a review of the chemical basics of life, (e.g., the chemistry of water, buffer solutions and bonding). Afterwards we will focus on the four classes of biomolecules: proteins, nucleic acids, carbohydrates, and lipids. We will cover the structure and function of proteins and nucleic acids in depth, and investigate how the cell uses macromolecular structures as molecular machines.

CHM 554 will present a poster from an assigned topic as a team to the class; the poster grade will be assigned by peer-review from the students in the course

**CHM 654** will present a poster in a similar format to students enrolled in CHM 554. However, these posters will be finished individually on a research topic related to the course work, approved by the instructor, and include significant peer-reviewed article reference.

**Required Text:** Fundamentals of Biochemistry: Life at the Molecular Level (4th ed), by Voet, Voet, and Pratt. You should come to class with the material to be discussed already read; plan to **devote at least 5 hours/week** to reading your textbook in order to stay current with the lecture material.

**Supplemental Reading**: Each student is responsible for accessing blackboard to obtain supplemental reading and assignments.

#### Grade Breakdown:

<u> </u>	quantity	points each	total points	% points
quizzes	5	25	125	16.1
poster project: presentation	1	100	100	12.9
poster project: evaluations	5	10	50	6.5
research article homework	2	25	50	6.5
exams	3	100	300	38.7
final	1	150	150	19.4
		total	775	100.0

<sup>\*</sup>Evaluations from each session will be worth 10 points total, regardless of the number of posters evaluated that session.

Each student's point total will be converted into a letter grade using the following point scale:

Α	93-100%	C+	77-79%
<b>A</b> -	90-92%	С	73-76%
B+	87-89%	C-	70-72%
В	83-86%	D+	67-69%
B-	80-82%	D	65-66%
		F	0-64%

Exams: Three interim exams (100 points each) and a final exam (150 points) will be given. Material for the exams will be derived from both the textbook and the lecture. <u>Do not expect to do well on exams if you haven't read the textbook!</u> Test dates have been tentatively specified in the schedule assist you in planning your studies for the semester.



#### **Poster Project:**

**CHM 554**: Teams of 2 students will pair together to complete a poster project. You must report your poster team by the date specified on the schedule. Afterwards, your team will be assigned a project and presentation date.

- The grade for your presentation will be calculated as an average grade from your peers (classmates). This grading format is intended to familiarize you with the concept of peer review. Each member of the team will be assigned the same grade. See accompanying documents on BlackBoard for the details on preparing your poster!
- Dr. Fichter will grade <u>evaluations forms</u> used by classmates to review posters. Download copies of this form from blackboard and bring them with you to the presentations. Evaluations from each session will be worth 10 points total, regardless of the number of posters evaluated that session. You must <u>demonstrate that you participated in a conversation</u> with poster authors to receive all points on your evaluation forms!

Poster presentations will take place in the 4th floor hallway of Temple near the elevator. Your poster will be displayed publically for at least one week.

**CHM 654**: Students enrolled in CHM 654 will complete a poster individually on a research topic that is relevant to the course. Topics must be approved by the instructor, and the student must use at least 5 peer-reviewed journal articles in the poster. Other guidelines follow those as stated for CHM 554 posters.

Quizzes: Five short quizzes, worth 25 points each, will be given throughout the semester, worth a total of 125 points. Some quizzes are scheduled (see the schedule below for the *tentative* schedule for quizzes) and the rest are unannounced. You must be present in class to take a quiz. If you are late to class you will not get any additional time to take the quiz. Quizzes may not be re-taken if you are absent from class; you will simply be assigned a 0. These quizzes are designed to be fairly easy if you attend class regularly and keep up with the reading assignments.

**Research Articles:** One current research article will be assigned for you to read and homework will be given for you to turn in the day of the discussion. Research article homework should be typed and printed (do not email)! This is designed to familiarize yourself with current biochemical research and the language of research scientists. Homework not turned in on, or before, the due date will be assigned a 0.

Late Assignments: The tentative schedule for assignment due dates is noted on the schedule below and will be updated in class as necessary. Assignments which are late will not be graded and receive a score of 0.

**Attendance:** Regular attendance and active participation during lecture is strongly encouraged. Attendance will not be checked on a regular basis per se, but absences will undoubtedly diminish your performance. It is your responsibility to obtain any and all information missed due to an absence from a fellow class member.

Make-up Exams: No make-up exams will be given. If a single interim exam is missed due to an excused absence, the score of your other 2 exams will be averaged to generate a score for your missed exam. Unfortunately, any other missed exams will receive a zero grade.

Academic Dishonesty: I consider plagiarism/cheating/dishonesty to be extreme offenses and these will be dealt with in a very serious manner. Sanctions may include a grade of 0 on any graded material, a formal report filed in your academic record and/or a grade of XF (failure due to academic dishonesty). You must sign the academic dishonesty contract before participating in any class activities.

Missouri State University is a community of scholars committed to developing educated persons who accept the responsibility to practice personal and academic integrity. You are responsible for knowing and following the university's student honor code, Student Academic Integrity Policies and Procedures (found at http://www.missouristate.edu/policy/Op3\_01\_AcademicIntegrityStudents.htm) and also available at the Reserves Desk in Meyer Library. Any student participating in any form of academic dishonesty will be subject

to sanctions as described in this policy.



Nondiscrimination: Missouri State University is an equal opportunity/affirmative action institution, and maintains a grievance procedure available to any person who believes he or she has been discriminated against. At all times, it is your right to address inquiries or concerns about possible discrimination to the Office for Institutional Equity and Compliance, Park Central Office Building, 117 Park Central Square, Suite 111, (417) 836-4252. Other types of concerns (i.e., concerns of an academic nature) should be discussed directly with your instructor and can also be brought to the attention of your instructor's Department Head. Please visit the OED website at www.missouristate.edu/equity/.

**Disability Accommodation:** To request academic accommodations for a disability, contact the Director of the Disability Resource Center, Plaster Student Union, Suite 405, (417) 836-4192 or (417) 836-6792 (TTY), www.missouristate.edu/disability. Students are required to provide documentation of disability to the Disability Resource Center prior to receiving accommodations. The Disability Resource Center refers some types of accommodation requests to the Learning Diagnostic Clinic, which also provides diagnostic testing for learning and psychological disabilities. For information about testing, contact the Director of the Learning Diagnostic Clinic, (417) 836-4787, http://psychology.missouristate.edu/ldc.

Cell Phone Policy: As a member of the learning community, each student has a responsibility to other students who are members of the community. When cell phones or pagers ring and students respond in class or leave class to respond, it disrupts the class. Therefore, the Office of the Provost prohibits the use by students of cell phones, pagers, PDAs, or similar communication devices during scheduled classes. All such devices must be turned off or put in a silent (vibrate) mode and ordinarily should not be taken out during class. Given the fact that these same communication devices are an integral part of the University's emergency notification system, an exception to this policy would occur when numerous devices activate simultaneously. When this occurs, students may consult their devices to determine if a university emergency exists. If that is not the case, the devices should be immediately returned to silent mode and put away. Other exceptions to this policy may be granted at the discretion of the instructor.

**Dropping a Class:** It is your responsibility to understand the University's procedure for dropping a class. If you stop attending this class but do not follow proper procedure for dropping the class, you will receive a failing grade and will also be financially obligated to pay for the class. For information about dropping a class or withdrawing from the university, contact the Office of the Registrar at 836-5520.

Audio and Video Recording of Course Activity: Students <u>are not</u> permitted to make audio or video recordings of course activity.

#### **Emergency Response Statement:**

At the first class meeting, students should become familiar with a basic emergency response plan through a dialogue with the instructor that includes a review and awareness of exits specific to the classroom and the location of evacuation centers for the building. All instructors are provided this information specific to their classroom and/or lab assignments in an e-mail prior to the beginning of the fall semester from the Office of the Provost and Safety and Transportation. Students with disabilities impacting mobility should discuss the approved accommodations for emergency situations and additional options when applicable with the instructor. For more information, go to http://www.missouristate.edu/safetran/51597.htm and http://www.missouristate.edu/safetran/erp.htm.

#### Shelter Information, Temple Hall

• Evacuate fourth floor.

Basement lecture areas or lower level interior labs and classrooms.

#### **Evacuation Information; Temple Hall:**

• North to Meyer Library; (Alternate: Northwest to Glass Hall and West to Kemper Hall. Destination will be determined by type of emergency and weather condition.)



# **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - New Course Proposal Form

New Cours	se Propo	sal Form				
Submitted on 03	/02/2017 by (	Schick ( <u>AlanS</u>	chick@Missour	<u>iState.edu)</u> .		
All fields require inpu	it	,			annadas ka mad ***** III ka *** III ka *** III ka III ka III ka II ka III ka III ka III ka III ka III ka III ka	
New COURSE	•					
New REGULAR P	PERMANENT SECTIC	N of an existing variabl	le content course. If a ne	ew regular section of	an existing variable topics course, e	nter the existing course number
Course Code:			Course Number: (Che	ck Availability)		
Course Title: Biochemistry Leborat	ory.I					
Will this proposal need to I	be reviewed by CGE	P? - ® No ○ Yes				
Will this proposal need to I	be reviewed by EPPC	? ® No □ Yes				
Prerequisite/Co-requisite of CHM 554 or CHM 654	The production of the second	collment.				
General Course Description A series of multidimer writing, and the bioch CHM 555. Cannot rece	nsional biochemics emical techniques	I experiments desig used to Isolate and	ned to explore the b study blomolecules.	ochemical literatu		, etc.)
Credit Hours:	2	Lecture Contact	Hours:	O	Lab Contact Hours:	4
Note: If variable credit, ent	ter the highest numb	er and add to end of co	urse description. (e.g. *\	/arlable credit, may b	oe taken 1-3 hours.")	
eriodicity. Check all th	at apply,					
⊠ Fall		Fall (even-numbered ye	ears only)	£	Fall (odd-numbered years	only)

	Spring	D	Spring (even-numbered years only)		Spring (odd-numbered yea	s anly)
	Summer .	Ø	On Demand only		,	
			•			
CHM 65 Prerequ A series study bi Credit h	to Catalog Descript 55 Biochemistry Labo isite: CHM 554 or CH of multidimensional omolecules. May be ours: 2 Lecture contr y offered: Fall, On De	ratory I IM 654 or conc biochemical ex taught concurr act hours: O Lal	periments designed to explore the biochemic antly with CHM 555. Cannot receive credit for	al literature, scientific report both CHM 555 and CHM 65	t writing, and the biochemical techn 55.	iques used to isolate and
nclude :		topics, course (	ioals.) Use text box OR upload only file types	of PDF, DOC or DOCX.	Atteched	
The sp bloche access	mistry sequence	(both lecture ly the second	to give interested graduate students a and lab) if they have not previously tak -semester content, but it is common at evel.	en blochemistry. Currer	ntly, graduate-level	
No oth	ship to Other Depart er department off ily Biology and/or	ers this cour	ie. We expect very few students from a Sciences.	ther departments, but i	Els possible —	
Is there a	Enter para	llel course num	ourse to this one? O No ® Yes ber y Laboratory (			
	Note: C special p presente	project, for wi ed in class, wi	ng changed to CHM 655. Differences to lich CHM 654 students are assigned a l th emphasis on experimental design an	aboratory method to be	researched and	(((전) 전 ((전) 전 ((전) 전 (전) 전 (전) 전 (전) 전 (전)
New Cou	rse Resource in	formation				
Anticipate	ed Average Enrollme	nt per section;	2	Maximum Enrollment L	imit per section:	6
Anticipate	ed Average Enrollme	nt per semeste		Maximum Enrollment L	imit per semester:	6
Anticipate	ed Average Enrollme	nt per year:	2	Maximum Enrollment L	imit per year:	6
Faculty Lo	oad Assignment (equ	uated hours):				
ls another	course being delete	d? ® No ○ :	/es			



#### What will this course require in the way of:

Additional library Holdings
None.
Additional computer resources
none.
Additional or remodeled facilities
none.
Additional equipment or supplies
none.
Additional travel funds
none.
Additional faculty; general vs specialized
note:
Additional faculty; regular vs per-course
none.
Other additional expenses
- none.

If additional faculty are not required, how will faculty be made available to teach this course?

The workload for this course will be integrated into that for the (existing) undergraduate parallel course.

List names of current faculty qualified and available to teach this course

Cuebas

Fichter

Yoshimatsu

What is the anticipated source of students for this course?

Chemistry graduate students who are interested in a biochemistry emphasis but who have not taken an equivalent course as an undergraduate.

If from within the department, will students be taking this course in addition to or in place of other courses?

In place of other courses.

If from outside the department, which courses in other departments would most likely be affected?)

We expect very few students from other departments (primarily Biology and/or Biomolecular Sciences) to enroll in this course, but it is possible. They are more like to enroll in the lecture course (CHM 654) without taking this corresponding lab course.

Other comments:

none.

What is the date that this new course was approved by departmental or program faculty? (MM/DD/YYYY)

09/20/2016

#### **Current Status:**

**Grad Council Review** 

#### **Proposal Progress:**

03/03/2017 - Submitted by Department Head (Bryan Breyfogle) 03/07/2017 - Reviewed by Dean (Tamera Jahnke)

#### **Review Comments:**

No comments have been added to this proposal.



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## **Curricular Action Workflow**



Missouri State > Computer Services - MiS > Curricular Action Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Submitted on 03/31/2017 by Kevin	Mickus ( <u>Kevinmickus@mis</u>	souristate.edu).	
Department:			
Geography, Geology, & Planning			
Type of Program Choose One:	· .		
Major (Non-Comprehensive/Graduate	O Minor	○ Academic Rules	
Program)	○ Certificate	○ Other	·
O Comprehensive Major	○ Certification		
் Option			
Title of Program Affected:			
Geology-BS-Minor Required			
Current Catalog Description: (Either cut and pa	eta arecent deparintian from aplina esta	log OP provide as an ettashment helpu)	
current catalog pescriptions (citiel cut and pa	ste present description from online cate	Attached	
Complete New Catalog Description: (Either pr	ovide the revised description in the text	area below [strikethrough all deletions and insert/bold new info	ormation - anv
content that is copied and pasted will lose existing for			,
* * B / S			
Attached	***	·	1
What is changing? Check all boxes that appl	ly:		
□ Title change	☐ From option to program (r	najor)	

☐ Course changes of under 18 hours	☐ From program (major) to option	
□ Course changes of 18 hours or more		C Other <u>English (Line State</u> )
Reason for Proposed Change:		
We are reducing the total credits required for	the degree program and streamlining the requireme	hts, based on input:
from faculty, students, and comparison to proc		
		ndering and their year ( <u>Monator datas and Annator</u>
What is the date that this new program wa	as approved by departmental or program facu	ity? (MM/DD/YYYY)
03/06/2017		
Current Status:		
College Council Review		
Proposal Progress:		
03/31/2017 - Submitted by Department Head	d (Toby Dogwiler)	
Review Comments:		
03/31/2017 - Department Head Review - Tob	y Dogwiler - The proposed changes will make na	avigating our major requirements simpler for our students
and increases our staffing flexibility.		
		·



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## **Geology (Non-Comprehensive)**

### Bachelor of Science

- A. General Education Requirements see <u>General Education Program and Requirements</u> section of catalog
- B. Major Requirements (49-54 hours)
  - 1. <u>GLG 110(4)</u> or both <u>GLG 171(3)</u> and <u>GLG 172(1)</u>; <u>GLG 314(4)</u>, <u>332(4)</u>, <u>333(3)</u>, <u>334(3)</u>, <u>340(4)</u>, <u>358(3)</u>, <u>570(3)</u>
  - 2. GLG 412(4) or 413(6) or equivalent Field Geology course
  - 3. <u>CHM 160</u>(4)
  - 4. MTH 138(5) or 181(3)
  - 5. GRY 363(4)
  - 6. Complete 6 hours selected from:
    - A. <u>CHM 161(1)</u>, <u>170(3)</u>, <u>171(1)</u>
    - B. GLG courses numbered 318 or higher, but not to include more than 4 hours of GLG 360
    - C. <u>GRY 348</u>(3)
  - 7. Public Affairs Capstone Experience will be fulfilled by completion of <u>GLG 358(3)</u>.
- C. Minor Required (or second major). Geology majors wishing to emphasize paleontology should minor in biology.
- D. General Baccalaureate Degree Requirements see <u>General Baccalaureate Degree</u> <u>Requirements</u> section of catalog



## **Geology (Non-Comprehensive)**

#### **Bachelor of Science**

- A. General Education Requirements see <u>General Education Program and Requirements</u> section of catalog
- B. Major Requirements (49-54 45 hours)
  - 1. <u>GLG 110(4)</u> or both <u>GLG 171(3)</u> and <u>GLG 172(1)</u>; <u>GLG 314(-4-3)</u>, <u>332(4-3)</u>, <u>333(3)</u>, <u>334(3)</u>, <u>340(4)</u>, <u>358(3)</u>, <u>570(3)</u>
  - 2. GLG 412(4) or 413(4-6) or equivalent Field Geology course
  - 3. Complete 3 hours from GLG courses numbered 318 or higher
  - 4. Complete 3 hours from GLG courses numbered 400 or higher
  - 5. CHM 160(4), 161(1)
  - 6. MTH 138(5), or 181(3), or 287(3)
  - 7. GRY 363(4)
  - 8. Complete 6 hours selected from:
    - A. CHM 161(1), 170(3), 171(1)
    - B. GLG courses numbered 318 or higher, but not to include more than 4 hours of GLG 360
    - C. <u>GRY 348(3)</u>
  - 9. Public Affairs Capstone Experience will be fulfilled by completion of GLG 358(3).
- C. Minor Required (or second major). Geology majors wishing to emphasize paleontology should minor in biology.
- D. General Baccalaureate Degree Requirements see <u>General Baccalaureate Degree</u> Requirements section of catalog

## **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Program Proposal Form

## **Change Program Proposal Form**

Submitted on 03/31/2017 by Kevin	Mickus ( <u>Kevinmickus@mis</u>	souristate.edu).	•
Department:			
Geography, Geology, & Planning			
Type of Program			
Choose One:			
Major (Non-Comprehensive/Graduate	O Minor	ি Academic Rules	i
Program)	ි Certificate	ਂ Other	
® Comprehensive Major	<ul> <li>Certification</li> </ul>		
Option			
Title of Program Affected:	·		
Geology-BS			
7,7,7	. 47		ATTAC INTERIOR
Current Catalog Description: (Either cut and pa	aste present description from online cata	alog <b>OR</b> provide as an attachment below)	
		Attach	ned
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Complete New Catalog Description: (Either procontent that is copied and pasted will lose existing for			ert/bold new information - any
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Attached			
What is changing? Check all boxes that app	ly:		
□ Title change	☐ From option to program (	major) 🗆 Other	



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# (15)

## Geology (Comprehensive)

**Bachelor of Science** 

This degree program is designed for those who wish to seek admission to graduate school in geology or related fields.

- A. General Education Requirements see <u>General Education Program and Requirements</u> section of catalog
- B. Major Requirements (79-87 hours)
  - 1. <u>GLG 110(4)</u> or both <u>GLG 171(3)</u> and <u>GLG 172(1)</u>; <u>GLG 314(4)</u>, <u>332(4)</u>, <u>333(3)</u>, <u>334(3)</u>, <u>340(4)</u>, <u>358(3)</u>, <u>412(4)</u>, <u>413(6)</u> or equivalent Field Geology course, <u>570(3)</u>
  - 2. GLG 415(4) or 580(3) or GRY 348(3)
  - 3. GLG 572(3) or 573(3) or 590(3)
  - 4. Select a minimum of 8 additional hours of GLG courses numbered 318 or higher, but not to include more than 4 hours of GLG 360
  - 5. Related Requirements (27-33 hours): <u>GRY 363(4); CHM</u>
    <u>160(4), 161(1), 170(3), 171(1); MTH 261(5)</u> or <u>287(3); MTH 280(5)</u> or <u>288(3); PHY 123(4)</u>
    and 124(4), or PHY 203(5) and 204(5)
  - 6. Public Affairs Capstone Experience will be fulfilled by completion of GLG 358(3).
- C. General Baccalaureate Degree Requirements see <u>General Baccalaureate Degree</u> <u>Requirements</u> section of catalog

# (15)

## Geology (Comprehensive)

**Bachelor of Science** 

This degree program is designed for those who wish to seek admission to graduate school in geology or related fields.

- A. General Education Requirements see <u>General Education Program and Requirements</u> section of catalog
- B. Major Requirements (79-87 65-69 hours)
  - GLG 110(4) or both GLG 171(3) and GLG 172(1); GLG 314(-4-3), 332(-4-3), 333(3), 334(3), 340(4), 358(3), 412(4), 413(6) or equivalent Field Geology course, 570(3)
  - 2. GLG 415(4) or 580(3) or GRY 348(3)
  - 3. GLG 572(3) or 573(3) or 590(3)
  - 4. Complete 6 hours from GLG 412 or GLG 413. Field courses transferred from another university must be pre-approved by the Geology faculty.
  - 5. Select a minimum of 8 10 additional hours of GLG courses numbered 318 or higher, with at least 6 of these hours from GLG courses number 400 or higher. but not to include more than 4 hours of GLG 360
  - 6. Related Requirements (27-33 hours): <u>GRY 363(4); CHM</u>
    160(4), 161(1), 170(3), 171(1); <u>MTH 261(5)</u> or 287(3); <u>MTH 280(5)</u> or 288(3); <u>PHY 123(4)</u>
    and 124(4), or PHY 203(5) and 204(5)
  - 7. GRY 363(4)
  - 8. CHM 160(4), 161(1), PHY 123(4) or 203(5), MTH 261(5) or 287(3)
  - 9. Complete 7 to 10 hours of courses from two of the following groups:
    - a. CHM 170(3) and CHM 171(1)
    - b. PHY 124(4) or 204(5)
    - c. MTH 280(5) or 288(3)
  - 10, Public Affairs Capstone Experience will be fulfilled by completion of GLG 358(3).
- C. General Baccalaureate Degree Requirements see <u>General Baccalaureate Degree</u> Requirements section of catalog

## **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposal Form

h	ang	ge (	jou	rse Pr	opos	al Form		<u></u>			
Sub	mitte	ed on	03/3	1/2017 by I	Cevin M	ickus ( <u>Kevinmickus@mis</u>	souristat	e.ed	<u>u)</u> .		
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		•	plies to								
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	ing Co 314 Hi		ıl Geolo	ugy .						in Mal	
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Vill th	is propo	sal nee	d to be	reviewed by EPP	C? 🖲 i	√lo <sup>©</sup> Yes					
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Prer.	enuieit	e GI C	110 or	hoth GI G 171	and GLG 1	72. Geological history of the earth	with empha	isis nn	North		
	Halling in S					life on earth. One Saturday field					
Revise	the cu	rrent or	iline cat	alog description	as needed:	Strikethrough all deletions and insert/bold ne	w information. A	iny cont	ent that is copied and pe	sted will lose ex	isting formatting; please review prio
subm	nission.)										er er i nige – ing i moga tida ka da da atadaman an
•	*	В	I	<del>S</del>				,,		**************************************	
GLG	314 H	istorica	al Geolo	99							
						172. Geological history of the earth	with empha	sis on	North America; ori	gin and evol	ution of animal and plant
life o	on eart	h. One	Saturd	ay field trip red	quired. <del>4(</del> 3	<del>-3)</del> 3(2-2) F					
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	Cou	rse Cod	e		口	Course Number (Check Availability)			Title		Prerequisite
<b>S</b>	Cred	lit Hour	s/Conta	ct Hours		Periodicity			Description		
ili											

03/06/2017

Reason	for proposed change				
We a	e reducing the contact hours in this course as part of a larger revision to the Geol	ogy Comprel	nensive and		
Non-	Comprehensive degree requirements. We are trying to reduce our Geology require	ements to be	in line with peer		
progr	ams at other institutions and streamline the pathway to graduation for our majors	. The course	e outline and		٠,
topic	s covered will remain the same, but the lectures and lab exercises will be more cor	icise.			
Ar. 14 Nova 1970		120-7	THE STREET CONTRACTOR OF THE STREET S		
Does	this change affect course assessment (e.g. student learning evidence/outcomes)? ® No C	Yes			
How die	d you determine the need for this change? Check all boxes that apply or specify other.				
9	Routine or annual review/assessment of curriculum	8	Faculty Input	2	Student Input
	Accreditation/certification compliance	O	Review of catalog	information	
D	Other (be specific):			in de 35.	The state of the s

**Current Status:** 

College Council Review

#### Proposal Progress:

03/31/2017 - Submitted by Department Head (Toby Dogwiler)

Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY)

### **Review Comments:**

No comments have been added to this proposal.





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# **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposal Form

Submitted on 03/31/2017 by Kevin Mickus ( <u>Kevinmickus@missourista</u>	ate.ed	<u>u)</u> .		
'All fields require input				
This proposal applies to:				
An existing COURSE				
An existing REGULAR (e.g. permanent) SECTION of a variable content course.		•		
xisting Course:				
ill this proposal need to be reviewed by CGEIP?   No Yes				
ill this proposal need to be reviewed by EPPC? 🦠 No 🗅 Yes				
urrent online catalog description:		s man ir državnička statova samoj	qua	
GLG 332 Mineralogy	gwien ANE	7 19 2	ille 1	
	120615.00			
Prerequisite: GLG 110 or both GLG 171 and GLG 172; and CHM 160; and MTH 135 or MTH 138	MANUAL COL	CR COMERCIAL LAND.		
Origin, classification, description, and identification of ore minerals and rock-forming mineral	s. 4(2-4	)F		
				•
avise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information submission.)	. Any cont	ent that is copied and pa	isted will lose exit	sting formatting; please review p
+ → B I S				
GLG 332 Mineralogy	· · · · · · · · · · · · · · · · · · ·	Washington and the second seco		
	MTU	261		
Prerequisite: GLG 110 or both GLG 171 and GLG 172; and CHM 160; and MTH 135 or MTH 138 dentification of ore minerals and rock-forming minerals. $4(2-4)$ 3(2-2) F	חוויונט	201 OF MIN 287. U	origin, classifi	cation, description, and
		THE STATE OF THE S	ALI Eddal	- Sana-in
			•	
hat is changing? Check all boxes that apply.				
Course Code Course Number (Check Availability)		Title	EJ.	Prerequisite
Cradit House/Contact House	rii.	Description		

Rea	son for proposed change			700000 200013		
1000	e are reducing the contact hours in this course as part of a larger revision to the Ge					
11.520	n-Comprehensive degree requirements. We are trying to reduce our Geology requ					
3300	ograms at other institutions and streamline the pathway to graduation for our majo vered will remain the same, but the lectures and lab exercises will be more concise.	is, inecours	e outilie and topic	<b>8</b> (32) (32)		
P96. 6		aretur Estado Mesor.	mmilitan il oszázábákaszakó n o dítágya	1100		
D	oes this change affect course assessment (e.g. student learning evidence/outcomes)? <sup>®</sup> No	ੌ Yes				
How	did you determine the need for this change? Check all boxes that apply or specify other,			,		
Ø	Routine or annual review/assessment of curriculum	<b>3</b> 3	Faculty Input	83	Student Input	
	Accreditation/certification compliance	D	Review of catalog	information		
	Other (be specific):					
Ø	Check if this is a non-substantive change.		•			
Wha	t is the date that this course change was approved by departmental or program faculty? (MM/E	D/YYYY)		03/06	(2017	
Curre	ent Status:					
Colleg	ge Council Review					
Propo	esal Progress:					
03/31,	/2017 - Submitted by Department Head (Toby Dogwiler)					
Revie	w Comments:					
No co	mments have been added to this proposal.					
			PUBLITURA PI addit and addition as assessment		,	,,,



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# **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Course Proposal Form

Change Course Proposal Form				
Submitted on 03/30/2017 by Kevin Mickus ( <u>Kevinmickus@missouri</u>	state.ec	<u>lu)</u> .		
*All fields require input	T TA ANGOLIA PARENTE TO THE TOTAL PROPERTY OF THE TATAL PARENTE TO THE T	ошин одон төйд Межи, атад Монго, атад төөсө асынкан.		# Alam Bill in delate Bij dight die vor propagie v valence mandate van belein 7/8
This proposal applies to:				
An existing REGULAR (e.g. permanent) SECTION of a variable content course.				
Existing Course:				
GLG794 Global Tectonics	13 13 13 13 13 13 13 13 13 13 13 13 13 1	po projek Zena		
Will this proposal need to be reviewed by CGEIP? • No • Yes			re re re ne re	
Will this proposal need to be reviewed by EPPC? ● No ○ Yes				
•				
Current online catalog description:	kudská skádu	iii satiirin maalka ka ka k	\$24	
GLG 794 Global Tectonics				
Recommended Prerequisite: GLG 314; The fundamental basis of plate tectonics. Topics comethods, plate motion theory, fundamental properties of plate boundaries, formation of seconogenic belts. 3(3-0) S  Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new informa	edimentary	basins and	ted will lose or	virting formatting, bloom success continue since
o submission.)	LIGHT ANY COMP	site that is copied and pas	ted will lose ex	nstring formatting; please review prior
◆				
GLG 794 Global Tectonics				
Recommended Prerequisite: GLG 314. The fundamental basis of plate tectonics. Topics cover properties of plate boundaries, formation of sedimentary basins and orogenic belts. 3(2-2 3-2)		geophysical method	ls, plate mo	otion theory, fundamental
	ner semmen Arr bronger ger Sam, von en	* o * shifte a manana a a a a a a a a a a a a a a a	NAS de marine de constante de la Residencia de la Residen	
What is changing? Check ail boxes that apply.		- ,		
☐ Course Code ☐ Course Number ( <u>Check Aveilability</u> )		Title		Prerequisite
☑ Credit Hours/Contact Hours 🗓 Periodicity	O	Description		

The	on for proposed change class needs in class time to perform labs including locating and analyzing e	arthquakes, creatin	g plate motion		
mar	os, doing paleomagnetic analyzes, isostatic analysis, analyzing isotopic data				
Do	es this change affect course assessment (e.g. student learning evidence/outcomes)? ®	No ○ Yes			
How	did you determine the need for this change? Check all boxes that apply or specify other.				
	Routine or annual review/assessment of curriculum		Faculty Input	M	Student Input
D	Accreditation/certification compliance		Review of catalog	information	
	Other (be specific):				
Ø	Check if this is a non-substantive change.				
What i	is the date that this course change was approved by departmental or program faculty? (	(MM/DD/YYYY)		03/06/2	2017
Curren	nt Status:				
Pean R	eview	,			
ropos	al Progress:				÷
3/31/2	2017 - Submitted by Department Head (Toby Dogwiler)				
leview	Comments:				
	2017 - Department Head Review - Toby Dogwiler - Dr. Mickus is updatin on nature of his pedagogical approach and the nature of the topic being		r distribution on th	nis course to	o better reflect the
		The state of the s		The state of the s	,



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## **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Submitted on 03/31/2017 by Rebec	ca Baker ( <u>Beckybaker@mi</u> s	souristate.edu).
Department:	and the state of t	
Physics, Astronomy, & Mat Sci		
Type of Program Choose One:		
O Major (Non-Comprehensive/Graduate	O Minor	্ Academic Rules
Program)	ි Certificate	ं Other
Comprehensive Major	் Certification	
ं Option	- Certification	
		•
Fitle of Program Affected:	EXEXECTION OF THE ENGINEER CONTROL	TANKE (S. C.
Physics/Astronomy and Astrophysics-BS		
Current Catalog Description: (Either cut and pa	aste present description from online cata	log <b>OR</b> provide as an attachment below)
		Attached
Complete New Catalog Description: /Sither p	royide the revised description is the toyot	area below [strikethrough all deletions and insert/bold new information - any
ontent that is copied and pasted will lose existing for		
* * B / S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
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	·	
Attached		
Yhat is changing? Check all boxes that app	ly:	
□ Title change	☐ From option to program (r	najor)

☐ Course changes of under 18 hours	☐ From program (major) to option	□ Other
☐ Course changes of 18 hours or more		SUNTERSON SECTION OF THE SECTION OF
Reason for Proposed Change:		
Adding PHY 324(3) to the Physics Core of Courses		
What is the date that this new program was a	pproved by departmental or program faculty? (N	IM/DD/YYYY)
03/31/2017		
Current Status:	·	
College Council Review		
Proposal Progress:		
03/31/2017 - Submitted by Department Head (Da	avid Cornelison)	
Review Comments:		
No comments have been added to this proposal.		



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## **Current Catalog Description**

**Physics** 

Major(s)

Physics (Comprehensive)

Bachelor of Science

A General Education Requirements - see <u>General Education Program and Requirements</u> section of catalog

Specific General Education Requirements: PHY 203(5), MTH 261(5), ENG 321(3)

- B Major Requirements
- 1. PHY 152(3), 204(5), 291(3), 333(3), 343(3), 353(3), 375(3), 385(2), 386(1), 391(3), 486(1)
- 2. Public Affairs Capstone Experience will be fulfilled by completion of <u>PHY 385(2)</u>, <u>386(1)</u> and <u>486(1)</u>.
- 3. Select one of the following option areas:
- a. Astronomy and Astrophysics: <u>AST 113(3), 114(4)</u> or <u>115(4)</u>; and select two courses from: <u>AST 311(3), 313(3), 315(3), 317(3)</u>
- b. Engineering and Applied Physics: PHY 220(4), 324(4), 351(3)
- c. Materials Physics: MAT 540(3), 550(3), 580(3); PHY 575(3)
- d. Graduate Prep Physics: MAT 580(3); PHY 351(3), 476(3), 575(3)
- 4. Related Requirements: <u>MTH 280(5)</u>, <u>302(3)</u>, <u>303(3)</u>

### Complete New Catalog Description

**Physics** 

Major(s)

Physics (Comprehensive)

Bachelor of Science

A General Education Requirements - see <u>General Education Program and Requirements</u> section of catalog

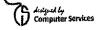
Specific General Education Requirements: PHY 203(5), MTH 261(5), ENG 321(3)

- B Major Requirements
- 1. PHY 152(3), 204(5), 291(3), 324(3), 333(3), 343(3), 353(3), 375(3), 385(2), 386(1), 391(3), 486(1)
- 2. Public Affairs Capstone Experience will be fulfilled by completion of <u>PHY 385(2)</u>, <u>386(1)</u> and <u>486(1)</u>.
- 3. Select one of the following option areas:
- a. Astronomy and Astrophysics: <u>AST 113(3)</u>, <u>114(4)</u> or <u>115(4)</u>; and select two courses from: <u>AST 311(3)</u>, <u>313(3)</u>, <u>315(3)</u>, <u>317(3)</u>
- b. Engineering and Applied Physics: PHY 220(4), 324(4), 351(3)
- c. Materials Physics: <u>MAT 540(3)</u>, <u>550(3)</u>, <u>580(3)</u>; <u>PHY 575(3)</u>
- d. Graduate Prep Physics: MAT 580(3); PHY 351(3), 476(3), 575(3)
- 4. Related Requirements: MTH 280(5), 302(3), 303(3)

C General Baccalaureate Degree Requirements - see <u>General Baccalaureate Degree Requirements</u> section of catalog

## **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Submitted on 03/31/2017 by Rebec	ca Baker ( <u>Beckybaker@mis</u>	ssouristate.edu).
Department:		
Physics, Astronomy, & Mat Sci		
Type of Program Choose One:		
Major (Non-Comprehensive/Graduate	ਂ Minor	Academic Rules
Program)	○ Certificate	Other
Comprehensive Major	<ul> <li>Certification</li> </ul>	• .
O Option		
Title of Program Affected:		
Physics/Engineering and Applied Physics-BS  Current Catalog Description: (Either cut and page 1)	aste present description from online cata	alog <b>OR</b> provide as an attachment below)
		Attached
Complete New Catalog Description: (Either p		t area below [strikethrough all deletions and insert/bold new information - any on] <b>OR</b> provide as an attachment below)
+ + B I \$		
Attached		
What is changing? Check all boxes that app	ly:	
☐ Title change	☐ From option to program (	major)

☑ Course changes of under 18 hours	☐ From program (major) to option	Delets Option Delets Option
☐ Course changes of 18 hours or more		One (Signification of the Control of
		•
Reason for Proposed Change:		
low interest in option from students		
What is the date that this new program was a	pproved by departmental or program faculty? (M	M/DD/YYYY)
03/31/2017		

#### **Current Status:**

College Council Review

#### Proposal Progress:

03/31/2017 - Submitted by Department Head (David Cornelison)

#### **Review Comments:**

No comments have been added to this proposal.





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# (20)

### **Current Catalog Description**

**Physics** 

Major(s)

Physics (Comprehensive)

Bachelor of Science

A General Education Requirements - see <u>General Education Program and Requirements</u> section of catalog

Specific General Education Requirements: PHY 203(5), MTH 261(5), ENG 321(3)

- B Major Requirements
- 1. PHY 152(3), 204(5), 291(3), 333(3), 343(3), 353(3), 375(3), 385(2), 386(1), 391(3), 486(1)
- 2. Public Affairs Capstone Experience will be fulfilled by completion of <u>PHY 385(2)</u>, <u>386(1)</u> and <u>486(1)</u>.
- 3. Select one of the following option areas:
- a. Astronomy and Astrophysics: <u>AST 113(3)</u>, <u>114(4)</u> or <u>115(4)</u>; and select two courses from: <u>AST 311(3)</u>, <u>313(3)</u>, <u>315(3)</u>, <u>317(3)</u>
- b. Engineering and Applied Physics: PHY 220(4), 324(4), 351(3)
- c. Materials Physics: <u>MAT 540(3)</u>, <u>550(3)</u>, <u>580(3)</u>; <u>PHY 575(3)</u>
- d. Graduate Prep Physics: MAT 580(3); PHY 351(3), 476(3), 575(3)
- 4. Related Requirements: MTH 280(5), 302(3), 303(3)

C General Baccalaureate Degree Requirements - see <u>General Baccalaureate Degree Requirements</u> section of catalog

## Complete New Catalog Description



**Physics** 

Major(s)

Physics (Comprehensive)

Bachelor of Science

A General Education Requirements - see <u>General Education Program and Requirements</u> section of catalog

Specific General Education Requirements: PHY 203(5), MTH 261(5), ENG 321(3)

- B Major Requirements
- 1. PHY 152(3), 204(5), 291(3), 324(3), 333(3), 343(3), 353(3), 375(3), 385(2), 386(1), 391(3), 486(1)
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- b. Engineering and Applied Physics: PHY 220(4), 324(4), 351(3)
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- d. Graduate Prep Physics: MAT 580(3); PHY 351(3), 476(3), 575(3)
- 4. Related Requirements: MTH 280(5), 302(3), 303(3)

C General Baccalaureate Degree Requirements - see <u>General Baccalaureate Degree Requirements</u> section of catalog

## **Curricular Action Workflow**



Computer Services

Missouri State > Computer Services - MiS > Curricular Action
Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Submitted on 03/31/2017 by Rebec	ca Baker ( <u>Beckybaker@mis</u>	souristate.edu).	and the second s
Department:	The Probability of Auditoria		
Physics, Astronomy, & Mat Scr			
Type of Program Choose One:			
Major (Non-Comprehensive/Graduate	O Minor	○ Academic Rules	
Program)	○ Certificate	Other	
© Comprehensive Major .	<ul> <li>Certification</li> </ul>		
Option .	·		
Title of Program Affected:			
			45141
Physics/Materials Physics-BS			1000
Outside the Benedication (Till			
Current Catalog Description: (Either cut and pa	aste present description from online cata	og Ok provide as an attachment below)  Attached	
Complete New Catalog Description: (Either procontent that is copied and pasted will lose existing for		area below [strikethrough all deletions and insert/bold new information - any	
• → B I S			
	v		
Attached	•	•	
What is changing? Check all boxes that app	oly:		
☐ Title change	From option to program (r	najor)	

© Course changes of under 18 hours © From program (major) to option
□ Course changes of 18 hours or more
Reason for Proposed Change:
Added PHY 324(3) to Physics Core of courses.
What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)
03/31/2017
Current Status:
College Council Review
Proposal Progress:
03/31/2017 - Submitted by Department Head (David Cornelison)
Review Comments:
No comments have been added to this proposal.



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# (21)

## **Current Catalog Description**

**Physics** 

Major(s)

Physics (Comprehensive)

**Bachelor of Science** 

A General Education Requirements - see <u>General Education Program and Requirements</u> section of catalog

Specific General Education Requirements: PHY 203(5), MTH 261(5), ENG 321(3)

- **B** Major Requirements
- 1. PHY 152(3), 204(5), 291(3), 333(3), 343(3), 353(3), 375(3), 385(2), 386(1), 391(3), 486(1)
- 2. Public Affairs Capstone Experience will be fulfilled by completion of <u>PHY 385(2)</u>, <u>386(1)</u> and <u>486(1)</u>.
- 3. Select one of the following option areas:
- a. Astronomy and Astrophysics: <u>AST 113(3)</u>, <u>114(4)</u> or <u>115(4)</u>; and select two courses from: <u>AST 311(3)</u>, <u>313(3)</u>, <u>315(3)</u>, <u>317(3)</u>
- b. Engineering and Applied Physics: <u>PHY 220(4)</u>, <u>324(4)</u>, <u>351(3)</u>
- c. Materials Physics: MAT 540(3), 550(3), 580(3); PHY 575(3)
- d. Graduate Prep Physics: MAT 580(3); PHY 351(3), 476(3), 575(3)
- 4. Related Requirements: MTH 280(5), 302(3), 303(3)

C General Baccalaureate Degree Requirements - see <u>General Baccalaureate Degree Requirements</u> section of catalog

## Complete New Catalog Description



**Physics** 

Major(s)

Physics (Comprehensive)

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## **Curricular Action Workflow**



Missouri State > Computer Services - MiS > Curricular Action Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Submitted on 03/31/2017 by Rebecca Baker ( <u>Beckybaker@missouristate.edu)</u> .				
Department:			and the sport open to be provided in the state of the sta	
Physics, Astronomy, & Mat Sci				
Type of Program Choose One:				
Major (Non-Comprehensive/Graduate	O Minor	ା Academic Rules		
Program)	் Certificate	ं Other	•	
® Comprehensive Major	○ Certification			
Option				
Fitle of Program Affected:				
Physics/Graduate Prep Physics:BS				
		a <b>An</b> acas da anticolor de la constanta de la		
Current Catalog Description: (Either cut and p	aste present description from online catalo			
		Attached		
Complete New Catalog Description: (Either p			l new information - any	
content that is copied and pasted will lose existing for	rmatting; please review prior to submission	J UK provide as an attachment below)		
♦ B / S				
Attached				
What is changing? Check all boxes that app	oly:			
☑ Title change	☐ From option to program (ma	ajor) 🗆 Other		

83	Course	change	of unde	r 18 hours
	COUISE	ullaliuca	or unue	R ID HUUUS

From program (major) to option

	Course changes of 18 hours	or	more
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#### Reason for Proposed Change:

Changed to better address the needs of the department's students.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

03/31/2017

#### **Current Status:**

College Council Review

#### Proposal Progress:

03/31/2017 - Submitted by Department Head (David Cornelison)

#### **Review Comments:**

No comments have been added to this proposal.





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# **Current Catalog Description**



Physics

Major(s)

Physics (Comprehensive)

Bachelor of Science

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- b. Engineering and Applied Physics: PHY 220(4), 324(4), 351(3)
- c. Materials Physics: <u>MAT 540(3)</u>, <u>550(3)</u>, <u>580(3)</u>; <u>PHY 575(3)</u>
- d. Graduate Prep Physics: MAT 580(3); PHY 351(3), 476(3), 575(3)
- 4. Related Requirements: <u>MTH 280(5)</u>, <u>302(3)</u>, <u>303(3)</u>

C General Baccalaureate Degree Requirements - see <u>General Baccalaureate Degree Requirements</u> section of catalog

# Complete New Catalog Description



**Physics** 

Major(s)

Physics (Comprehensive)

Bachelor of Science

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Specific General Education Requirements: PHY 203(5), MTH 261(5), ENG 321(3)

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- b. Engineering and Applied Physics: PHY 220(4), 324(4), 351(3)
- c. Materials Physics: MAT 540(3), 550(3), 580(3); PHY 575(3)
- d. Graduate Career Prep Physics: MAT 580(3); PHY 351(3), 476(3), 575(3) PHY 351(3) and one of either PHY 575(3) or MAT 540(3) and three hours of 400 or 500 level PHY, MAT or CHM coursework

- 4. Related Requirements: MTH 280(5), 302(3), 303(3)
- C General Baccalaureate Degree Requirements see <u>General Baccalaureate Degree Requirements</u> section of catalog

Department:

# **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action
Workflow > CAW - New Program Proposal Form

# **New Program Proposal Form**

## Submitted on 03/31/2017 by Rebecca Baker (Beckybaker@missouristate.edu).

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 Institutional Research. 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.

Physics, Astronomy, & Mat Sci			
Proposed Program Title:			
BS in Physics, Teaching Prep Physics Option			
Choose One:			
Major (Non-Comprehensive/Graduate	O Minor	ି Academic Rules	
Program)	ं Certificate	ි Other	
O Comprehensive Major	○ Certification		
Option			
Select Degree Type (or Select Graduate Cert	ificate or Undergraduate Certi	ficate):	719710
BS - Bachelor of Science			
General Education Courses Required:		·	
PHY 203(5), MTH 261(5), ENG 321(3)			
		Total Hours: 13	

**General Education Courses Recommended:** 

GRY 106(3)	
	Total Hours: 3
Requirements (including Admission) and Limitations for Specific Degree/Program:	
No additional requirements other than those required by MSU.	
	Total Hours: 0
Courses Required in Department:	
1. Core PHY 152(3), 204(5), 291(3), 324(3), 333(3), 343(3), 353(3), 375(3), 386(2), 386(1), 391(3), 486(1).	
2. Option: AST 115 (4) and at least six credit hours from any 300 or 400 level courses from AST, MAT or PHY excluding PHY 501	75 F
	Total Hours: 43
Courses Required in Other Departments:	
1. Releted Requirements: MTH 280(5), 302(3), 303(3)	
	Total Hours: 11
Prerequisites for Required Courses:	
CSC 125(3); MTH 181(3), 261(5), 280(5), 302(3), 303(3);	
Parameter de d'Eleviere la Description	
Recommended Electives in Department:	#####################################
Any course within the Department of Physics, Astronomy and Materials Science or Department of Chemistry.	Total Hours: 6
	Total Hours. Of the second sec
Recommended Electives in Other Departments:	ind new work
None	
	Total Hours: 0
Limitations on Electives:	
ΡΗΥ εσίτα)	
Please attach the following documents: (only one file may be attached for each requirement; accepts file to	ypes of PDF, DOC or DOCX)
1. Statement of Rationale: Attached	
2. Estimated costs for first five years: Attached	
3. Complete catalog description (including new courses and course changes pending approval): Attached	
4. CBHE Application (If applicable): Not Attached	
*Note: For new programs requiring CBHE approval, CBHE forms NP, PS, and PG will satisfy #1 and CBHE for	orm FP will satisfy #2,
What is the date that this new program was approved by departmental or program faculty? (MM/DD	/YYYY)

03/31/2017

#### **Current Status:**

College Council Review

#### **Proposal Progress:**

03/31/2017 - Submitted by Department Head (David Cornelison)

#### **Review Comments:**

No comments have been added to this proposal.



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(23)

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Statement of Rationale for BS in Physics: Teaching Prep Physics Option

After much discussion within the department, it was felt that students wishing to become secondary science teachers would be better served with a BS degree in physics in terms of content knowledge and opportunities available to them if they choose to not stay in the teaching field. It is highly recommended that the student plan this program in consultation with their advisor. The Teaching Prep Physics Option does not include courses in teacher education that are required for Certification by the state of Missouri. They can be met through a post-baccalaureate program or masters programs at Missouri State University such as the MAT or MNAS program.



There are no new costs for this program.

# Complete New Catalog Description



**Physics** 

Major(s)

Physics (Comprehensive)

**Bachelor of Science** 

A General Education Requirements - see <u>General Education Program and Requirements</u> section of catalog

Specific General Education Requirements: PHY 203(5), MTH 261(5), ENG 321(3)

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- b. Engineering and Applied Physics: PHY 220(4), 324(4), 351(3)
- b. Graduate Prep Physics: MAT 580(3); PHY 351(3), 476(3), 575(3)
- c. Materials Physics: MAT 540(3), 550(3), 580(3); PHY 575(3)
- d. Teaching Prep Physics: AST 115 (4); GRY 108(3) and at least six credit hours from any 300 or 400 level courses from AST, MAT or PHY excluding PHY 501. For students interested in this

option it is recommended that you reference the information included in the Undergraduate Catalog under Overview and Programs for Physics.

- 4. Related Requirements: <u>MTH 280(5)</u>, <u>302(3)</u>, <u>303(3)</u>
- C General Baccalaureate Degree Requirements see <u>General Baccalaureate Degree Requirements</u> section of catalog

# **Curricular Action Workflow**





Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Submitted on 03/27/2017 by S Mat	ins (Anciamatins@missouris)	alticuu/.	
Department:			
Biology.			nu 2. tag ig tij
Type of Program Choose One:			
Major (Non-Comprehensive/Graduate  Major (Non-Comprehensive/Graduate)	O Minor	○ Academic Rules	
Program)	○ Certificate	ं Other	
O Comprehensive Major	○ Certification		
Option			
	•		
Title of Program Affected:			

Current Catalog Description: (Either cut and paste present description from online catalog OR provide as an attachment below,

BIO 121(4), 122(4), 235(4), 310(5) or 320(4), 369(4), 494(1), 550(3)'  Select elective courses in biology to total a minimum of 32 hours and include at least 12 hours of 300 level or higher courses. Electives may be selected from one of the following emphases. Advisors can assist students to select electives to emphasize areas that best meet their interest and career goals. Popular areas of emphasis include pre-health studies (pre-medical, pre-veterinary, pre-physical therapy, etc.), microbiology, cell/molecular biology, environmental/conservation biology, and zoology, but other areas of emphasis are also possible.  Related Requirements: CHM 201(3) and 202(2), or CHM 342(5) and 343(5) or 344(3); PHY 123(4) and 124(4) or PHY 203(5) and 204(5); MTH 261(5) or 287(3)  Public Affairs Capstone Experience will be fulfilled by completion of BiO 369(4) and 494(1) and one additional course from the following: BiO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 509(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Course may also be used to satisfy the elective courses in biology.  Minor Required (or second major)  Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog.	Biology (Non-Comprehensive) (BA)
Major Requirements  BIO 121(4), 122(4), 235(4), 310(5) or 320(4), 369(4), 494(1), 550(3)  Select elective courses in biology to total a minimum of 32 hours and include at least 12 hours of 300 level or higher courses. Electives may be selected from one of the following emphases. Advisors can assist students to select electives to emphasize areas that best meet their interest and career goals. Popular areas of emphasis include pre-health studies (pre-medical, pre-veterinary, pre-physical therapy, etc.), microbiology, cell/molecular biology, environmental/conservation biology, and zoology, but other areas of emphasis are also possible.  Related Requirements: CHM 201(3) and 202(2), or CHM 342(5) and 343(5) or 344(3); PHY 123(4) and 124(4) or PHY 203(5) and 204(5); MTH 261(6) or 287(3)  Public Affairs Capstone Experience will be fulfilled by completion of BiO 369(4) and 494(1) and one additional course from the following: BiO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 601(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Course may also be used to satisfy the elective courses in biology.  Minor Required (or second major)  Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of coatalog.	Bachelor of Arts
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(pre-medical, pre-veterinary, pre-physical therapy, etc.), microbiology, cell/molecular biology, environmental/conservation biology, and zoology, but other areas of emphasis are also possible.  Related Requirements: CHM 201(3) and 202(2), or CHM 342(5) and 343(5) or 344(3); PHY 123(4) and 124(4) or PHY 203(5) and 204(5); MTH 261(5) or 287(3)  Public Affairs Capstone Experience will be fulfilled by complétion of BIO 369(4) and 494(1) and one additional course from the following: BIO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Course may also be used to satisfy the elective courses in biology.  Minor Required (or second major)  Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog.	courses. Electives may be selected from one of the following emphases. Advisors can assist students to select electives.
biology, and zoology, but other areas of emphasis are also possible.  Related Requirements: CHM 201(3) and 202(2), or CHM 342(5) and 343(5) or 344(3); PHY 123(4) and 124(4) or PHY 203(5) and 204(5); MTH 261(5) or 287(3).  Public Affairs Capstone Experience will be fulfilled by complétion of BIO 369(4) and 494(1) and one additional course from the following: BIO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Course may also be used to satisfy the elective courses in biology.  Minor Required (or second major).  Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog.	to emphasize areas that best meet their interest and career goals. Popular areas of emphasis include pre-health studies
Related Requirements: CHM 201(3) and 202(2), or CHM 342(5) and 343(5) or 344(3); PHY 123(4) and 124(4) or PHY 203(5) and 204(5); MTH 261(5) or 287(3)  Public Affairs Capstone Experience will be fulfilled by complétion of BiO 369(4) and 494(1) and one additional course from the following: BiO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Course may also be used to satisfy the elective courses in biology.  Minor Required (or second major)  Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog.	(pre-medical, pre-veterinary, pre-physical therapy, etc.), microbiology, cell/molecular biology, environmental/conservation
203(5) and 204(5); MTH 261(5) or 287(3)  Public Affairs Capstone Experience will be fulfilled by complétion of BIO 369(4) and 494(1) and one additional course from the following: BIO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Course may also be used to satisfy the elective courses in biology, Minor Required (or second major)  Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog.	biology, and zoology, but other areas of emphasis are also possible.
Public Affairs Capstone Experience will be fulfilled by complétion of BIO 369(4) and 494(1) and one additional course from the following: BIO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Course may also be used to satisfy the elective courses in biology.  Minor Required (or second major)  Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog.	Related Requirements: CHM 201(3) and 202(2), or CHM 342(5) and 343(5) or 344(3); PHY 123(4) and 124(4) or PHY
from the following: BIO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Course may also be used to satisfy the elective courses in biology.  Minor Required (or second major)  Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog.	203(5) and 204(5); MTH 261(5) or 287(3)
509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3), Course may also be used to satisfy the elective courses in biology, Minor Required (or second major)  Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog	Public Affairs Capstone Experience will be fulfilled by complétion of BIO 369(4) and 494(1) and one additional course
589(3). Course may also be used to satisfy the elective courses in biology. Minor Required (or second major) Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog	from the following: BIO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3),
Minor Required (or second major) Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog	509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3),
Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of catalog	589(3). Course may also be used to satisfy the elective courses in biology.
catalog.	Minor Required (or second major)
	Specific Requirements for Bachelor of Arts Degree - see Specific Bachelor of Arts Degree Requirements section of
General Baccalaureate Degree Requirements - see General Baccalaureate Degree Requirements section of catalo	catalog
	General Baccalaureate Degree Requirements - see General Baccalaureate Degree Requirements section of catalo

Not Attached

Complete New Catalog Description: (Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission] OR provide as an attachment below)

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						Total Hours: 125
What	i is	chan	ging	? Cł	eci	all boxes that apply:
□ T	itle	char	nge			☐ From option to program (major) ☐ Other ☐ Ot
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**Reason for Proposed Change:** 

BIO 494 is Senior Seminar. The department wants to encourage students to take a seminar earlier in their program of study. We are replacing BIO 494 with BIO 302 Biology Seminar.

(24)

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

11/18/2016

#### **Current Status:**

College Council Review

#### **Proposal Progress:**

03/31/2017 - Submitted by Department Head (\$ Mathis)

#### **Review Comments:**

No comments have been added to this proposal.



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# **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action
Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Submitted on 03/27/2017 by Rache	Rigby (RachelRigby@Mis	souriState.edu).	
Department:			
Biology			
Type of Program	·		
Choose One:			
Major (Non-Comprehensive/Graduate	○ Minor	Academic Rules	
Program)	ි Certificate	் Other	
Ocomprehensive Major	○ Certification		
Option			
			·
Title of Program Affected:		·	1
Title of Flogram Affected.	a company of the first state of	**************************************	
Biology-BS-Minor Required			

Current Catalog Description: (Either cut and paste present description from online catalog OR provide as an attachment below)

Biology (Non-Comprehensive) (BS):	
Bachelor of Science	- Very many many many many many many many man
General Education Requirements - see General Education Program and Requirements section of catalog	
Major Requirements	
BIO 121(4), 122(4), 235(4), 310(5) or 320(4), 369(4), 494(1), 550(3)	
Select elective courses in biology to total a minimum of 36 hours and include at least 12 hours of 300-level or higher courses. Advisors can assist students to select electives to emphasize areas that best meet their interest and career goals.	
Popular areas of emphasis include pre-health studies (pre-medical, pre-veterinary, pre-physical therapy, etc.); microbiology,	
cell/molecular biology, environmental/conservation biology, and zoology, but other areas of emphasis are also possible.	
Public Affairs Capstone Experience will be fulfilled by completion of BIO 369(4) and 494(1) and one additional course from	
the following: BIO 300(1), 355(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4),	
511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3).	
Course may also be used to satisfy the elective courses in biology.	į
Related Requirements: CHM:201(3) and 202(2), or CHM 342(5) and 343(5) or 344(3); PHY 123(4) and 124(4) or PHY 203(5) and 204(5); MTH 261(5) or 287(3)	  -  -
Minor Required (or second major)	
General Baccalaureate Degree Requirements - see General Baccalaureate Degree Requirements section of catalog	Not Attached
Complete New Catalog Description: (Either provide the revised description in the text area below [strikethrough all deletions and in content that is copied and pasted will lose existing formatting; please review prior to submission] OR provide as an attachment below)	isert/bold new information - any
◆ → B I S	
Biology (Non-Comprehensive) (BS) Bachelor of Science	
General Education Requirements - see General Education Program and Requirements section of catalog	
Major Requirements BIO 121(4), 122(4), 235(4), 310(5) or 320(4), 369(4), 494 302(1), 550(3)	
Select elective courses in biology to total a minimum of 36 hours and include at least 12 hours of 300-level or higher courses. Advelectives to emphasize areas that best meet their interest and career goals. Popular areas of emphasis include pre-health studies (pre-physical therapy, etc.), microbiology, cell/molecular biology, environmental/conservation biology, and zoology, but other areas Public Affairs Capstone Experience will be fulfilled by completion of BIO 369(4) and 494 302(1) and one additional course from the 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Course may also be used to satisfy the elective courses in biolog Related Requirements: CHM 201(3) and 202(2), or CHM 342(5) and 343(5) or 344(3); PHY 123(4) and 124(4) or PHY 203(5) and Minor Required (or second major)  General Baccalaureate Degree Requirements - see General Baccalaureate Degree Requirements section of catalog	(pre-medical, pre-veterinary, of emphasis are also possible. e following: BIO 300(1), 355(4), ), 539(3), 547(3), 561(2), 573(3),
section of a section of the s	

Not Attached

Total Hours: 125

## What is changing? Check all boxes that apply:

- ☐ Title change ☐ From option to program (major)
- ☑ Course changes of under 18 hours ☐ From program (major) to option
- ☐ Course changes of 18 hours or more

## Reason for Proposed Change:

BIO 494 is Senior Seminar. The department wants to encourage students to take a seminar earlier in their program of study. We are replacing BIO 494 with BIO 302 Biology Seminar.

## What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

11/18/2016 **Current Status:** College Council Review

#### **Proposal Progress:**

03/31/2017 - Submitted by Department Head (S Mathis)

#### **Review Comments:**

No comments have been added to this proposal.





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# **Curricular Action Workflow**





Missouri State > Computer Sérvices - MIS > Curricular Action Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Department:			
Biology			
Type of Program Choose One:			
Major (Non-Comprehensive/Graduate Program)	O Minor	Academic Rules	
Tograms	○ Certificate	○ Other	
© Comprehensive Major	O Certification	:	
Option :			

Current Catalog Description: (Either cut and paste present description from online catalog OR provide as an attachment below)

Biology (Comprehensive) (BS)
Bachelor of Science
General Education Requirements - see General Education Program and Requirements section of catalog
Major Requirements
BIO 121(4), 122(4), 235(4), 494(1), 550(3)
PHY 123(4) and 124(4) or PHY 203(5) and 204(5)
MTH 138(5) or 181(3), or eligibility for MTH 261 on mathematics placement test
BIO 310(5) or 320(4) or 361(4) or 544(4); consult options below before selecting course
CHM 116(4) and 117(1), or CHM 160(4) and 161(1); consult options below before selecting course
CHM 201(3) and 202(2), or CHM 302(5) or 342(5); consult options below before selecting course
Public Affairs Capstone Experience will be fulfilled by completion of BIO 494(1) and two additional courses from the following: BIO
300(1), 355(4), 369(4), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3),
520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Courses may also be
used to satisfy option requirements.
Complete requirements in one of the following options*: Note: With approval of advisor, up to 3 hours of the following can be
substituted for one of the BIO courses listed in any option: BIO 300, 399, 499, or 557.

Not Attached

Complete New Catalog Description: (Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission] OR provide as an attachment below)

*		*	В	I	S		
Ba Ge Ma BIC PH MT BIC CH CH Pul 370 574 Coi	chelo neral jor R O 12: Y 12: H 13 O 310 IM 11 IM 20 blic A 0(4), 4(2),	or of S I Eductequir 1(4), 3(4) (6 18(5) 0(5) (6 16(4) 11(3) Mfairs 373( 575( te rec	Science tation ement 122(4 and 12 or 320 and 1 and 2 (Capsi (3), 39 (3), 57 quirem	Requi (S), 235 (4(4) (-(3), 0 (4) or 17(1), 02(2), tone E (8(1), (6(3), ients i	6(4), 494 <b>302</b> (1), 55 or PHY 203(5) and 2 or eligibility for MTH 361(4) or 544(4); or or CHM 160(4) and or CHM 302(5) or 3 xoreinoce will be ful 399(1-3), 485(1-3), 577(3), 578(4), 578	(5)  1 on mathematics placement test sult options below before selecting course (51(1); consult options below before selecting course (51(1); consult options below before selecting course (5); consult options below before selecting course ed by completion of BIO 494 302(1) and two additional courses from the following: BIO 300(1), 355(4), 98(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(3), 584(3), 589(3). Courses may also be used to satisfy option requirements. options*: Note: With approval of advisor, up to 3 hours of the following can be substituted for one of the	.(2), 573(3),
Vot	Atta	ched	f			Total Hours: 125	
Wha	at is	char	ıging	? Che	ck all boxes that	pply:	
□ .	Title	cha:	nge			☐ From option to program (major) ☐ Other	98   1   1   1   1   1   1   1   1   1
S) (	Cour	гзе с	hange	s of u	ınder 18 hours	☐ From program (major) to option	
IJ (	Cou	rse c	hange	s of 1	8 hours or more		
₹ea:	son 1	for P	ropo	sed C	hange:	•	
DIA				ew. k			

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

study. We are replacing BIO 494 with BIO 302 Biology Seminar.

TIV/18/2016

Current Status:

Withdrawn

Proposal Progress:

This proposal is waiting for its first review.

#### **Review Comments:**

No comments have been added to this proposal.



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# **Curricular Action Workflow**



Missouri State > Computer Services - MiS > Curricular Action Workflow > CAW - Change Program Proposal Form

# **Change Program Proposal Form**

Submitted on 03/31/2017 by Georgianna Saunders ( <u>Gigisaunders@missouristate.edu</u> ).					
Department:					
Biology					
Type of Program Choose One:					
Major (Non-Comprehensive/Graduate  Brown	O Minor	Academic Rules			
Program)	○ Certificate	Other			
○ Comprehensive Major * Option	O Certification				
Title of Program Affected:	•				
Biology/Wildlife Biology-BS					
Current Catalog Description: (Either cut and par	ste present description from online catalo	og <b>OR</b> provide as an attachment below)			
		Attached			
Complete New Catalog Description: (Either procontent that is copied and pasted will lose existing form		area below [strikethrough all deletions and insert/bold new information - any			
* * B / S					
		,			
Attached					
What Is changing? Check all boxes that appl	y:				
□ Title change	☐ From option to program (m	najor)			

Course changes of under 18 hours	☐ From program (major) to option	Creation of a new option in the BS
□ Course changes of 18 hours or more		Biology Comprehension program ☐

#### Reason for Proposed Change:

This new option provides basic science content competencies for students preparing to enter post-graduate studies to become a high school science teacher. This track does not include courses in teacher education that are required by the state of Missouri for certification as a teacher. Certification requirements can be met through post-baccalaureate programs or masters programs.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

03/31/2017			

#### **Current Status:**

College Council Review

## Proposal Progress:

03/31/2017 - Submitted by Department Head (\$ Mathis)

#### **Review Comments:**

No comments have been added to this proposal.





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# Biology (Comprehensive) (BS)

Bachelor of Science

- General Education Requirements see <u>General Education Program and Requirements</u> section of catalog
- 2. Major Requirements
- 1. <u>BIO 121(4)</u>, <u>122(4)</u>, <u>235(4)</u>, <u>494(1)</u>, <u>550(3)</u>
- 2. PHY 123(4) and 124(4) or PHY 203(5) and 204(5)
- 3. MTH 138(5) or 181(3), or eligibility for MTH 261 on mathematics placement test
- 4.  $\underline{BIO 310}(5)$  or  $\underline{320}(4)$  or  $\underline{361}(4)$  or  $\underline{544}(4)$ ; consult options below before selecting course
- 5. CHM 116(4) and 117(1), or CHM 160(4) and 161(1); consult options below before selecting course
- 6. CHM 201(3) and 202(2), or CHM 302(5) or 342(5); consult options below before selecting course
- 7. Public Affairs Capstone Experience will be fulfilled by completion of <u>BIO 494</u>(1) and two additional courses from the following: <u>BIO 300</u>(1), <u>355</u>(4), <u>369</u>(4), <u>370</u>(4), <u>373</u>(3), <u>398</u>(1), <u>399</u>(1-3), <u>485</u>(1-3), <u>498</u>(3), <u>499</u>(1-3), <u>501</u>(2), <u>505</u>(3), <u>508</u>(3), <u>509</u>(4), <u>511</u>(4), <u>512</u>(3), <u>520</u>(3), <u>527</u>(1-4), <u>539</u>(2), <u>547</u>(3), <u>561</u>(2), <u>573</u>(3), <u>574</u>(2), <u>575</u>(3), <u>576</u>(3), <u>577</u>(3), <u>578</u>(4), <u>579</u>(4), <u>584</u>(3), <u>589</u>(3). Courses may also be used to satisfy option requirements.
- 8. Complete requirements in one of the following options\*: Note: With approval of advisor, up to 3 hours of the following can be substituted for one of the BIO courses listed in any option: <u>BIO 300</u>, 399, 499, or 597.
- a. Environmental Biology and Evolution (71-85 hours total)
- 1. Required courses: <u>BIO 369(4)</u>, <u>515(3)</u>

- 2. Complete courses in biodiversity and evolution totaling at least 3 hours from the following: <u>BIO 334(3), 339(2), 370(4), 371(3), 380(5), 530(3), 571(4), 573(3), 574(2), 575(3), 576(3), 577(3)</u>; the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: <u>BIO 534(2), 535(1), 555(3), 556(3), 587(3), 588(3)</u>
- 3. Complete courses in population biology totaling at least 3 hours from the following: <u>BIO 436(4)</u>, 505(3), 532(3), 540(4), 560(3), 563(3), 567(4), 578(4), 584(3), 589(3); the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: <u>BIO 557(2)</u>, 558(2)
- 4. Complete courses in community/ecosystem biology totaling at least 3 hours from the following: <u>BIO 373(3), 485(1-3), 508(3), 509(4), 533(3), 539(2), 547(3), 562(4), 579(4)</u>; the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: <u>BIO 537(2), 538(2), 565(3), 566(2)</u>
- 5. Students must take at least one biology course with a substantial field component. A course used to satisfy this requirement also may be counted toward the biodiversity, population biology, and community/ecosystem biology concentration areas described above. Complete one of the following: BIO 334(3), 339(2), 370(4), 436(4), 509(3), 527(1-4), 562(4), 574(2), 575(3), 576(3), 577(3), any biology course taught at the Gulf Coast Research Laboratory, any biology course taught at the Bull Shoals Field station or another field station (with the approval of your advisor)
- 6. Complete 0-7 hours of elective BIO courses at the level of 300 or higher to total a minimum of 43 hours in biology
- 7. Complete at least one of the following related requirements in Mathematics, Statistics, or Computer programming: MTH 261(5) or 287(3) or 546(3) or 547(3) or CSC 125(4) or CSC 130(3) or BIO 551(2) or PSY 527(3)
- 8. Related requirements in Chemistry: <u>CHM 160(4)</u>, <u>161(1)</u>, <u>170(3)</u>, <u>171(1)</u>
- 9. Complete one of the following related science courses: <u>AGN 215(3)</u>, <u>ANT 375(3)</u>; <u>CHM 260(3)</u> or 460(3); <u>GLG 171(3)</u>, <u>GRY 351(3)</u>
- 10. Complete one of the following from related fields of study: ECO 540(3), LAW 537(3), PHI 302(3), PLS 555(3), PSY 379(3)

# (27)

- b. Microbiology and Biotechnology (71-87 hours total)
- 1. Required courses: <u>BIO 310(5)</u>, <u>320(4)</u>
- 2. Complete 21 additional hours in BIO courses with a minimum of 18 hours from the following: <u>BIO 355(4), 508(3), 511(4), 512(3); 505(3)</u> or <u>515(3); 517(4), 518(2), 520(3), 530(3), 540(4); BMS 524(3)</u> may be substituted for one of these courses; <u>CHM 302(5)</u> or <u>502(4)</u> or <u>505(4)</u> may be substituted for one of these courses
- 3. Related requirements in Chemistry: <u>CHM 160(4)</u>, <u>161(1)</u>, <u>170(3)</u>, <u>171(1)</u>; <u>CHM 201(3)</u> and <u>202(2)</u>, or <u>CHM 342(5)</u> and <u>343(5)</u>, or <u>CHM 342(5)</u> and <u>344(3)</u>; <u>CHM 352(3)</u>, or <u>CHM 452(3)</u> and <u>552(3)</u>
- c. Wildlife Biology (67-87 hours total)
- 1. Required courses: <u>BIO 320(4)</u> or <u>361(4)</u>, <u>369(4)</u>
- 2. Complete two courses in plant biology from: <u>BIO 334(3)</u>, <u>339(2)</u>, <u>530(3)</u>, <u>544(4)</u>
- 3. Complete three courses in animal biology from: <u>BIO 370(4)</u>, <u>371(3)</u>, <u>380(5)</u>, <u>571(4)</u>, <u>573(3)</u>, <u>574(2)</u>, <u>575(3)</u>, <u>576(3)</u>, <u>577(3)</u>
- 4. Complete a minimum of 5 hours in management from: <u>BIO 373(3), 485(1-3), 509(4), 532(3), 562(4), 589(3)</u>
- 5. Complete two courses in ecology and evolution from: <u>BIO 436(4)</u>, <u>515(3)</u>, <u>539(2)</u>, <u>563(3)</u>, <u>567(4)</u>, <u>578(4)</u>, <u>579(4)</u>, <u>584(3)</u>
- Complete one course in human dimensions from the following: <u>AGN 335(3)</u>, <u>BIO 547(3)</u>, <u>BIO 561(2)</u>, <u>CRM 210(3)</u>, <u>ECO 540(3)</u>, <u>GRY 108(3)</u>, <u>GRY 351(2)</u>, <u>PHI 302(3)</u>, <u>PLS 555(3)</u>, <u>LAW 537(3)</u>
- 7. Complete one course in earth/environmental science: <u>AGN 215(3)</u>, <u>CHM 260(3)</u>, <u>GLG 110(4)</u>, <u>GRY 142(4)</u>



# Biology (Comprehensive) (BS)

Bachelor of Science

- General Education Requirements see <u>General Education Program and Requirements</u> section of catalog
- 2. Major Requirements
- 1. <u>BIO 121(4)</u>, <u>122(4)</u>, <u>235(4)</u>, <u>494</u> **302**(1), <u>550(3)</u>
- 2. PHY 123(4) and 124(4) or PHY 203(5) and 204(5)
- 3. MTH 138(5) or 181(3), or eligibility for MTH 261 on mathematics placement test
- 4. BIO 310(5) or 320(4) or 361(4) or 544(4); consult options below before selecting course
- 5. CHM 116(4) and 117(1), or CHM 160(4) and 161(1); consult options below before selecting course
- 6. CHM 201(3) and 202(2), or CHM 302(5) or 342(5); consult options below before selecting course
- 7. Public Affairs Capstone Experience will be fulfilled by completion of <u>BIO 494 302(1)</u>, and two additional courses from the following: <u>BIO 300(1)</u>, <u>355(4)</u>, <u>369(4)</u>, <u>370(4)</u>, <u>373(3)</u>, <u>398(1)</u>, <u>399(1-3)</u>, <u>485(1-3)</u>, <u>498(3)</u>, <u>499(1-3)</u>, <u>501(2)</u>, <u>505(3)</u>, <u>508(3)</u>, <u>509(4)</u>, <u>511(4)</u>, <u>512(3)</u>, <u>520(3)</u>, <u>527(1-4)</u>, <u>539(2)</u>, <u>547(3)</u>, <u>561(2)</u>, <u>573(3)</u>, <u>574(2)</u>, <u>575(3)</u>, <u>576(3)</u>, <u>577(3)</u>, <u>578(4)</u>, <u>579(4)</u>, <u>584(3)</u>, <u>589(3)</u>. Courses may also be used to satisfy option requirements.
- 8. Complete requirements in one of the following options\*: Note: With approval of advisor, up to 3 hours of the following can be substituted for one of the BIO courses listed in any option: <u>BIO 300</u>, 399, 499, or 597.
- a. Environmental Biology and Evolution (71-85 hours total)
- 1. Required courses: <u>BIO 369(4)</u>, <u>515(3)</u>

- 2. Complete courses in biodiversity and evolution totaling at least 3 hours from the following: <u>BIO 334(3), 339(2), 370(4), 371(3), 380(5), 530(3), 571(4), 573(3), 574(2), 575(3), 576(3), 577(3)</u>; the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: <u>BIO 534(2), 535(1), 555(3), 556(3), 587(3), 588(3)</u>
- 3. Complete courses in population biology totaling at least 3 hours from the following: <u>BIO 436(4)</u>, 505(3), 532(3), 540(4), 560(3), 563(3), 567(4), 578(4), 584(3), 589(3); the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: <u>BIO 557(2)</u>, 558(2)
- 4. Complete courses in community/ecosystem biology totaling at least 3 hours from the following: <u>BIO</u> 373(3), 485(1-3), 508(3), 509(4), 533(3), 539(2), 547(3), 562(4), 579(4); the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: <u>BIO</u> 537(2), 538(2), 565(3), 566(2)
- 5. Students must take at least one biology course with a substantial field component. A course used to satisfy this requirement also may be counted toward the biodiversity, population biology, and community/ecosystem biology concentration areas described above. Complete one of the following: BIO 334(3), 339(2), 370(4), 436(4), 509(3), 527(1-4), 562(4), 574(2), 575(3), 576(3), 577(3), any biology course taught at the Gulf Coast Research Laboratory, any biology course taught at the Bull Shoals Field station or another field station (with the approval of your advisor)
- 6. Complete 0-7 hours of elective BIO courses at the level of 300 or higher to total a minimum of 43 hours in biology
- 7. Complete at least one of the following related requirements in Mathematics, Statistics, or Computer programming: MTH 261(5) or 287(3) or 546(3) or 547(3) or CSC 125(4) or CSC 130(3) or BIO 551(2) or PSY 527(3)
- 8. Related requirements in Chemistry: <u>CHM 160(4), 161(1), 170(3), 171(1)</u>
- 9. Complete one of the following related science courses: <u>AGN 215(3)</u>, <u>ANT 375(3)</u>; <u>CHM 260(3)</u> or 460(3); <u>GLG 171(3)</u>, <u>GRY 351(3)</u>
- 10. Complete one of the following from related fields of study: ECO 540(3), LAW 537(3), PHI 302(3), PLS 555(3), PSY 379(3)



- b. Microbiology and Biotechnology (71-87 hours total)
- 1. Required courses: <u>BIO 310(5)</u>, <u>320(4)</u>
- 2. Complete 21 additional hours in BIO courses with a minimum of 18 hours from the following: <u>BIO 355(4), 508(3), 511(4), 512(3); 505(3)</u> or <u>515(3); 517(4), 518(2), 520(3), 530(3), 540(4); BMS 524(3)</u> may be substituted for one of these courses; <u>CHM 302(5)</u> or <u>502(4)</u> or <u>505(4)</u> may be substituted for one of these courses
- 3. Related requirements in Chemistry: <u>CHM 160(4)</u>, <u>161(1)</u>, <u>170(3)</u>, <u>171(1)</u>; <u>CHM 201(3)</u> and <u>202(2)</u>, or <u>CHM 342(5)</u> and <u>343(5)</u>, or <u>CHM 342(5)</u> and <u>344(3)</u>; <u>CHM 352(3)</u>, or <u>CHM 452(3)</u> and <u>552(3)</u>
- c. Pre-Teacher Education (71 73 hours total)\*:
  - 1. Required courses: : <u>BIO 310(5)</u>, <u>361(4)</u>, <u>369(4)</u>, <u>515(3)</u>
  - 2. Complete a minimum of 9 additional hours of upper level Biology courses (with approval of advisor).
  - 3. Related requirements in Chemistry: <u>CHM 160(4)</u>, <u>161(1)</u>, <u>170(3)</u>, <u>171(1)</u>; <u>CHM 201(3)</u> and <u>202(2)</u>, or <u>CHM 302(5)</u>
  - 4. Complete the following related science courses: <u>GLG 171(3)</u>; <u>GRY 135(3)</u>; <u>SCI 505(3)</u>
  - 5. Complete at least one of the following related requirements in Mathematics: MTH 181(3), or eligibility for MTH 261 on mathematics placement test
  - \* This option is designed for students preparing to enter post-graduate studies to become a high school science teacher. This program does not include courses in teacher education that are required by the state of Missouri for certification as a teacher. Certification requirements can be met through post-baccalaureate programs or masters programs at Missouri State University.
  - e. d. Wildlife Biology (67-87 hours total)
- 4. Required courses: <u>BIO 320(4)</u> or <u>361(4)</u>, <u>369(4)</u>

- 5. Complete two courses in plant biology from: <u>BIO 334(3)</u>, <u>339(2)</u>, <u>530(3)</u>, <u>544(4)</u>
- 6. Complete three courses in animal biology from: <u>BIO 370(4)</u>, <u>371(3)</u>, <u>380(5)</u>, <u>571(4)</u>, <u>573(3)</u>, <u>574(2)</u>, <u>575(3)</u>, <u>576(3)</u>, <u>577(3)</u>
- 7. Complete a minimum of 5 hours in management from: <u>BIO 373(3)</u>, <u>485(1-3)</u>, <u>509(4)</u>, <u>532(3)</u>, <u>562(4)</u>, <u>589(3)</u>
- 8. Complete two courses in ecology and evolution from: <u>BIO 436(4), 515(3), 539(2), 563(3), 567(4), 578(4), 579(4), 584(3)</u>
- 9. Complete one course in human dimensions from the following: <u>AGN 335(3)</u>, <u>BIO 547(3)</u>, <u>BIO 561(2)</u>, <u>CRM 210(3)</u>, <u>ECO 540(3)</u>, <u>GRY 108(3)</u>, <u>GRY 351(2)</u>, <u>PHI 302(3)</u>, <u>PLS 555(3)</u>, <u>LAW 537(3)</u>
- 10. Complete one course in earth/environmental science: <u>AGN 215(3)</u>, <u>CHM 260(3)</u>, <u>GLG 110(4)</u>, <u>GRY 142(4)</u>

General Baccalaureate Degree Requirements - see <u>General Baccalaureate Degree Requirements</u> section of catalog

# **Curricular Action Workflow**



Computer Services

Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - New Course Proposal Form

Jev	w Course Pro	posal Form			
Sub	mitted on 03/31/2017	by Ryan Udan ( <u>RyanUdan@M</u> i	issouriState.edu).		
ll fie	lds require input				
(6)	New COURSE			•	
0	New REGULAR PERMANENT S below	SECTION of an existing variable content cours	se. If a new regular section of an e	xisting variable topics course, enter t	the existing course number
Coursi BIO	e Code:	Course Numb	er: (Check Availability)		
7.7	e Title: gy:Seminar:	18. 12.48 s 1.556 s 1.			
Will th	is proposal need to be reviewed by	y CGEIP?			
	s proposal need to be reviewed by			,	
KHREA	uisite/Co-requisite or enter 'None 21 or BMS110; BIO122				
intro care	duction to major fields of studer development, undergradua	y Pass/Not Pass grading restrictions, repeatab dy in biology, the role of biology in the p te research, study-away opportunities, ily. Public affairs capstone experience c	public affairs mission, and info and applying to graduate/pro	imation on	
Credit	Hours: 1	Lecture Contact Hours:	1	Lab Contact Hours:	0
lote:	f variable credit, enter the highest	t number and add to end of course description	n. (e.g. "Variable credit, may be tal	ken 1-3 hours.")	
riodi	city. Check all that apply.				
	Fall 🖸	Fall (even-numbered years only)	<u>(*)</u>	Fall (odd-numbered years only:	

Ø	Spring		Spring (even-numbered ye	ears only)			Spring (odd-numbered years only)	
	Summer	D	On Demand only					
BtO 302 Bi Prerequisit Introduction opportunit Credit hou		IO122 udy in biolog aduate/profe	essional schools. Graded Pas				relopment, undergraduate research, study-a course.	way
Include sar	nple syllabus (list topi	cs, course go	oals.) Use text box OR uploa	d only file types of	PDF, DOC or DOCX.	All Marie	Attached	
CONTROL 4.33	vide students with		of future biology elective raduate research, study	2.5.6				
Relationshi None	p to Other Departmen	ts III 25 N						·
			urse to this one? 🏽 No 🗢	Yes .				
	i <b>e Resource Infor</b> i I Average Enrollment p				Maximum Enrollm	ent Limit per	r section:	
, , , , , , , , , , , , , , , , , , , ,	- ,			70	Wallington English	one Zanac po		100
Anticipated	l Average Enrollment p	er semester	:	70:	Maximum Enrollm	ent Limit per	semester:	100
Anticipated	l Average Enrollment p	ег уват:		140	Maximum Enrollm	ent Limit per	year:	200
Faculty Loa	d Assignment (equate	d hours):		1				
ls another c	ourse being deleted?	° No ® Y	es		Select course n BIO494 Seni		itle being deleted.	
What will t	his course require in t	the way of:						
	Additional libra	ry Holdings						
	Additional com	puter resour	ces					

https://mis.missouristate.edu/Stardent/ccr/sreate/5227

	Additional or remodeled facilities  NA		
	Additional equipment or supplies		
	Additional travel funds		
	Additional faculty; general vs specialized		
	Additional faculty; regular vs per-course		
	Other additional expenses		
PERMITTENANT	icultý are not required, how will faculty be made available to teach this course? s will eventually replace Bio494 (Sanior Seminar)		
11.5 (12.5)	current faculty qualified and available to teach this course faculty: especially Tom Tomasi, Chris Barnhart, John Heywood and Ryan Ud	30	
What is the antic	ticipated source of students for this course?		
	If from within the department, will students be taking this course in addition to or in	place of other courses?	
	If from outside the department, which courses in other departments would most lik	ely be affected?)	
- 46 maria (00 988 48)	nts: e of this course change is to encourage students to take the course earlier l ne course it is replacing (Bio494, senior seminar)	n their studies then was the	
What is the da	date that this new course was approved by departmental or program faculty? (MM/DD/	YYYY) <b>3/31/17</b>	
Current Status		-	
College Council	cil Review		
Proposal Progr			
33/31/2017 - 30 <b>Review Comm</b> e	Submitted by Department Head (S Mathis)  ments:		

No comments have been added to this proposal.





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## Bio 302: Biology seminar: discovering your path in biology

## **Course Objectives:**

This class is designed to provide...

1) a preview of future biology elective courses that you may want to take

2) information about career development, undergraduate research, study away opportunities, and applying to graduate school

Instructor: Dr. Ryan Udan (ryanudan@missouristate.edu), Temple 227: 836-5307,

Office Hours: 2:30-4:00 pm, Thr and Fri

Class meetings: Room: Temple 120 Time: 3:30 pm to 4:20pm

## Class organization:

In each class there will be a presentation or discussion on a particular topic that is led by either myself or invited speakers. Following presentations, there will be a short question and answer (Q&A) period.

## Prerequisites:

Bio121 and  $\geq$  30 total credit hours

## Course requirements:

- -Attendance
- -Completion of full evaluation of the course
- -Completion of course waiver for senior seminar

#### Grading:

This is a pass/not pass course. Note that if you receive a "not pass" then, you will receive an "F" on your transcript. There are three requirements to pass the class 1) attendance, 2) fill out a "degree works course exception" form for a course waiver (see "senior seminar course waiver" below), and 3) a full evaluation of the course at the end. Regarding attendance, you must be absent no more than two of the presentations. You must stay for the entire presentation for it to count (including the Q&A section at the end). If you are absent for more than two presentations, then you will need to write a 10-page term paper on an assigned topic (decided by the instructor) for every presentation after the two that is missed. Detailed instructions will be provided on the paper if necessary, and the instructions must be followed exactly.

## Behavior at the presentations

Considering that invited speakers are using their spare time to present, please be respectful to the presenter. So, be attentive, put your cell phones away, do not leave during the presentation, and when appropriate, I expect students to participate in discussions. For example, I encourage students to ask questions at the end of the presentation.

## Cell phone policy:

As a member of the learning community, each student has a responsibility to other students who are members of the community. When cell phones or pagers ring and students respond in class or leave class to respond, it disrupts the class. Therefore, the Office of the Provost prohibits the use by students of cell phones, pagers, PDAs, or similar communication devices during scheduled classes. All such devices must be turned off or put in a silent (vibrate) mode and ordinarily should not be taken out during class. Given the fact that these same communication devices are an integral part of the University's emergency notification system, an exception to this policy would occur when numerous devices activate simultaneously. When this occurs, students may consult their devices to determine if a university emergency exists. If that is not the case, the devices should be immediately returned to silent mode and put away. Other exceptions to this policy may be granted at the discretion of the instructor.

## Academic integrity:

Missouri State University is a community of scholars committed to developing educated persons who accept the responsibility to practice personal and academic integrity. You are responsible for knowing and following the university's student honor code, Student Academic Integrity Policies and Procedures, available at

<u>www.missouristate.edu/policy/academicintegritystudents.htm</u> and also available at the Reserves Desk in Meyer Library. Any student participating in any form of academic dishonesty will be subject to sanctions as described in this policy.

Cheating, plagiarism, forgery, and classroom disruption are serious academic offenses and will be treated accordingly. **Cheating** is presenting others' work as your own and includes aiding others to cheat. **Plagiarism** is using others' ideas without citing the source, or submitting work aided so much by others that it is different from your own work.

## **Non-discrimination Policy:**

Missouri State University is an equal opportunity/affirmative action institution, and maintains a grievance procedure available to any person who believes he or she has been discriminated against. At all times, it is your right to address inquiries or concerns about possible discrimination to the Office for Equity and Diversity, Park Central Office Building, 117 Park Central Square, Suite 111, (417) 836-4252. Other types of concerns (i.e., concerns of an academic nature) should be discussed directly with your instructor and can also be brought to the attention of your instructor's Department Head. Please visit the OED website at <a href="https://www.missouristate.edu/equity/">www.missouristate.edu/equity/</a>.

## **Disability Accommodation Policy:**

To request academic accommodations for a disability, contact Justin Lozano, Disability Resource Center (http://www.missouristate.edu/disability), Meyer Library, Suite 111 (417) 836-4192 or (417) 836-6792 (TTY). Students are required to provide documentation of disability to Disability Services prior to receiving accommodations. Disability Services refers some types of accommodation requests to the Learning Diagnostic Clinic, which also provides diagnostic testing for learning and psychological disabilities. (A fee is charged for testing.) For information about



testing, contact the Learning Diagnostic Clinic (417) 836-4787; http://psychology.missouristate.edu/ldc/.

## **Emergency Response Policy:**

You should become familiar with a basic emergency response plan by becoming aware of exits specific to the classroom and the location of evacuation centers for the building. Students with disabilities impacting mobility should discuss the approved accommodations for emergency situations and additional options when applicable with the instructor. For more information go to <a href="http://www.missouristate.edu/safetran/51597.htm">http://www.missouristate.edu/safetran/erp.htm</a>.

## **Dropping the class:**

It is your responsibility to understand the University's procedure for dropping a class. If you stop attending but do not follow proper procedure for dropping, you will receive a failing grade and will be obligated to pay for the class. Classes may be dropped online through the My Missouri State system or in person at the Office of the Registrar with appropriate identification. No drops or withdrawals are allowed after the stated deadline to drop a class. University athletes must process all registration and Change of Schedules in the Achievement Center for Intercollegiate Athletics, Forsyth Athletic Center 239. Students who have a hold which prevents using the web registration system can visit the Office of the Registrar in person, fax a signed registration form, or send an email to registrar@missouristate.edu from their University email account. Prior to January 23rd, dropped courses will not appear on the transcript. Classes may be dropped with a "W" grade from the end of the Change of Schedule period until April 14th. Be sure to talk to your advisor before deciding to drop a class.

## **Tentative Schedule**

Date	Name	Topic
1/17/2017	Udan	Introduction and Career Assessment
1/24/2017	Lupfer	Bioethics of medicine (focus on immunology examples)
1/31/2017	Kovacs	Biology: building bridges and dissolving boundaries
2/7/2017	Strafford	Veterinarian perspective of vivariums, zoos, and aquariums
2/14/2017	B. Greene/Maher	Quantitative approaches in biology
2/21/2017	Ligon	Knowing and avoiding plaigarism in scientific writing
2/28/2017	Schweiger	Bioengineering ethics
3/7/2017	J. Greene	Study away opportunities, and/or certificates/postbac programs
3/14/2017		No Class-Spring Break
3/21/2017	Kisson-Charles	Carnivores of the wetlands
3/28/2017	Tomasi	Applying to graduate school
4/4/2017	Heywood	Explaining the oddities of life
4/11/2017	Udan	Seeking opportunities for undergraduate research
4/18/2017	Tomasi	Applied vs basic research (focus on physiological ecology examples)
4/25/2017	Kim	Cell trafficking
5/2/2017	Udan	Mutants: defects in human development

5/9/2017 Udan Course survey and verification of course waiver

# **Curricular Action Workflow**



Missouri State > Computer Services - MIS > Curricular Action Workflow > CAW - New Course Proposal Form

# **New Course Proposal Form**

Submitted on 03/31/2017 by John Heywood (<u>Johnheywood@missouristate.edu)</u>.

'All field	ls require inpu	t		•				
🐞	New COURSE		•					
	,							
O	New REGULAR P	ERMANENT SE	CTION of an existing variab	le content course, if a new	regular section of an ex	sting variable topics course, ente	r the existing course nu	≀mber
0	n. d.:							
Course BIO	Code:	7-10 E		Course Number: ( <u>Check</u>	Availability)			
Course Biolog	Title: y Program Asse:	ssment 3						No. 1
Will this	proposal need to b	a reviewed by (	CGEIP? ● No ○ Yes					
Will thjs	proposal need to b	e reviewed by I	EPPC? <sup>®</sup> No ○ Yes				·	
150000000	site/Co-requisite ours including 20	SELENSES MINE	courses, and biology ma	jor				
22507 DOG			Pass/Not Pass grading restri ation for biology majors.			cability, UG/GR parallel course, et	<b>).</b> )	
Credit H	ours:	O	Lecture Contact	Hours:	0	Lab Contact Hours:	0	
Note: If	/ariable credit, ente	er the highest n	umber and add to end of co	urse description, (e.g. "Veri	able credit, may be take	n 1-3 hours.")		
oriodioii	y. Check all tha	t annly				·		
8	Fall		Fall (even-numbered ye	ears only)	C	Fall (odd-numbered years on	γ)	
Ø	Spring		Spring (even-numbered	ł years only)		Spring (odd-numbered years	only)	
a	Summer		On Demand only					-
-								
BIO 492 I Prerequis Compreh Credit ho		ssessment ding 20 hours o examination fo act hours: 0 La	f BIO courses, and biology n r biology majors. Graded Pa b contact hours: 0	•				
Include s	ample syllabus (list	topics, course	goals.) Use text box OR upl	oad only file types of PDF, I	DOC or DOCX.			
will be	administered at 1	the Testing C	n up for the Biology Majo enter in Meyer Library, v s" upon completion of th	with accommodations f				

(29)

Purpose o	of Course
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This course will allow the biology department to track completion of the Major Field Test in Biology, a program requirement for the non-comprehensive and comprehensive majors in Biology. This tracking is currently done in BIO 494 (senior seminar) which is being replaced by a sophomore-level course, BIO 302.

elationship to Other Departments	
None :	

Is there a graduate/undergraduate parallel course to this one? 🔎 No 🔘 Yes

#### **New Course Resource Information**

Anticipated Average Enrollment per section:

Anticipated Average Enrollment per semester:

Anticipated Average Enrollment per semester:

Anticipated Average Enrollment per year:

## What will this course require in the way of:

Additional ibrary Holdings

none

Additional computer resources

none

Additional or remodeled facilities

none

Additional equipment or supplies

none

Additional travel funds

none

Additional faculty; general vs specialized

none

Additional faculty; regular vs per-course

none

Other non	additional expenses
Pantase in	
idditional faculty are n	ot required, how will faculty be made available to teach this course?
lot applicable - this ourely administrative	course carries no credits and has no contact hours. The assigned faculty member will have a proje.
st names of current fac	ulty qualified and available to teach this course
CHRICETTATALL	ource of students for this course?
iology majors	
If from	within the department, will students be taking this course in addition to or in place of other courses?
\$18110 P	course and BIO 302 will replace BIO 494, with no change in total credit hour requirements. BIO
494	will remain active during the transition, after which it will be deleted.
If from	outside the department, which courses in other departments would most likely be affected?)
.N/A	
her comments:	
lone	
What is the place that the	
What is the date that is	nis new course was approved by departmental or program faculty? (MM/DD/YYYY)  03/31/2017
rent Status:	
ege Council Reviev	•
posal Progress:	
1/2017 - Submitted	by Department Head (S Mathis)
iew Comments:	
comments have be	en added to this proposal.



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