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## Missouri University of Science and Technology

Formerly University of Missouri-Rolla

Agenda Campus Curricula Committee Meeting December 7, 2011 12 a.m. Room 117 Fulton Hall

Approval of the October 05, 2011 minutes.

#### Review of submitted DC forms:

DC 0401, Bachelor of Science, Biological Sciences, effective Fall 2012. A proposal to modify the current curriculum for the BS in Biological Science by replacing Bio Sci 221 and 222 with Bio Sci 235 and one advanced biology lab course.

#### Review of submitted CC forms:

CC \$184, Geology 360, Methods of Karst Hydrogeology, effective Spring 2012.

CC \$185, Geology 344, Remote Sensing Technology, effective Spring 2012.

CC \$187, Business 340, Introduction to Business Innovation for Sustainability, effective Fall 2012.

CC \$188, Business 440, Business Innovation for Sustainability, effective Fall 2012.

CC 8189, Russian 360, Russian Civilization 360, effective Spring 2012.

CC \$191, Statistics 360, Statistical Data Analysis Using SAS, effective Summer 2012.

#### Review of submitted EC forms:

EC 2379, Computer Science 201, Digital Forensics, effective Spring 2012.

EC 2380, Philosophy 201, Symbolic Logic, effective Spring 2012.

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Office of the Registrar • 103 Parker Hall • 300 West 13<sup>th</sup> Street • Rolla, MO 65409-0930 Phone: 573-341-4181 • Fax: 573-341-4362 • Email: registrar@mst.edu • Web: http://registrar.mst.edu

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Date: 11/9/2011 8:31:59 AM

From: 573 341 4362 Page: 1/5 Date: 10/28/2011 10:37:00 AM DC # 0401-2011- BioSci-000-00 Effective Year: 2012 Fall 🖾 Spring 🔲 Effective Yerm: Summer 🔲 (Creating or modifying a degree program must be effective for a Fall term) Degree Change Form (DC) This form is to be used for creating or modifying degree programs, emphasis areas, and minors. Title of degree program, emphasis area, or minor: Bachelor of Science, Biological Sciences Department: Biological Sciences Briefly describe action requested (Attach documentation as appropriate): We are changing one of the required courses for our B.S. degree in Biological Sciences. Currently, we require Microbiology (BioSci 221) and Microbiology Laboratory (BioSci 222) as part of the degree program. Instead, Evolution (BioSci 235) and one advanced biology lab course will be required. The total hours of biology classes and the rigor of the program will not be affected. This change was discussed by faculty in the department and passed with unanimous approval. The change is to be more consistent with other B.S. programs in biology throughout the country. These changes are outlined on the following pages (changes in bold). Recommended by Department Recommended by: Discipline Specific Curricula Committee (Chair signature) Date: \_\_\_\_\_ Approved by Curricula Committee: \_ (Chair signature) Date: \_\_\_\_\_ Approved by Faculty Senate: \_\_\_\_\_ (Chair signature)

(Revised 9/12/2011)

10/03/11

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### Current/old requirements

### Bachelor of Science Biological Sciences Degree Requirements

(only listing BioSci requirements)

	1
Вю	Sc 102-Intro to Bio Sc
Bio	110-Gen Bio or Bio Sc 111-Princ Bio
Rin	Sc 112-Gen Bio Lab
טוט	Se the self big transfer
Вιο	Sc 113 -Biodiversity
Bio	Sc 114-Biodiversity Lab
Rio	Sc 211-Cellular Biology
Bin	Sc 212-Cellular Biology Lab
010	GC ZIZ-CENDIOI PICIOSY MAY / / / / / / / / / / / / / / / / / / /
Bio	SC 551-WicLobiology
Bio	Sc 222-Microbiology Lab
	Sc 231-General Genetics
	3
Вιο	Sc 251-Ecology
Bio	Sc 310-Seminar
a .r.	ranced biological sciences or approved course work,
AQ.	AUCED Diplodical sciences or obbitored course very
in c	ther departments for a total of 46 credit hours of
14:41	omy rolated classes

### New requirements

#### Bachelor of Science Biological Sciences Degree Requirements

(only listing BioSci requirements)

Bio	Sc 102-Intro to Blo Sc
Blo	110-Gen Bio or Bio Sc 111-Princ Blo 3
Bio	Sc 112-Gen Bio Lab2
Bio	Sc 113 -Biodiversity
Bio	Sc 114-Biodiversity Lab
Bio	Sc 211-Cellular Biology
Dic	Sc 212-Cellular Biology Lab
Dic	Sc 231-General Generics
PH	Sc 251-Ecology
PIO Bio	Sc 310-Seminar
DIO	20 310-38Hillion



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From: 573 341 4362 Page: 2/2 Date: 9/30/2011 10:27:39 AM

Effective Ye Term: Sumn		I □ Spring 🛭		CC File #	8184-2011-Gcol-240-34				
	Course Change Form (CC)  This form is for creating or modifying permanent courses.								
Course Ch	anges (Che	ck all changes.)							
New Course	Con.	rse Deletion 🗌	Credit Ho	irs 🗀	Prerequisites 🖾				
Course Title	🔲 Cata	llog Description $oxtimes$	Course N	mber 🖾	Co-listing 🔲				
Course Inf	<u>ormation</u>	(1-9 Must Be Comple	ited. Leave "Propos	ed" items blani	k if no change is being made.)				
1. Departm	e <b>nt:</b> Geologi	cal Sciences'& Eng	r.						
2. Discipline	and Course	e Number: Pres	ent : Geol 260	Propos	sed: Geol 360				
3. Course Tit	e: Present	: Methods of Kar	st Hydrogeology						
	Propose	ed:							
Abbreviat	ed Course								
4 Catalon De		ices or Less. Only r 10 Character Spaces		ourses or Title	: Changes.)				
Present:	' '	-	•						
r-r Caunci	Present cat	alog description ex	ceeds 300 charac	ers.					
Proposed:	discuss groukarst areas.	undwater moveme	nt, engineering pr gative techniques	oblems, wate including <del>the</del>	lentification of karst features, r quality and water supply in use of fluorescent dye tracing.  BE REQUIRED.				
5. If course r	equires field	trip check box: 🛛							
6. Credit Hou	rs:	Present:	Lecture: 3	Lab:	Total: 3				
		Proposedi	Lecture: 3	Lab:	Total: 3				
7. Prerequisit		or GE 50.and Geol	223						
Propose	d: <del>Same as</del>	above GEOL 5	OR GE 50;	SEOL XX2					
8. Required fo	or Majors: 🗍	Elective for M	lajors: 🗵						
9. Justificatio	8. Required for Majors:   Elective for Majors:   9. Justification: Change from 200 to 300 level class is justified by addition of field problem for students to solve. Students will use field investigation techniques to identify karst development characteristics and groundwater recharge/discharge relationships.								
THE COURS	E MATERIA	L AS PRESENTLY	TAUGHT IS M	ORE APPROP	PRIATE FOR A 300 LEVEL COURSE				
		offered as an exp							
11. List all co	-listed cours	es, initialed by De <sub>l</sub>	ot. Chair, if signat	ure does not a	appear below.				
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4)	5)		6)						
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		*	(Chair signature)	D. 1 214	Date: 11/2/2011				
Recommende	ia by Discibili	ne Specific Curricu	ia Committee _22 (Chair signature)	The same					
Approved by	Curricula Cor	mmittee!	(Chair signature)		Date:				
Approved by	Faculty Sens	te.		_	Date:				
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(Revised 1/29/09)

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Date: 11/9/2011 8:32:00 AM Date: 9/30/2011 10:27:39 AM

CC File # 8/85-2011- Geol-344-30 Effective Year: 2012 Fall 🔲 Term: Summer 🛄 Spring 🗵 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) New Course 🔲 Course Deletion 🛄 Credit Hours Prerequisites 🖾 Course Title 🔲 Catalog Description Course Number ... Co-listing **Course Information** (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) Department: Geological Sciences and Eng. 2. Discipline and Course Number: Present : Geo 344 Proposed: 3. Course Title: Present: Remote Sensing Technology **Proposed:** Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) Present: Proposed: 5. If course requires field trip check box: Total: 3.0 Lecture: 2.0 Lab: 1.0 6. Credit Hours: Present: Lab: Total: Proposed: Lecture: 7. Prerequisites: Present: Geo 248 Proposed: Geo 51 or Geo 52 or GeoEng 50 8. Required for Majors: 🛛 Elective for Majors: 🔲 Geo 248 "Fundamentals of GIS" course deals with vector-oriented analysis whereas 9. Justification: Geo 344 deals with raster data, aerial photography and orbital remote sensing data. Only fundamental knowledge of introductory geology is needed. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 1) GEOENG 344 3) 4) 5) Recommended by Department Shot eleverale (Chair signature) Recommended by Discipline Specific Curricula Committee. (Chair signature) Date: \_\_\_\_\_ Approved by Curricula Committee: \_\_\_\_\_ (Chair signature) Date: \_\_\_\_\_ Approved by Faculty Senate: \_\_\_ (Chair signature)

(Revised 1/29/09)

From: 573 341 4362 Page: 6/16

Date: 11/9/2011 8:32:00 AM cc File #8187-2011-Bus-340-34 Effective Year: 2012 Spring 🔲 Term: Summer 🔲 Fall 🛛 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisites 🔲 Credit Hours New Course 🛄 Course Deletion 🗌 Catalog Description 🗵 Course Number 🗌 Co-listing 🔲 Course Title 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Business and Information Tech 2. Discipline and Course Number: Present: BUS 340 Proposed: 3. Course Title: Present: Introduction to Business Innovation for Sustainability Proposed: Abbreviated Course Title: (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (300 Character Spaces or Less.) This course introduces a platform for students to focus on a variety of environmental Present: sustainability issues and studies a business proposal for an ethical, sustainable, and profitable venture for a new or existing business, non-profit, or governmental organization. Proposed: Applies an entrepreunrial mindset to the environmental and social opportunities and challenges facing the global community. Topics are examined from multiple perspectives: nonprofit, hybrid, and for-profit organizations. Credit cannot be earned for both BUS 340 and BUS 440. 5. If course regulres field trip check box:  $\Box$ Total: 3 6. Credit Hours: Present: Lecture: 3 Lab: Total: Proposed: Lecture: Lab: 7. Prerequisites: Present: BUS 330 or equivalent Proposed: Elective for Majors: 🛛 8. Required for Majors: 🔲 BUS 340 and BUS 440 are paired, with additional work required for the graduate 9. Justification: version. They cannot both be taken for credit. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): 11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below. 2) 1) 5) 4) (Chair signature) Recommended by Department \_ Recommended by Discipline Specific Curricula Committee (Chair signature) Date: \_\_\_\_\_ Approved by Curricula Committee: \_\_\_\_ (Chair signature) Date: \_\_\_\_\_ Approved by Faculty Senate: \_\_\_ (Chair signature)

(Revised 1/29/09)

From: 573 341 4362 Page: 7/16 Date: 11/9/2011 8:32:01 AM

Effective Ye Ferm: Sumn	ear: 2012 ner □ Fall	⊠ Spring 🗆		CC File	#8188-201	1-Bus-440-3	4
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Course Ch	anges (Che	ck all changes.)					
New Course	🗀 Соці	rse Deletion 🔲	Credit Ho	urs 🗌	Prerequis	ites 🗌	
Course Title	☐ Cata	log Description 🛭	Course N	ımber 🗌	Co-listing		
		(1-9 Must Be Comple		sed" items b	lank if no chang	e is being made.)	
i. Departm	ent: Busines	s and Information	Techn				
2. Disciplin		e Number: Pres			posed:		
3. Course Tit		: Business Innov	ation for Sustaina	ability			
	Propose						
		inte: ices or Less. Only r io Character Spaces :		ourses or T	itle Changes.)		
Present:	This course sustainabili	provides a platfor ty issues and culm	m for students to inates in a busine	ss proposa	I for an ethical	ironmental I, sustainable, and nental organization.	
Proposed:	posed: Applies an entrepreunrial mindset to the environmental and social opportunities and challenges facing the global community. Topics are examined from multiple perspectives: nonprofit, hybrid, and for-profit organizations. Written case studies required. Credit cannot be earned for both BUS340 and 440.						
5. If course	requires field	trip check box: $\square$					
5. Credit Ho	Jrs:	Present:	Lecture: 3.0	Lab:	Total: 3.0		
7. Prerequisi Present		Proposed:	Lecture:	Lab:	Total:		
Propose	ed:		_				
-	for Majors: 🛚		_				
9. Justificati	BUS 34	required in gradua to and BUS 440 are . They cannot bot	e paired, with add	litional wor	Business. k required for	the graduate	
		offered as an exp ses, initialed by De				NW.	
1)	2)	-	3)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	or appear bere	•	
4)	5)		6)				
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Recommend	ed by Discipli	ne Specific Curricu	la Committee 🊜	rug Mass	spert	Date: <u>//////</u>	
Approved by	Curricula Co	mmittee:	(Chair signature)			Date:	
	Faculty Sena		(Chair signature) (Chair signature)			Date:	
			(Chair signature)				

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Date: 11/9/2011 8:32:01 AM CC FII. # 8189-2011-Russ-360-32

Effective \ Term: Sum		Spring 🗵		CC File	#8189-2	011 - Kuss -34D-32
Course C		form is for cr	Change reating or modify			
New Course		Deletion 🗆	Credit i	lours 🗆	Prerequis	ites 🗵
Course Title	1 <del>-</del>	Description		Number 🗆	Co-listing	
	iformation (1-9	-		osed" Items bl	ank if no chang	je is being made.)
1. Departi		Ţ	·			
•	ne and Course N	umber: Pro	ssent : Russian 3	60 <b>Pro</b> ;	osed:	
3. Course T		Russian Civili				
	Proposed:					
	ated Course Titl (24 Spaces Description <i>(300 C</i>	or Less, Only	needed for New	Courses of To	itle Changes.)	1
Present:	Interrelation be	etween russia	ory and culture fr n society, it histo ecture over the pa	ry and its culi	tural expressi	ury exploring the on in painting,
Proposes	i:					72 100 100 100 100 100 100 100 100 100 10
5, If course	requires field trij	p check box: (				12 2 2 3 1 3 W
6. Credit Ho	'	esent:	Lecture: 3	Lab;	Total: 3	Phone T
		oposed:	Lecture:	Lab:	Total:	
7. Prerequi: Preser						430 PM
Propos	ed: Any 1xx lev	el history cou	rse			FALL  location:  AXX #:  from: Decotion:  From: Decotion:  Fix#: C
=	for Majors: 🗌	Elective for			2	*************
10. Semest 11. List all ( 1)	tion: Broader pr ters previously of co-listed courses, 2)	fered as an ex	perimental cours	e (101, 201,	301, 401):	
<b>4)</b> Recomment	5) ded by Departmer	, \NN	ANY			Date: 10/20/20/1
	1	•	(Chair signature)	Moreen		Date: 10/30/2011 Date: 00+.(7,201)
Recommend	ded by Discipline :	specific Curric	:ui <b>à/Committee</b> (Chair signature)	Much	<del></del> -	Date: (7,001)
Approved b	y Curricula Comm	ittee:			- in the second	Date:
Approved by	y Faculty Senate:		(Chair signature)			Date:
, ,			(Chair signature)			<del></del>
						(Revised 1/29/09)

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Date: 11/9/2011 8:32:01 AM

From: 573 341 4362 Page: 3/5 Date: 10/28/2011 10:37:01 AM cc File # 8191-2011-5tat-360-10 Effective Year: 2012 Fall 🔲 Spring 🔲 Effective Term: Summer 🗵 Course Change Form (CC) This form is for creating or modifying permanent courses. Course Changes (Check all changes.) Prerequisites 🔲 Credit Hours New Course 🖾 Course Deletion Co-listing 🔲 Course Number Catalog Description Course Title 🔲 Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.) 1. Department: Mathematics & Statistics Proposed: STAT 360 2. Discipline and Course Number: Present: 3. Course Title: Present: Proposed: Statistical Data Analysis Using SAS Abbreviated Course Title: Stat Data Analysis SAS (24 Spaces or Less. Only needed for New Courses or Title Changes.) 4. Catalog Description (40 Words or Less) Present: Proposed: This course will introduce the student to selected data analystic tools implemented in the Statistical Analysis System (SAS) and approriate and effective use of these tools. Focus would be on both the use of SAS data analytic tools and the theoretical and methodological rationale that form the basis of such analyses. 5. If course requires field trip check box:  $\square$ Total: Lecture: Lab: 6. Credit Hours: Present: Total: 3 Lab: 1 Lecture: 2 Proposed: 7. Prerequisites: Present: Proposed: One of Stat 213, 215, 217, 343 and one of Stat 346, 353, 441, 443, 444, 445 Elective for Majors: 🛛 8. Required for Majors: 🔲 9. Justification: Please see attached sheet. 10. Semesters previously offered as an experimental course (101, 201, 301, 401): Summer 2011 and Summer 2004 11. List al) co-listed courses, initialed by Dept. Chair, if signature does not appear below. 3) 2) 1) 4) Recommended by Department Chair signature) Recommended by Discipline Specific Curricula Committee (Chair signature) Date: \_ Approved by Curricula Committee: Date: \_

10/12/11

Approved by Faculty Senate: \_\_

(Revised 1/31/08)

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Stat 360: STATISTICAL DATA ANALYSIS USING SAS

Course Justification

This course was offered as Stat 401 in summer 2004 and then as a special topics summer course (Stat 400) in 2007, 2009, and 2010. We decided to offer it in summer 2011 as a 301 course instead of a 400 level course. In 2011, the course syllabus and prerequisites were changed somewhat from previous offerings to make it accessible to a wider a variety of students from both within and outside our department. This decision was based on the broad interest this course has received from graduate students from other departments. This course will be one of the courses listed under a proposed certificate program in Statistics.

The rationale for the course and course content is given below:

Rationale: Statistical Analysis System (SAS) is one of the most versatile statistical software tools that is currently available to data analysts. It is widely used in academia, government, and industry, not only by statisticians, but also by scientists in many disciplines. SAS is considered to be one of the very few statistical software tools that consistently provide accurate and statistically valid analyses and results. Its versatility and flexibility comes at the expense of simplicity. SAS is a complex software tool whose <u>full potential</u> and features are reachable only by those with a good understanding of its workings and <u>underlying statistical methodology</u>. The proposed course addresses this by introducing the student to the complex workings of SAS while at the same time emphasizing the statistical foundations that form the basis of various analytical procedures available within the software.

Courses similar to the proposed course are currently offered by statistics departments at other universities. For example, the Graduate Certificate in Applied Statistics offered by the Statistics Department at Pennsylvania State University lists two one credit hour elective courses related to SAS and an additional three credit hour course in SAS programming. These courses are: (1) Intermediate SAS for Data Management (1 credit hour), (2) Advanced Statistical Procedures in SAS (1 credit hour), (3) Statistical Analysis System Programming (3 credit hours). Details of these courses can be found at <a href="http://www.worldcampus.psu.edu/degrees-and-certificates/applied-statistics-certificate/course-list">http://www.worldcampus.psu.edu/degrees-and-certificates/applied-statistics-certificate/course-list</a>. The Master's in Professional Studies degree offered by the Statistics Department at Cornell lists STSCI 5010, which concentrates on SAS programming, as a core course. The Statistics Department at Purdue University offers STAT 506: Statistical Programming and Data Management as a graduate level course. The course description for this offering is: "Use of the SAS software system for managing statistical data. The SAS environment. Data description. Data access and management. SAS macro language and application development."

As seen from above examples, the proposed course is in line with similar courses offered at Statistics Departments in other universities and fills an important gap in the Statistics curriculum at Missouri S&T.

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Effective Year: 2012

Effective Term: Summer 🗆

Fall 🗀 Spring 🖾

EC File # 2379- Sp 2012 - CS-201

## Experimental Course Form (EC)

An EC form must be submitted before an experimental course is to be offered. EC forms approved SP2009 or later allow the course to be offered twice at any time during the following three year period. After an experimental course has been offered twice, a CC form may be submitted to request a permanent course number.

A new course that is required as part of a degree program, minor, or graduate certificate may be submitted on a CC form to receive a permanent course number

Co-listed offerings should be submitted on one form, originating from the primary discipline.

Department: Computer Science

Discipline and Course Number: CmpSc 201

Course Title: Digital Forensics

Abbreviated Title (24 spaces or less): Digital Forensics

Instructor(s): Tim Doty (CS Course Supervisor: Bruce McMillin)

Credit Hours:

Lecture: 3

Lab: 0

Total: 3

Prerequisites: C

CmpSc 263 and CmpSc 284

Semester(s) previously taught: none

Brief Course Description: (40 words or less)

The knowledge of computer and network forensics has become essential in securing today's network-centric computing environment. This course will give the students both the fundamental knowledge and hands-on practice in computer and network forensics including data collection, data preservation and analysis, and legal issues.

List all c 1)	o-listed courses: Include initials 2)	of Dept. Chair, if signature is not already 3)	/ included below.
4)	5) - (4	6)	
•	ent Chair:	(Chair Signature)  (Chair Signature)	Date: 02 10, 11  Date: 11/2/2011
Curricula	Committee:	(Chair Signature)	Date:

(Revised 10/12/2010)

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Date: 11/9/2011 8:32:02 AM 6312

Effective Year: 2012

Effective Term: Summer

Fall

Spring X

EC FIL # 2380-Sp2012-Phil-201

# **Experimental Course Form (EC)**

This form must be filed with the Secretary to the Campus Curricula Committee, after the department chair's notation, by the appropriate deadline. Filing deadlines for inclusion in the initial release of the Schedule of Classes are as follows:

Summer and Fall Semester Offerings - January 1 Spring Semester Offerings - August 1

An EC form must be submitted each semester it is to be offered, not to exceed two offerings. An experimental course that is required should be submitted on a CC form. Co-listed offerings should be submitted on one form, originating from the primary discipline.

Departmen	t: Arts, Languages, a	nd Philosophy				
Discipline a	nd Course Number:	Philosophy 201				
Course Title	s Symbolic Logic					
Abbreviated	i Title <i>(24 spaces or</i>	iess):				
Instructor(	): Dr. Darin Finke					
Credit Hour	s: Lecture: 3	Lab:	Total:	3		
Prerequisit	es: None					
Semester(s	) previously taught:	0				
An Introducti discussions o	e Description: (40 w on to sentential and pro if both syntax and sem within an artificial lang	edicate logic with an emplantics with a focus on va	hasis on the arlous techni	latter. It will ques used to	include mo examine id	statheoretic ogical
		Initials of Dept. Chair, I	f elgnature l	s not already	included b	elow.
1)	2	)	3)			
4)	110405	)	6)			
Department	Chair:	Ky 10	air Signature	<del></del>	Date:	10/3/201
Discipline Sp	ecific Curricula Commi	ttee: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		···	Date:	10/3/201
		(Chair si	gnature)			
Curricula Cos	nmittee:	(Chai	r Signature)	· · · · · · · · · · · · · · · · · · ·	Date:	<del></del>
08/29/08					(Revi	sed 1/31/2008)

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## Philosophy 201 – Symbolic Logic Spring 2012

Instructor: Dr. Darin Finke

Office: 233 H-SS

Email: finked@mst.edu
Office phone: 341-6938

Office hours: Tuesdays and Thursdays 3:15 – 5:00 pm, and by appointment

Text: The Logic Book (5th ed.), Bergmann, Moor, and Nelson

Course description and Course goals: Logic is the study of arguments. There are a wide variety of modes of reasoning employed in arguments; this course is concerned with the strongest variety—logical entailment. In this course we will learn and master a symbolic language, translate arguments and other sets of sentences into this symbolic language, and formulate rules for these symbolized arguments. This procedure is adopted because translation into the symbolic language reveals logical structure, and because the rules for arguments in the symbolic language are simpler and more precise than the rules for arguments in natural languages, like English. We shall lay down criteria for reasoning so strong that if an argument meets them, it would be impossible for the argument to have all true premises and a false conclusion at the same time. This property, which is had by certain arguments, is called deductively validity.

The goal of this course is to cultivate skill in recognizing the logical structure of arguments; skill in constructing proofs for deductively valid arguments; and skill in constructing informal interpretations or models within the symbolic language. Furthermore, we will begin to develop an understanding of the criteria used to judge the formal derivational systems that are used in constructing proofs in this symbolic language. A formal proof, or derivation, shows how the conclusion of a deductively valid argument can be obtained from the premises in a series of steps conforming to the rules of the derivational system. The rules of a derivational system are formulated with mathematical precision and reliance on them makes logic mathematical.

Our textbook is designed to cover two sequential logic courses. With minor exceptions, this course is only the first in the sequence; thus, we shall omit portions of the textbook. We shall not cover chapters four and nine, and we shall cover only small portions of chapters six, eight, and eleven.

Assignments: Aside from spending a short amount of time at the beginning of the semester to focus on the basic notions of logic, this course may be divided into two sections. Roughly, section one will be dedicated to the study and mastery of sentential, or propositional, logic. This section will end with the midterm. Section two will be dedicated to the study and mastery of predicate, or first order, logic. This section will end with the final exam. Since predicate logic includes sentential logic, the material we learn in section two will be built upon the material we learn in section one.

For each of the two sections there will be a homework set comprised of problems and exercises over that section's material. There will also be at least one quiz per section. These quizzes will be announced ahead of time. The problems and exercises on the homework sets will strongly resemble the problems on the quizzes, the midterm, and the final exam, respectively. Thus successfully completing the homework sets will be crucial to successfully completing the quizzes and exams.

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Please bring your textbooks to every class. We will very often use class time to go over exercises and problems from the textbook. There will be ample class time for you to ask questions, make comments, or participate in class discussion over the course material.

Grades: Midterm: 30% Homework set 1: 15% Final exam: 30% Homework set 2: 15%

Quizzes: 10%

Notices: This university takes plagiarism and cheating very seriously. Every faculty member, including myself, is obligated to report any case of plagiarism or cheating, no matter how minor you think it might be. A single act of plagiarism or cheating could result in your expulsion from the university. Information regarding this can be found at: <a href="http://registrar.mst.edu/academicregs/index.html">http://registrar.mst.edu/academicregs/index.html</a>.

Information regarding your academic success and this course can be found here: http://academicalert.mst.edu.

If you experience a problem with this course or with me, please come talk to me about it. If, for whatever reason, you are uncomfortable talking with me, please see the Chair of the Arts, Languages, and Philosophy Department, Professor Lance Haynes, G-4 H-SS.

If you have a documented disability and anticipate needing accommodations, see me as soon as possible. You will need to request that the Disability Services staff (Norwood Hall) send a letter to me verifying your disability and specifying the accommodation you are requesting before anything may be done. Information on this can be found at: <a href="http://dss.mst.edu">http://dss.mst.edu</a>.

Information regarding Classroom and Building Escape Plans can be found in each classroom and on the university website.

Finally, information about options for learning assistance can be found at: <a href="http://lead.mst.edu/assist">http://lead.mst.edu/assist</a>.

### Course outline (subject to change):

January 10: Course introduction; Logic basics: truth, argument, logical concepts

- Chapter 1
- 12: Logic basics continued
- 17: Sentential logic: symbolization and syntax; Homework set 1 assigned
  - Chapter 2
- 19: Symbolization and syntax continued
- 24: Sentential logic: semantics and truth tables
  - Chapter 3
- 26: Semantics and truth tables continued

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31: Sentential logic: derivations

Chapter 5

February 2: Derivations continued

7: Derivations continued

9: Derivations continued

14: Sentential logic: metatheory

• Chapter 6

16: Metatheory continued; Homework set 1 due

21: Midterm review

23: MIDTERM

28: Introduction to Predicate logic and Quantification; Symbolization and syntax

• Chapter 7

March 1: Symbolization and syntax continued

6: Complex symbolization, Multiple quantification, and Identity; Homework set 2 assigned

8: Complex symbolization, Multiple quantification, and Identity continued

13: Complex symbolization, Multiple quantification, and Identity continued

15: NO CLASS - Spring Recess

20: Predicate logic: semantics

• Chapter 8

22: Semantics continued

27: NO CLASS – Spring Break

29: NO CLASS – Spring Break

April 3: Semantics continued

5: Predicate logic: derivations

• Chapter 10

10: Derivations continued

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12: Derivations continued

17: Derivations continued

19: Predicate logic: metatheory

• Chapter 11

24: Metatheory continued; Homework set 2 due

26: Final exam review

May FINAL EXAM TBA