

Formerly University of Missouri-Rolla

Campus Curricula Committee Meeting Agenda January 8, 2019 9:00am - 10:30am, Bertelsmeyer 110H (For Faculty Senate Meeting of January 23, 2020)

Review of submitted Course Change forms:

File: 649.6	COMP ENG 2210: Introduction to Digital Logic
File: 120.1	MATH 1110: Mathematical Reasoning and Modeling
File: 1656.5	MUSIC 3252: History and Analysis of Music II
File: 2009.5	PHYSICS 1119: General Physics Laboratory
File: 284.1	PHYSICS 1145: College Physics I
File: 1738.5	PHYSICS 2119: General Physics Laboratory
File: 1971.1	PHYSICS 2145: College Physics II
File: 652.3	STAT 3425: Introduction to Biostatistics

Review of submitted Degree Change forms:

File: 242.10	HISTORY-BS: Bachelor of Science in History
File: 115.37	PHYSIC-BS: Physics BS

Review of submitted Experimental Course forms:

BIO SCI 4001.006: General Virology Lab
MATH 5001.003: Mathematics of Medical Imaging
PHYSICS 5001.001: Introduction to Atomic, Molecular, and Optical Physics
PSYCH 3001.004: Rationality: Scientific Thinking in Everyday Life
STAT 2001.001: Introductory Applied Statistical Methods

Discussion to revise and implement Spring 2020 Curricula meeting dates that are satisfactory to the Campus Curricula Committee.

Review of the revised Minor Creation Policy that reflects the updated curriculum approval process for graduate and undergraduate certificates.

Date Submitted: 11/04/19 2:10 pm

Viewing: COMP ENG 2210 : Introduction to

Digital Logic

File: 649.6 Last approved: 02/04/19 5:02 am Last edit: 11/19/19 2:42 pm Changes proposed by: stanleyj

Programs

referencing this

course

CP ENG-BS: Computer Engineering BS

Other Courses

referencing this

course

In The Prerequisites:

COMP ENG 2211 : Computer Engineering Laboratory

COMP ENG 3110 : Computer Organization and Design

COMP ENG 3150 : Introduction to Microcontrollers and

Embedded System Design

COMP ENG 3151 : Digital Engineering Lab II

COMP ENG 4096 : Computer Engineering Senior Project I

COMP ENG 5210 : Introduction To VLSI Design

COMP ENG 5220 : Digital System Modeling

COMP ENG 5230 : Optical Computing

COMP ENG 5510 : Fault-Tolerant Digital Systems

COMP ENG 5803 : Mathematical Logic I

COMP ENG 6210 : Digital Logic

In Workflow

- 1. RELECENG Chair
- 2. CCC Secretary
- 3. Engineering DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate Chair
- 9. Registrar
- 10. CAT entry
- 11. Peoplesoft

Approval Path

- 11/05/19 6:33 am Daryl Beetner (daryl): Approved for RELECENG Chair
- 2. 11/05/19 8:24 amBrittany Parnell(ershenb):Approved for CCC

COMP SCI 3800 : Introduction to Operating Systems
COMP SCI 3803 : Computer Organization
COMP SCI 5203 : Mathematical Logic I
ELEC ENG 3100 : Electronics I
ELEC ENG 3101 : Electronics I Laboratory
ELEC ENG 4096 : Electrical Engineering Senior Project I
ELEC ENG 5250 : Optical Computing
MATH 5154 : Mathematical Logic I
PHILOS 3254 : Symbolic Logic in Argumentation
PHILOS 4354 : Mathematical Logic I
Requested Fall 2020 2019
Effective Change

Effective Change

Date

- Department Electrical and Computer Engineering
- Discipline Computer Engineering (COMP ENG)

Course Number 2210

Title

Secretary

- 3. 11/18/19 8:35 am Stephen Raper (sraper): Approved for Engineering DSCC Chair
 4. 11/18/19 2:38 pm Brittany Parnoll
 - Brittany Parnell (ershenb): Approved for Pending CCC Agenda post
- 5. 11/19/19 2:43 pm Brittany Parnell (ershenb): Rollback to Pending CCC Agenda post for CCC Meeting
 - Agenda
- 6. 12/23/19 8:33 am
 Brittany Parnell
 (ershenb):
 Approved for
 Pending CCC
 Agenda post

History

- 1. Feb 9, 2015 by
 - stanleyj (649.1)
- 2. Feb 4, 2019 by
 - ershenb (649.2)

Abbreviated Course Title	Intro to Dig	ital Logic			
constructed, ar algebra, Karnau	nd analyzed. Top ugh maps, comb	s from which dig pics include binar pinational logic, c and sequential cir	y numbers, trut ligital componer	n tables, Boolean	
Prerequisites Accompanied b Engineering ma		11 for Computer	Engineering an	d Electrical	
Field Trip Statement					
Credit Hours Total: 3	LEC: 3	LAB: 0	IND: 0	RSD: 0	
Required for Majors	Yes				
Elective for Majors	No				

Justification for

change:

Comp Eng 2211 is a required laboratory course for Computer and Electrical Engineering majors. Out of department students are not required to take this laboratory course.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer Comments sraper (11/18/19 8:35 am): Revised prereq statement. ershenb (11/19/19 2:43 pm): Rollback: COMP ENG 2211 not approved yet through workflow(will put them on the same agenda).

Key: 649

Date Submitted: 11/22/19 10:26 am

Viewing: MATH 1110 : Mathematical Reasoning

and Modeling Introduction To Mathematical

Ideas

File: 120.1 Last edit: 11/25/19 4:05 pm Changes proposed by: prunnion

RequestedFall 2020 08/01/2014Effective ChangeDateDepartmentMathematics & StatisticsDisciplineMathematics (MATH)Course Number1110Title

In Workflow

- 1. RMATHEMA Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting
 - Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate Chair
- 9. Registrar
- 10. CAT entry
- 11. Peoplesoft

Approval Path

1. 11/22/19 11:18

am

vsam: Approved for RMATHEMA Chair

 2. 11/25/19 4:05 pm
 Brittany Parnell (ershenb):

Approved for CCC Secretary 3. 12/10/19 3:18 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair 4. 12/23/19 8:33 am Brittany Parnell (ershenb): Approved for Pending CCC Agenda post

Mathematical Reasoning and Modeling Introduction To Mathematical Ideas

Abbreviated	Mathematical Reasoning
Course Title	Introd To Math Ideas

Catalog

Description

A course for non-science majors, including liberal arts and education majors. Designed for non-STEM majors, this course provides a comprehensive overview A study of the reasoning skills required nature of mathematics and its relation to process, reflect upon, and apply quantitative information in making decisions. western culture, number systems, sets, functions, and selected topics from algebra, computer science and other areas of mathematics. Topics include ratios, rates, percentages, units, descriptive statistics, linear and exponential modeling, correlation, logic, and probability. Technology is emphasized.

Prerequisites

Entrance requirements. Two years high school mathematics.

Field Trip Statement

Credit Hours Total: 3	LEC: 3	LAB: 0	IND: 0	RSD: 0
Required for Majors	No			
Elective for Majors	No			

Justification for

change:

These changes are to better align the existing course with the Core42 and Missouri Mathematics Pathways standards. These changes will allow us to submit this course for DESE approval for certain education emphasis students. While our current description could be considered adequate for what we're doing, the new description is more informative to students as they consider this course.

Semesters

previously

offered as an

experimental

course

Co-Listed Courses:

Course Reviewer
Comments

Key: 120

Date Submitted: 11/21/19 10:56 am

Viewing: MUSIC 3252 : History and Analysis of

Music II

File: 1656.5 Last approved: 05/24/16 4:57 am Last edit: 12/11/19 9:55 am Changes proposed by: karmannc

Requested	Fall 2020 01/12/2016
Effective Change	
Date	
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	3252
Title	

In Workflow

- 1. RPHILOSO Chair
- 2. CCC Secretary
- 3. Arts & Humanities DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting
 - Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate Chair
- 9. Registrar
- 10. CAT entry
- 11. Peoplesoft

Approval Path

 1. 12/11/19 9:51 am Audra Merfeld-Langston (audram):

Approved for

RPHILOSO Chair

2. 12/11/19 9:55 am Brittany Parnell

(ershenb): Approved for CCC Secretary 3. 12/11/19 10:11 am Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair 4. 12/23/19 8:33 am Brittany Parnell (ershenb): Approved for

Pending CCC

Agenda post

History

1. May 24, 2016 by denises (1656.1)

History and Analysis of Music II

Abbreviated Hist & Analysis Mus II

Course Title

Catalog

Description

General survey of history of music from the 18th century to the present. Score reading required.

Prerequisites

Field Trip Statement

Required for No Majors Kernel Elective for No	Credit Hours Total: 3	LEC: 3	LAB: 0	IND: 0	RSD: 0	
	Required for	No				
iviajors	Elective for Majors	No				

Justification for

change:

Adding co-listed history course. Approved by Dr. Michael Bruening.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

History 3722 - Course Not Found

Course Reviewer

Comments

Key: 1656

Date Submitted: 12/09/19 2:34 pm

Viewing: PHYSICS 1119 : General Physics

Laboratory

File: 2009.5 Last approved: 05/06/16 3:34 am Last edit: 12/09/19 2:34 pm Changes proposed by: ershenb

Programs referencing this course <u>BIO SC-BS: Biological Sciences BS</u> <u>CHEM-BA: Chemistry BA</u> <u>CP ENG-BS: Computer Engineering BS</u>

Requested	Fall 2020 01/12/2016
Effective Change Date	
Department	Physics
Discipline	Physics (PHYSICS)
Course Number	1119
T :41 -	

Title

In Workflow

- 1. RPHYSICS Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate Chair
- 9. Registrar
- 10. CAT entry
- 11. Peoplesoft

Approval Path

- 1. 12/09/19 2:36 pm Thomas Vojta (vojtat): Approved for RPHYSICS Chair
- 12/11/19 8:50 am Brittany Parnell (ershenb): Approved for CCC

Secretary

- 3. 12/17/19 3:00 pm
 Katie Shannon
 (shannonk):
 Approved for
 Sciences DSCC
 Chair
- 4. 12/23/19 8:33 am
 Brittany Parnell
 (ershenb):
 Approved for
 Pending CCC
 Agenda post

History

1. May 6, 2016 by waddill (2009.1)

General Physics Laboratory

Abbreviated General Physics Lab

Course Title

Catalog Description Experiments relate	ed to topics stud	ied in Physics 11 :	L1. 1111 and Phy	/sics 1145.
Prerequisites Preceded or accor	npanied by <mark>eithe</mark>	r Physics 1111. 1	.111 or Physics 1	145.
Field Trip Statement				
Credit Hours Total: 1	LEC: 0	LAB: 1	IND: 0	RSD: 0
Required for	No			

Majors				
Elective for Majors	No			
iviajor3				

Justification for

change:

Currently, students enrolled in Physics 1145 also take the Physics 1119 Lab.We have submitted a CC form combining the lecture and lab into a single 4-hourPhysics 1145 course. The present CC form just removes the reference to Physics1145 from the description of Physics 1119.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer	
Comments	
ershenb (12/09/19 2:34 pm): Submitted per the request of Dr. Vojta for CourseLeaf	
technical issues.	
	k

Key: 2009

Date Submitted: 12/09/19 1:20 pm Viewing: PHYSICS 1145 : College Physics I

File: 284.1 Last edit: 12/09/19 1:20 pm Changes proposed by: waddill

Programs

referencing this

course

BIO SC-BS: Biological Sciences BS

Other Courses

referencing this

course

In The Catalog Description:

PHYSICS 1119 : General Physics Laboratory

In The Prerequisites:

PHYSICS 1119 : General Physics Laboratory

PHYSICS 2145 : College Physics II

Requested Effective Change Date	Fall 2020 08/14/2018
Department	Physics
Discipline	Physics (PHYSICS)
Course Number	1145
Title	

In Workflow

- 1. RPHYSICS Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate Chair
- 9. Registrar
- 10. CAT entry
- 11. Peoplesoft

Approval Path

- 1. 12/09/19 1:22 pm Thomas Vojta (vojtat): Approved for RPHYSICS Chair
- 2. 12/11/19 8:50 amBrittany Parnell(ershenb):Approved for CCC

Secretary

3. 12/17/19 3:00 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 12/23/19 8:33 am Brittany Parnell

(ershenb):

Approved for

Pending CCC

Agenda post

College Physics I

Abbreviated College Physics I Course Title

Catalog

Description

An introduction to the ideas of physics, including mechanics, heat, and sound.

Prerequisites

Math 1160 and either of Math 1120 or Math 1140.

Field Trip

Statement

Credit Hours Total: 4 3	LEC: 3	LAB: 1 0	IND: 0	RSD: 0
Required for Majors	No			
Elective for Majors	No			

Justification for

change:

In the current version of 1145 students must take a separate lab course (Physics 1119). In the lab, students perform twice as many labs as students who take the introductory physics for engineers (Physics 1135). This change combines lecture and lab (1145 and 1119 respectively) into a single 4 hour course.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer Comments

Key: 284

Date Submitted: 12/09/19 1:24 pm

Viewing: PHYSICS 2119 : General Physics

Laboratory

File: 1738.5 Last approved: 05/06/16 3:33 am Last edit: 12/09/19 2:32 pm Changes proposed by: waddill

Programs referencing this course <u>BIO SC-BS: Biological Sciences BS</u> <u>CHEM-BA: Chemistry BA</u> <u>CP ENG-BS: Computer Engineering BS</u>

Requested Effective Change Date	Fall 2020 05/30/2016
Department	Physics
Discipline	Physics (PHYSICS)
Course Number	2119
Title	

In Workflow

- 1. RPHYSICS Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate Chair
- 9. Registrar
- 10. CAT entry
- 11. Peoplesoft

Approval Path

- 1. 12/09/19 1:25 pm Thomas Vojta (vojtat): Approved for RPHYSICS Chair
- 12/11/19 8:50 am Brittany Parnell (ershenb): Approved for CCC

Secretary

- 3. 12/17/19 3:01 pm
 Katie Shannon
 (shannonk):
 Approved for
 Sciences DSCC
 Chair
- 4. 12/23/19 8:33 am
 Brittany Parnell
 (ershenb):
 Approved for
 Pending CCC
 Agenda post

History

1. May 6, 2016 by waddill (1738.1)

General Physics Laboratory

Abbreviated General Physics Lab

Course Title

Catalog Description Experiments relate	ed to topics stud	ied in Physics 21 1	L1. 2111 and Phy	/sics 2145.
Prerequisites				
Preceded or accor	npanied by <mark>eithe</mark>	r Physics 2111. 2	111 or Physics 2	145.
Field Trip Statement				
Credit Hours Total: 1	LEC: 0	LAB: 1	IND: 0	RSD: 0
Required for	No			

Majors Elective for Majors	No	
submitted a chang	s required for both Physics 2111 and Physics 2145. We have ge for Physics 2145 that combines lecture and lab into a single is no longer required for Physics 2145. Physics 2145	
Semesters previously offered as an experimental course		
Co-Listed Courses:		
Course Reviewer Comments ershenb (12/09/1	9 2:32 pm): removed "either" from prereq per Dr. Vojta.	ey: 1738

Date Submitted: 12/09/19 1:21 pm

Viewing: PHYSICS 2145 : College Physics II

File: 1971.1

Last edit: 12/09/19 1:21 pm

Changes proposed by: waddill

Programs referencing this

reletencing

course

BIO SC-BS: Biological Sciences BS

Other Courses

referencing this

course

In The Catalog Description:

PHYSICS 2119 : General Physics Laboratory

In The Prerequisites:

PHYSICS 2119 : General Physics Laboratory

Requested Effective Change Date	Fall 2020 08/14/2018
Department	Physics
Discipline	Physics (PHYSICS)
Course Number	2145
Title	

In Workflow

- 1. RPHYSICS Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate Chair
- 9. Registrar
- 10. CAT entry
- 11. Peoplesoft

Approval Path

- 1. 12/09/19 1:22 pm Thomas Vojta (vojtat): Approved for RPHYSICS Chair
- 2. 12/11/19 8:51 amBrittany Parnell(ershenb):Approved for CCC

Secretary

3. 12/17/19 3:01 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
4. 12/23/19 8:33 am Brittany Parnell

(ershenb):

Approved for

Pending CCC

Agenda post

College Physics II

Abbreviated College Physics II Course Title

Catalog

Description

An introduction to the ideas of physics, including electricity, magnetism, and light.

Prerequisites Math 1160, Physi	cs 1145.			
Field Trip Statement				
Credit Hours Total: 4 3	LEC: 3	LAB: 1 0	IND: 0	RSD: 0
Required for Majors	No			
Elective for Majors	No			

Justification for

change:

In the current version of 2145 students must take a separate lab course (Physics 2119). In the lab, students perform twice as many labs as students who take the introductory physics for engineers (Physics 2135). This change combines lecture and lab (2145 and 2119 respectively) into a single 4 hour course.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer Comments

Key: 1971

Date Submitted: 11/22/19 3:41 pm

Viewing: STAT 3425 5425 : Introduction to

Biostatistics

Title

File: 652.3 Last approved: 01/13/17 3:15 am Last edit: 12/10/19 3:19 pm

Changes proposed by: prunnion

Requested	Fall 2020 08/14/2017
Effective Change	
Date	
Department	Mathematics & Statistics
Discipline	Statistics (STAT)
Course Number	3425 5425

In Workflow

- 1. RMATHEMA Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting
 - Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate Chair
- 9. Registrar
- 10. CAT entry
- 11. Peoplesoft

Approval Path

- 1. 11/22/19 8:17 pm vsam: Approved for RMATHEMA Chair
- 2. 11/25/19 4:18 pm Brittany Parnell (ershenb): Approved for CCC

Secretary

- 3. 12/10/19 3:19 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
 4. 12/22/10 8:22 pm
- 4. 12/23/19 8:33 am Brittany Parnell (ershenb): Approved for Pending CCC Agenda post

History

1. Jan 13, 2017 by imorgan (652.1)

Introduction to Biostatistics

AbbreviatedIntro Introduction toCourse TitleBiostatistics

Cata	lo	5	
-			

Description

Introduction to common biostatistical methods for designing research studies, collecting and analyzing data, with application to problems originating from the biological, environmental, and health sciences. Topics include randomization, means comparisons, ANOVA, regression, and analysis of count data.

Prerequisites

A grade of "C" or better in Math 1120, Math 1140, Math 1208, Math 1212, or Math 1214.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 1	IND: 0	RSD: 0
Total: 4				
Required for	No			
Majors				
Elective for	Yes			
Majors				

Justification for

change:

The biology department requires this course for their BS program. In order to align this course better within their curriculum, they would prefer for it to be a 3000 level course. This change would also better align with how the course is being taught.

Semesters

previously

offered as an

experimental

course

Co-Listed

Courses:

Course Reviewer Comments

Key: 652

Program Change Request

Date Submitted: 10/30/19 4:22 pm

Viewing: HISTORY-BS : Bachelor of Science in

History

File: 242.10

Last approved: 12/01/16 3:47 pm

Last edit: 10/31/19 10:46 am

Changes proposed by: dewittp

Catalog Pages Using this Program History

Start Term

Fall 2020 08/14/2017 Program Code HISTORY-BS Department History and Political Science Title Bachelor of Science in History

Program Requirements and Description

In Workflow

- 1. RHISTORY Chair
- 2. CCC Secretary
- 3. Arts & Humanities DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate Chair
- 9. Registrar
- Kristy Giacomelli-Feys

Approval Path

- 1. 10/31/19 8:50 am Michael Bruening (bruening): Approved for RHISTORY Chair
- 2. 10/31/19 10:49 am Brittany Parnell (ershenb): Approved for CCC Secretary
- 3. 10/31/19 2:55 pm Petra Dewitt (dewittp): Approved for Arts & Humanities DSCC Chair
- 4. 11/18/19 2:38 pm Brittany Parnell (ershenb): Approved for Pending CCC Agenda post

History

1. Jun 27, 2016 by Petra Dewitt

(dewittp) 2. Jul 27, 2016 by Crystal Wilson (wilsoncry) 3. Dec 1, 2016 by Petra Dewitt (dewittp)

Bachelor of Science History

Students must take a minimum of 120 hours for a Bachelor of Science degree in history, and obtain a grade point average of 2.0. These requirements for the B.S. are in addition to credit received for basic ROTC.

The B.S. in history requires the following:

1. <u>ENGLISH 1120</u> ENGLISH 1120 (entering students will normally take <u>ENGLISH 1120</u> ENGLISH 1120 within their first year of study) and one other writing intensive course outside their major, which may include <u>ENGLISH 1160</u>, <u>ENGLISH 1170</u>, <u>ENGLISH 1170</u>, <u>ENGLISH 1160</u>, <u>ENGLISH 1170</u>, or <u>ENGLISH 3560</u>. (6 hours)

2. Math and Sciences. The general requirements for a B.S. call for at least 18 hours in biological, physical (chemistry, geology, physics), and mathematical (mathematics, statistics, computer science, and information science and technology) sciences. The B.S. in history requires at least one course from each of the biological and physical sciences, one lab, and at least one math course at the level of college algebra or higher. In addition to these requirements, students may count <u>STAT 1115</u>, <u>STAT 1115</u>, up to 3 hours from psychology classes (<u>PSYCH 2200</u> (<u>PSYCH 2200</u> preferred), and up to 3 hours from history of science and technology classes (<u>HISTORY 2510</u>, HISTORY 3510, or <u>HISTORY 3530</u>), <u>HISTORY 2530</u>), but may not use them to satisfy another requirement. (18 hours)

3. Humanities. Students must take 12 hours in humanities other than history with at least one course from literature, philosophy, and fine arts (Art, Music, or Theater Appreciation). Students may take courses in language and humanities other than history to meet the 12 hours requirement. (12 hours)

4. Social Sciences. Students must take 12 hours in social sciences. Students must take <u>POL SCI 1200</u> POL SCI 1200 and at least one course in two from the three areas: economics, political science, and psychology. At the discretion of the major adviser, students may transfer up to 3 hours of Sociology to meet the 12 hours requirement. (12 hours)

5. History. Students must take **36** 37 hours in required history courses, including <u>HISTORY 1100</u>, <u>HISTORY 1200</u>, <u>HISTORY 1300</u>, <u>HISTORY 1300</u>, <u>HISTORY 2791</u>, <u>HISTORY 1790</u>, <u>HISTORY 1100</u>, <u>HISTORY 1200</u>, <u>HISTORY 1300</u>, <u>HISTORY 1310</u>, and <u>HISTORY 4790</u> (18 <u>HISTORY 2790 (16</u> hours) and at least 18 21 hours in history electives, including at least 6 hours in American history and at least 6 hours in European history. Nine of these **18** 21 hours of history electives must be at or above the 3000 level. The student must earn a grade of C or better in these required courses. (**36** (37 hours)

6. Electives Credit. Each student will elect sufficient additional courses to complete a minimum of 120 credit hours, which may include up to 12 hours in engineering courses at the discretion of the major adviser. At least 9 hours of these electives must be at the 3000 or above level, although substitutions may be permitted at the discretion of the major adviser. All electives must accumulate to at least a 2.0 grade point average.

Justification for request

The history department decided to change how it taught historiography because students need more training in writing and research methods to become true professionals. Instead of having one sophomore-level course that combined research methods with historiography (the history of history) and demanded an immense workload that few students could maintain, the department decided to divide the course into two required courses.

Supporting Documents

Course Reviewer Comments

bruening (10/31/19 8:50 am): In point 5, I changed "Nine of these 21 hours of history electives..." to "Nine of these 18 hours of history electives..."

ershenb (10/31/19 10:40 am): formatting

ershenb (10/31/19 10:46 am): In requirement 2, corrected History 2530 to its current number History 3530.

Key: 242

Program Change Request

Date Submitted: 11/20/19 11:26 am

Viewing: PHYSIC-BS : Physics BS

File: 115.37

Last approved: 06/14/19 2:14 pm

Last edit: 11/20/19 1:43 pm

Changes proposed by: vojtat

Catalog Pages Using this Program Physics

Start Term

Fall **2020 <mark>2019</mark> Program Code**

PHYSIC-BS

Department

Physics

Title

Physics BS

Program Requirements and Description

In Workflow

- 1. RPHYSICS Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. FS Meeting Agenda
- 8. Faculty Senate
- Chair
- 9. Registrar
- Kristy Giacomelli-Feys

Approval Path

- 1. 11/20/19 11:27 am Thomas Vojta (vojtat): Approved for RPHYSICS Chair
- 2. 11/20/19 1:43 pm Brittany Parnell (ershenb): Approved for CCC Secretary
- 3. 12/10/19 3:18 pm Katie Shannon (shannonk): Approved for Sciences DSCC Chair
- 4. 12/23/19 8:33 am Brittany Parnell (ershenb): Approved for Pending CCC Agenda post

History

1. May 6, 2014 by waddill

- 2. Jul 21, 2015 by pantaleoa
- 3. Jun 27, 2016 by waddill
- 4. Jun 18, 2018 by Pamela Crabtree (crabtree)
- 5. Jun 26, 2018 by Crystal Wilson (wilsoncry)
- 6. Jun 14, 2019 by Thomas Vojta (vojtat)

Bachelor of Science Physics

A minimum of 128 credit hours is required for a bachelor of science degree in physics and an average of at least two grade points per credit hour must be obtained. These requirements for the B.S. degree are in addition to credit received for algebra, trigonometry, and basic ROTC.

The physics curriculum requires twelve semester hours in humanities, exclusive of foreign language, and must include <u>ENGLISH 1160</u> or <u>ENGLISH 3560</u>. A minimum of nine semester hours is required in social sciences, including either <u>HISTORY 1300</u>, <u>HISTORY 1310</u>, <u>HISTORY 1200</u>, or <u>POL SCI 1200</u>. Specific requirements for the bachelor degree are outlined in the sample program listed below

Freshman Year			
First Semester	Credits	Second Semester	Credits
<u>CHEM 1310</u>	4	CHEM 1320	3
<u>CHEM 1319</u>	1	<u>HISTORY 1200,</u> or <u>1300,</u> or <u>1310</u> , or <u>POL SCI</u> <u>1200</u>	3
<u>CHEM 1100</u>	1	PHYSICS 1135	4
ENGLISH 1120	3	MATH 1215	4
PHYSICS 1101	1	Electives ¹	2
MATH 1214	4		
	14		16
Sophomore Year			
First Semester	Credits	Second Semester	Credits
ENGLISH 1160	3	<u>MATH 3304</u>	3
MATH 2222	4	PHYSICS 2311 or 2305	3
COMP SCI 1570 & COMP SCI 1580 ⁴	4	PHYSICS 2129	3
Elective ¹	3	PHYSICS 2401	3

COMP SCI 1500 or 1972 and 1982	3	Elective ¹	3
PHYSICS 2135	4		
	17		15
Junior Year			
First Semester	Credits	Second Semester	Credits
PHYSICS 3201	3	PHYSICS 3211	3
PHYSICS 3119	3	PHYSICS 3129	3
PHYSICS 3311	3	Math/Stat Elective ²	3
Math/Stat Elective ²	3	Electives ¹	7
Electives ¹	6		
	18		16
Senior Year			
First Semester	Credits	Second Semester	Credits
PHYSICS 4211	3	PHYSICS 4311	3
PHYSICS 4301	3	Elective-Humanities (3000 level) ¹	3
Physics Elective ³	3	Physics Elective ³	3
Electives ¹	7	Electives ¹	7
	16	•	16
Total Credits: 128			

Note: The minimum credit hours required for a bachelor of science in physics is 128 hours. No more than two of the required physics and mathematics courses with a grade of "D" may be used to meet graduation requirements. Upon petition to and approval by the physics faculty, three semester hours of advanced ROTC (military science or aerospace credit studies) credit can be counted as elective credit to meet requirements for graduation.

- ¹ Electives, in addition to the math/stat electives² and Physics electives³, shall include six hours of social studies and nine hours of humanities, at least three of which must be literature and at least three of which must be at the 3000 level or above not including Special Problems courses (PHILOS 4345 recommended). 19 hours of free electives may be used to develop an emphasis area. 18 hours of elective credit shall be in courses at the 3000 level or above.
- ² Six hours of mathematics or statistics beyond <u>MATH 3304</u> are required. <u>MATH 3108</u>, <u>MATH 5222</u>, <u>MATH 5325</u>, or <u>MATH 5351</u> are recommended.
- ³ In addition to the specific physics courses listed (<u>PHYSICS 3311, PHYSICS 3201, PHYSICS 4311, PHYSICS 4211,</u> <u>PHYSICS 3119, PHYSICS 3129, and PHYSICS 4301</u>) two other physics 3000 level or higher courses are required.
- ⁴ Alternatively students may substitute the combination COMP SCI 1970 & COMP SCI 1980 or the combination COMP SCI 1971 & COMP SCI 1981 for COMP SCI 1570 & COMP SCI 1580; note that this will require one less credit hour than the option listed in the sample schedule.

Emphasis in Secondary Education

Students may develop an emphasis area in secondary education that will allow them to teach physics in grades 9-12 in Missouri. Missouri. Please contact the Department of Teacher Education for a complete list of requirements. Please contact the Department of

Teacher Education for a complete list of requirements.

a. Professional requirements courses:

EDUC 1040	Perspectives In Education	2
EDUC 1174	School Organization and Administration For Teachers	2
EDUC 3216	Teaching Reading in Content Area	3
ENGLISH 3170	Teaching And Supervising Reading and Writing	3
EDUC 3280	Teaching Methods and Skills in Content Areas	6
EDUC 4298	Student Teaching Seminar	1
PSYCH 2300	Educational Psychology	3
or <u>EDUC 2102</u>	Educational Psychology	
PSYCH 3310	Developmental Psychology	3
PSYCH 4310	Psychology Of The Exceptional Child	3
or <u>EDUC 4310</u>	Psychology Of The Exceptional Child	

Fifteen of these credit hours may be used to substitute for six hours of mathematics electives, six hours of physics electives, and three hours of computer science courses.

b. Clinical experience courses:

EDUC 1104	Teacher Field Experience I	2
EDUC 1164	Teacher Field Experience II	2
EDUC 4299	Student Teaching	12

c. Take these additional courses:

A 3 hour Art/Music/Theater elective		3
HISTORY 3530	History of Science	3
PHYSICS 1605	Environmental Physics I	3
BIO SCI 1113	General Biology	3
PSYCH 1101	General Psychology	3
POL SCI 1200	American Government	3
<u>SP&M S 1185</u>	Principles Of Speech	3

d. Complete the requirements for teacher certification listed in this catalog.

Justification for request

Changed Comp Sci requirement in response to changes in Comp Sci offerings. Allow substituting Physics 2311 by 2305 to give our majors the opportunity to take Modern Physics either in the fall or in the spring. Adjusted elective hours to keep program at 128 credit hours. Supporting Documents

Course Reviewer Comments

ershenb (11/20/19 1:43 pm): updated start term to fall 2020

New Experimental Course Proposal

Date Submitted: 12/05/19 7:34 pm

Viewing: BIO SCI 4001.006 : General Virology

Lab

File: 4685		
Last edit: 12/23/19 8:20 am		
Changes proposed by	r: djwesten	
Requested Effective Change Date	Fall 2020	
Department	Biological Sciences	
Discipline	Biological Sciences (BIO SCI)	
Course Number	4001	
Topic ID	006	
Experimental Title		

In Workflow

- 1. RBIOLSCI Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. CAT entry
- 8. Registrar

Approval Path

- 1. 12/11/19 1:55 pm David Duvernell (duvernelld): Approved for RBIOLSCI Chair
- 2. 12/11/19 1:58 pmBrittany Parnell(ershenb):Approved for CCC
 - Secretary
- 3. 12/17/19 3:00 pmKatie Shannon(shannonk):Approved for

	Sciences DSCC
	Chair
4.	12/23/19 8:33 am
	Brittany Parnell
	(ershenb):
	Approved for
	Pending CCC
	Agenda post

General Virology Lab Experimental General Virology Lab Abbreviated Course Title Instructors Dave Westenberg Experimental Catalog Description General introduction to the techniques used for the isolation and characterization of viruses with a focus on bacterial viruses. Prerequisites Preceded or accompanied by Bio Sci 4493. Field Trip Statement Credit Hours LEC: 0 LAB: 1 IND: 0 RSD: 0 Total: 0

Justification for

new course:

To provide an opportunity for students to gain hands-on experience working with viruses to complement the general virology lecture course. The bacteriophages used are non-infectious to humans.

Semester(s)

previously taught

New course

Co-Listed

Courses:

Comments

Key: 4685

New Experimental Course Proposal

Date Submitted: 12/06/19 10:12 am

Viewing: MATH 5001.003 : Mathematics of

Medical Imaging

File: 4686

Last edit: 12/23/19 8:29 am

Changes proposed by: prunnion

Requested Fall 2020

Effective Change

Date

Department Mathematics & Statistics

Discipline Mathematics (MATH)

Course Number 5001

Topic ID 003

Experimental

Title

In Workflow

- 1. RMATHEMA Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting

Agenda

- 6. Campus Curricula Committee Chair
- 7. CAT entry
- 8. Registrar

Approval Path

1. 12/06/19 11:22 am

vsam: Approved for RMATHEMA Chair

- 2. 12/10/19 3:07 pmBrittany Parnell(ershenb):Approved for CCCSecretary
- 3. 12/17/19 3:00 pm
 Katie Shannon
 (shannonk):

Approved for Sciences DSCC Chair 4. 12/23/19 8:33 am Brittany Parnell (ershenb): Approved for Pending CCC Agenda post

					Agenua post
Mathematics of	Medical Imagi	ng			
Experimental Abbreviated Course Title	Math Medi	cal Imaging			
Instructors	Murphy				
reconstruct ima	ges in medical pling theory, di	ical techniques u imaging. Topics i gital filtering, noi ay tomography.	nclude the Fouri	er transform,	Radon
Prerequisites Math 2222, Mat	th 3108.				
Field Trip Statement					
Credit Hours Total: 3	LEC: 3	LAB: 0	IND: 0	RSD: 0	

Justification for

new course:

This course leverages the background and expertise of our faculty to explore new

and important topics. This course should attract a broad range of students from around campus.	
emester(s)	
reviously taught	
o-Listed	
ourses:	
ourse Reviewer	
comments	

Key: 4686

New Experimental Course Proposal

Date Submitted: 11/21/19 8:38 am

Viewing: PHYSICS 5001.001 : Introduction to

Atomic, Molecular, and Optical Physics

File: 4682

Last edit: 12/23/19 8:32 am

Changes proposed by: vojtat

Requested	Fall 2020
Effective Change	
Date	
Department	Physics
Discipline	Physics (PHYSICS)
Course Number	5001
Topic ID	001
Experimental	

Title

In Workflow

- 1. RPHYSICS Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. CAT entry
- 8. Registrar

Approval Path

- 1. 11/21/19 8:41 am Thomas Vojta (vojtat): Approved for RPHYSICS Chair
- 2. 12/03/19 1:45 pmBrittany Parnell(ershenb):Approved for CCC
 - Secretary
- 3. 12/17/19 3:01 pmKatie Shannon(shannonk):Approved for

Sciences DSCC Chair 4. 12/23/19 8:33 am Brittany Parnell (ershenb): Approved for Pending CCC Agenda post

Introduction to Atomic, Molecular, and Optical Physics

Experimental Abbreviated Course Title	AMO Physics				
Instructors	Dr. A.T. Le				
Experimental Catalog Description Concepts and methods of quantum mechanics applied to atomic and molecular structure, collisions, and interaction with lasers. Topics: one-electron atoms and interaction with electromagnetic waves, Hartree-Fock equations, electron configuration, structures of diatomic molecules, potential scattering, phase-shift, Born approximation, photoionization					
Prerequisites Physics 2305 or P	hysics 2311; pred	ceded or accor	mpanied by Phys	sics 4301.	
Field Trip Statement					
Credit Hours Total: 3	LEC: 3	LAB: 0	IND: 0	RSD: 0	

Justification for

new course:

Atomic, molecular, and optical (AMO) physics is a major field of physics and one of

the research focus areas in the Physics Department. This course will provide seniors and beginning graduate students basic concepts and theoretical tools needed for their research in AMO physics. Students in other focus areas such as condensed matter physics and optics will benefit as well.

Semester(s)	
previously taught	
none	
Co-Listed	
Courses:	
Course Reviewer	
Comments	

Key: 4682

New Experimental Course Proposal

Date Submitted: 11/19/19 2:19 pm

Viewing: **PSYCH 3001.004 : Rationality:**

Scientific Thinking in Everyday Life

File: 4681

Last edit: 12/16/19 10:04 am

Changes proposed by: burnsde

Requested Fall 2020 Effective Change

Date

Department Psychological Science

Discipline Psychology (PSYCH)

Course Number 3001

Topic ID 004

Experimental

Title

In Workflow

- 1. RPSYCHOL Chair
- 2. CCC Secretary
- 3. Social Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting Agenda
- 6. Campus Curricula Committee Chair
- 7. CAT entry
- 8. Registrar

Approval Path

- 12/11/19 1:05 pm Susan Murray (murray): Approved for RPSYCHOL Chair
- 2. 12/11/19 1:26 pmBrittany Parnell(ershenb):Approved for CCC
 - Secretary
- 3. 12/16/19 8:15 amMichael Hilgers(hilgers):Approved for

Social Sciences DSCC Chair 4. 12/23/19 8:33 am Brittany Parnell (ershenb): Approved for Pending CCC Agenda post

Rationality: Scientific Thinking in Everyday Life						
Experimental Abbreviated Course Title	Rationality					
Instructors	Dr. Devin Burns					
Experimental Catalog Description The goal of this cla better understand calibrate confidence argumentation and	human decision ce judgments, re	making and cult	ivate clearer thin	king. We will		
Prerequisites Psych 1101.						
Field Trip Statement						
Credit Hours Total: 3	LEC: 3	LAB: 0	IND: 0	RSD: 0		

Justification for

new course:

This course gives students to opportunity to take their interest in psychology and apply it more directly to their lives in a way that is seldom done in other courses.

Semester(s)	
previously taught	
Co-Listed	
Courses:	
Course Reviewer	
Comments	
	Key: 4681

New Experimental Course Proposal

Date Submitted: 11/21/19 4:13 pm

Viewing: STAT 2001.001 : Introductory Applied

Statistical Methods

File: 4683 Last edit: 12/16/19 10:08 am Changes proposed by: prunnion

Requested Fall 2020

Effective Change

Date

Department Mathematics & Statistics

Discipline Statistics (STAT)

Course Number 2001

Topic ID 001

Experimental

Title

In Workflow

- 1. RMATHEMA Chair
- 2. CCC Secretary
- 3. Sciences DSCC Chair
- 4. Pending CCC Agenda post
- 5. CCC Meeting

Agenda

- 6. Campus Curricula Committee Chair
- 7. CAT entry
- 8. Registrar

Approval Path

- 1. 11/21/19 5:51 pm vsam: Approved for RMATHEMA Chair
- 2. 11/25/19 4:16 pmBrittany Parnell(ershenb):Approved for CCC
 - Secretary
- 3. 12/10/19 3:18 pmKatie Shannon(shannonk):Approved for

Sciences DSCC Chair 4. 12/23/19 8:33 am Brittany Parnell (ershenb): Approved for Pending CCC Agenda post

Introductory Applied Statistical Methods

Experimental Abbreviated Course Title	Intro Applied S	tat				
Instructors	Коор					
Experimental Catalog Description An introduction to applied statistical methods, with applications in psychology and the social sciences, including design of experiments, sampling, probability, descriptive statistics, graphical displays, mean comparison, ANOVA, regression, and analysis of count data. Software will be emphasized. Not intended for engineering and computer science students.						
Prerequisites						
Field Trip Statement						
Credit Hours Total: 4	LEC: 3	LAB: 1	IND: 0	RSD: 0		

Justification for

new course:

This course is designed to meet the needs of psychology majors, providing students

training in statistical methodologies and applications relevant to their discipline. The topics covered will lay the foundations for further studies in research methods in psychological and related sciences. The course includes training in the use of open-source statistical software to conduct analytical techniques learned in class.

Semester(s) previously taught

Co-Listed Courses:

Course Reviewer Comments

Key: 4683

2019-2020 CCC Calendar



Missouri University of Science and Technology

Formerly University of Missouri-Rolla

Other CCC meeting not listed is on Wed, Dec 4, 2019

9:00am – 10:30am in Bertelsmeyer 110H

CCC INFORMATION	Department submission to Registrar Fridays	DSCC submission to Registrar Fridays	CCC Meeting Wednesdays	Faculty Senate Meeting Thursdays
EC forms for Fall 2019	July 12, 2019	July 26, 2019	August 14, 2019	September 26, 2019
Affecting CC forms for Spring 2020	August 16,2019	August 30, 2019	October 2, 2019	October 17, 2019
Non-affecting CC forms for Spring 2020	September 20, 2019	October 4, 2019	October 30, 2019	November 21, 2019
EC forms for Spring 2020	November 29, 2019	December 13, 2019	January 8, 2020	February 20, 2020
Affecting CC forms for Summer 2020 & Fall 2020	December 27, 2019	January 10, 2020	February 5, 2020 <i>March 4* (if needed)</i>	February 20, 2020 March 19, 2020
Non-affecting CC forms for Summer 2020	February 21, 2020	March 6, 2020	April 1, 2020	April 16, 2020
EC forms for Summer 2020	April 3, 2020	April 17, 2020	May 6, 2020	June 11, 2020
DC forms & non-affecting CC forms for Fall 2020	April 3, 2020	April 17, 2020	May 6, 2020	June 11, 2020
EC forms for Fall 2020	July 10, 2020	July 24, 2020	August 12, 2020	TBD

Official dates for Spring 2020 CCC meetings will be determined at a later date.

Minor Creation Policy Ad Hoc Committee Report

Introduction

The purpose for the Experimental Course (EC) process is to allow for development of modern degrees via new course content but also to help determine marketability and viability/cost effectiveness of the new courses. New or substantially different degree programs are subject to degree viability justification and approval by state agencies. New course creation can skip the EC process by making the course to be required within a degree program. Minor and certificate programs are useful marketing tools that exemplify uniqueness and value of the S&T campus to attract students but are elective and supportive to a program of study, not degree programs in their own right.

Course viability is subject to the Chancellor Policy Memo II-30, as well as the respective policies of each college. While course enrollments of courses being developed within the EC process are more lenient than permanently numbered courses, it is expected that new courses with permanent numbers will meet viability policies. Minors are commonly created for the purposes specified above as an extension of a degree program, having required courses in common, which has no additional program cost since the courses are populated as required parts of the degree program. As such, minors created from degree programs are encouraged. Departments can choose to skip the EC process and create a new permanent course, e.g., when creating a minor, emphasis, or certificate, in addition to courses that are also to be required within a degree program.

Certificates are to undergo regular curriculum approval processes, subject to the following:

Undergraduate <u>and graduate</u> certificates must have one primary owner (i.e., degree program) that does not preclude co-listing and must consist of currently offered or already approved (i.e., hard numbered) courses. Experimental courses may not be included as a part of a proposed certificate program of study. Proposed certificate programs, once approved, shall not allow substitute courses except in extenuating circumstances, <u>excluding experimental courses</u>. Such extenuating circumstances must be approved by the associated Dean of the College in which the certificate program resides or of Graduate Studies for graduate certificates. Approved certificates shall become effective in the Fall Semester of an academic year. Certificates already approved or in approval processes prior to creation of this policy shall be grandfathered as approved under their existing processes but any future changes to those or later certificates must follow the regular curriculum approval system/processes.

Proposed Certificate programs of study must be submitted to the Missouri Department of Higher Education (MDHE) for approval. Certificate proposals are to be submitted through the campus curriculum approval process in parallel with an MDHE submittal after approval by the associated Dean, and can be approved by faculty senate and become a Certificate subject to MDHE approval. The action of MDHE shall be reported by the CCC at the FS meeting following MDHE approval or rejection of the Certificate.after CBHE approval and notification to the Provost from UM System. Complete details on the undergraduate certificate process can be viewed on the Campus Curriculum website on the Registrars home page. Details for the graduate certificate process can be viewed under Graduate Certificate Programs on the Office of Graduate Studies webpage.

Minor or Certificate with Permanent Course Creation

The goal is to underscore the excellence available in academic learning on campus but to not maintain those that do not attract students. Each degree program is allowed one minor or certificate program that

requires no student population justification per year, having been ostensibly created from required courses of their degree program, but departments may create as many other minors or certificates as are reasonably populated. All current minor and certificate programs are included in any counting of minors and certificates that are not justified by population.

Minors or certificates can be used as a reason to create new classes that bypass the EC process provided there is a compelling reason for their creation. The campus curriculum committee (CCC) will recommend to the Senate those that are deemed compelling. All proposed permanent courses, those proposing non-experimental catalog numbers, must be required in the minor or certificate. No more than 6 credit hours of new permanent courses per year that bypass the EC process are allowed; any additional course credit hours bypassing the EC process must be well-justified.

Course Purging Policy

To avoid simply a bypassing of the EC process, minors and certificates and their respective courses shall be evaluated for number of students completing said minor and courses at a period of 5 years and assessed against the appropriate campus policy(ies). Minors and certificates and their courses required within the minor or certificate not meeting those policies are to be deactivated along with the new courses that were created outside the EC process when the minor or certificate was created unless the course has been taught successfully within the last 5 years.

Courses not taught are routinely purged from the catalog about every 10 years. At the 10 year review, any required courses for a degree program, minor, or certificate but having not been taught successfully during the last 10 years will be assessed by the campus curriculum committee for deactivation, along with the degree program, minor, or certificate requiring that course.