

Green Hall, 35 Campus Avenue, Kingston, RI 02881 USA p: 401.874.2616

Serial Number #18-19-17B

TO: President David Dooley

THE

UNIVERSITY

OF RHODE ISLAND

FROM: Hillary Leonard, Chairperson of the Faculty Senate

1. The attached BILL titled, the Curriculum and Standards Committee Report #2018-19-8: Curricular Changes, is forwarded for your consideration.

d.

- 2. This BILL was adopted by vote of the Faculty Senate on February 21, 2019.
- 3. After considering this bill, will you please indicate your approval or disapproval. Return the original, completing the appropriate endorsement below.
- 4. In accordance with Section 10, paragraph 4 of the Senate's By-Laws, this bill will become effective March 14, 2019, three weeks after Senate approval, unless: (1) specific dates for implementation are written into the bill; (2) you return it disapproved; or (3) the University Faculty petitions for a referendum.

Hillary Leonard Chairperson of the Faculty Senate

February 21, 2019

ENDORSEMENT

TO: Chairperson of the Faculty Senate

FROM: President of the University

a. Approved $\underline{\mathcal{V}}$.

- b. Approved subject to Notice of the Council on Postsecondary Education _____.
- c. Disapproved ____.

Signature of

5.12.17

(date)

THE UNIVERSITY OF RHODE ISLAND





UNIVERSITY OF RHODE ISLAND FACULTY SENATE February 21, 2019

Faculty Senate Curriculum and Standards Committee Report 2018-2019-8

At the February 7, 2019 meeting of the Curriculum and Standards Committee, the following matters were considered and are now presented to the Faculty Senate.

SECTION II Curricular Matters Which Require Confirmation by the Faculty Senate

PROGRAM CHANGES:

COLLEGE OF ARTS & SCIENCES:

Department of Computer Science and Statistics:

Data Science major in the BS and BA degrees, Minor in Data Science: (Appendix A)

The BA DSP students should be permitted to choose among MTH 180, MTH 131, and MTH 141 as their Mathematics requirement and prerequisite to linear algebra. This adds MTH 180 to the list of options.
The BA and BS DSP students should be permitted to take CSC 399 or CSC 499 or STA/DSP 490 as their internship or practical experience. This adds CSC 399 to the list.

• Change the writing requirement options as follows: Drop HPR 112 and replace it with HPR 142. We have consulted with the honors program; HPR 112 is likely to be retired, and honors students are currently advised into HPR 142. In addition, add WRT 227 as another choice for fulfilling the writing requirement. This would permit students who are double majoring in both Business and Data Science to take only one writing class. The new writing requirement would now be: WRT 201 or WRT 227 or HPR 142.

• Add BIO 181 G to the ethics requirement. This class is very similar to the current requirement, CSC 320 and covers topics of high importance to data scientists. The ethics requirement would be: CSC 320 (4 credits) or BIO 181 G (3 credits)

• Remove BIO 439 as an upper level option in the BA and BS majors.

Department of Music:

Bachelor of Music degrees: (Appendix B)

The changes proposed revise piano proficiency requirements for all BOM degrees. No changes in credits will occur as a result of the revision of the policy. The changes will streamline the requirement and make it more equitable for all students across programs. No changes in course descriptions or prerequisites are necessary.

Appendix A

Notice of Change form

Notice of Change for: Data Science BA and minor

Date: October 31, 2018

A. PROGRAM INFORMATION

- **1. Name of institution** University of Rhode Island
- 2. Name of department, division, school or college

Department: Computer Science and Statistics College: Arts and Sciences

3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.

Initiation date: As soon as permitted after approval. First degree date: As soon as permitted after approval.

4. Intended location of the program: University of Rhode Island, Kingston Campus.

5. Summary description of proposed program (not to exceed 2 pages). Please see the attached catalog description (with requested changes in tracking).

6. If applicable, please include the existing URI catalog language and proposed catalog changes indicated in Track Changes.

Curriculum sheets and catalog language are attached with proposed changes in tracking.

7. Signature of the President

David M. Dooley

Requested changes to the Data Science Program November 2018

The following are the requested changes in the Data Science BA and BS programs with justifications. Please find the edited catalog descriptions and curriculum sheets with changes highlighted using tracking in Word.

- The BA DSP students should be permitted to choose among MTH 180, MTH 131, and MTH 141 as their Mathematics requirement and prerequisite to linear algebra. This adds MTH 180 to the list of options. The DSP curriculum committee early on judged linear algebra as highly important for data science professionals. The report from the National Academies on Data Science programs supports this. The mathematics department agrees that adding MTH 180 is a viable action. (See attached note from the Mathematics chair). We do not request this for the BS students, as they should have better developed mathematics skills, needed in more advanced data science courses (statistical, mathematical and computational).
- The BA and BS DSP students should be permitted to take CSC 399 or CSC 499 or STA/DSP 490 as their internship or practical experience. This adds CSC 399 to the list. This would give students the opportunity to choose among an internship (CSC 499) or a capstone project on campus that is developed in consultation with industry (CSC 399) or experience in statistical consulting (STA/DSP 490). All DSP majors will continue to be encouraged to choose data oriented experiences regardless of the course chosen.
- Change the writing requirement options as follows: Drop HPR 112 and replace it with HPR 142. We have consulted with the honors program; HPR 112 is likely to be retired, and honors students are currently advised into HPR 142. HPR 142 carries general education credit, but HPR 112 does not. In addition, add WRT 227 as another choice for fulfilling the writing requirement. This would permit students who are double majoring in both Business and Data Science to take only one writing class. The current prerequisite for WRT 227 is: *Pre: Open to Business majors with sophomore or higher standing. Open to a limited number of writing majors with sophomore or higher standing.* The curriculum committee views either class as a good choice for Data Science students. The new writing requirement would now be:
 - WRT 201 or WRT 227 or HPR 142.
- Add BIO 181 G to the ethics requirement. This class is very similar to the current requirement, CSC 320 and covers topics of high importance to data scientists. BIO 181 G is a class that is not a part of the BIO major, and carries general education credit. CSC 320 does not carry general education credit. Currently BIO 181 G is limited to fall semester and J Term, and caps enrollment at 25 students. CSC 320 is also offered in the fall semester. Adding Bio 181G gives students alternative scheduling and topical choices. The ethics requirement would be:
 - CSC 320 (4 credits) or BIO 181 G (3 credits)

• Remove BIO 439 as an upper level option in the BA and BS majors. We have consulted with the instructor of this class, who also serves on the committee – Rachel Schwartz - and found that this class is more suitable for non-data science majors. Much of the material in BIO 439 is taught to the students in the core courses of the data science major.

data science

The interdisciplinary Bachelor of Arts (B.A.) and the interdisciplinary Bachelor of Science (B.S.) degrees in data science and a minor in data science are managed through the Department of Computer Science and Statistics in the College of Arts and Sciences with partners from the following colleges: Business, Environment and Life Sciences, Health Sciences, Oceanography, and Pharmacy.

Faculty: Computer Science and Statistics: Professor Peckham, *program coordinator*, Associate Professor, Hamel; Assistant Professors Alvarez, Daniels, Katenka, Puggioni, Wu; *Cell and Molecular Biology:* Joint Appointment Assistant Professors Schwartz and Zhang; *Business:* Professor Shin; *Mathematics:* Professor Baglama; Associate Professor Thoma.

BACHELOR OF ARTS

The B.A. curriculum is designed to provide a solid foundation in the fundamentals of data science and will prepare students to procure, archive, clean, visualize, and analyze data.

In order to transfer from University College for Academic Success to the College of Arts and Sciences as a B.A. data science major (or to be coded as such in the College of Arts and Sciences), a student must have completed MTH <u>180 or</u> 141 (or 131), MTH 215, and STA 409 and must have maintained at least a 2.00 cumulative GPA overall, and at least a 2.00 GPA in all core data science courses required in the data science B.A. program that have been completed at the time of the application for transfer.

Students in the B.A. curriculum must complete a minimum of 38 credits (maximum 51) as follows: CSC 201 or 211 (4), CSC 320 or BIO 181 G (4), STA 409 (3), MTH 215 (3), CSC/DSP 310 or STA 305 (4), STA/DSP 441 or CSC/DSP 461 (4), BUS 456 (3), one course from an approved list of data science related specialization or domain area courses (3 or 4), and one additional integrative or capstone class, CSC 399 or CSC 499 or STA/DSP 490 (4). Also required are MTH 131 or MTH 141 (3 or 4), WRT 201 or WRT 227 or HPR 112–142 (3).

A total of 120 credits is required for graduation; at least 42 of these credits must be at the 300 level or above. Major and general education courses may fulfill this requirement.

BACHELOR OF SCIENCE

The B.S. curriculum is designed to provide a broad introduction to the fundamentals of data science including ethics, computing, statistics, and mathematics. The required mathematics preparation provides a basis for advanced work. Students will be well prepared for careers or graduate study in data science.

In order to transfer from University College for Academic Success to Arts and Sciences as a B.S. data science major (or to be coded as such in the College of Arts and Sciences), a student must have completed MTH 141 (or 131), MTH 215, and STA 409 and must have maintained at least a 2.0 cumulative GPA overall, and at least a 2.0 GPA in all core

data science courses required in the data science B.S. program that have been completed at the time of the application for transfer.

Students in the B.S. curriculum must complete a minimum of 56 credits as follows: CSC 201 or 211 (4), CSC 320 or BIO 181 G (4), STA 409 (3), MTH 142 (4), MTH 215 (3) CSC/DSP 310 (4), STA 305 (4), STA/DSP 441 (4), CSC/DSP 461 (4), BUS 456 (3), three courses from an approved list of data science related specialization or domain area classes, one integrative or capstone class, CSC 399 or CSC 499 or STA/DSP 490 (4).

Students must also complete MTH 141 (4) and WRT 201 or WRT 227 or HPR 112 142

_(3).

A total of 120 credits is required for graduation.

Data Science related specialization or domain courses

Biological Sciences: BIO 439, CMB 320, BPS/CSC/STA 522 Computer Science: CSC 212, 412, 415, 436, 450 Data Science Program: DSP 393 Geographic Information Systems: LAR 302 or NRS 409 and 410 Mathematics: MTH 243, 418, 447, 451, 471 Oceanography: OCG 350, OCG 351 Social Science and Humanities: HIS 116, PHL 212 Statistics: STA 411 or 412, STA 445, 460

Minor in Data Science

This minor is intended to provide students with preliminary data collection, manipulation, access, and/or analysis skills as are appropriate to data needs in their majors.

Students declaring a minor in data science must earn 22–23 credits including CSC 201 or 211 (4), STA 308, 409, 411, or 412 (3 or 4), MTH 215 (3), CSC 310 or STA 305 (4), CSC 461 or STA/DSP 441 (4), and CSC 320 (4). Optional: In addition each student is encouraged to take one class that is integrative and that is focused on applying data science principles/skills to a data intensive domain area. For example, CSC <u>399 or CSC</u> 499 or STA 490.

Data Science-BA
120 Credits TotalTHE UNIVERSITY OF RHODE ISLAND
FALL 2018-SPRING 2019

3<u>7</u>8-51 Credits in Major

ABOUT THE DATA SCIENCE BA DEGREE:

The BA program in Data Science is designed to provide a solid foundation in the fundamentals of data science and will prepare students to procure, archive, clean, visualize, and analyze data.

Step

Course	Semester	Credits	Grade			
MTH <u>180*</u>						
<u>or</u> 131* or		3-4				
141*						
MTH 215		3				
CSC 201 or		Δ				
211		•				
CSC 320 <u>or</u> BIO 181 G*		<u>3-</u> 4				
CSC/DSP 310		Δ				
or STA 305						
CSC/DSP 461 or		4				
DSP/STA 441		•				
STA 409		3				
BUS 456		3				
WRT 201*,						
WRT 227*,		2				
or HPR		3				
142 112						
CSC 399* or						
CSC 499 or		4				
STA/DSP 490						
Complete one cours	e from the foll	owing domain a	reas:			
<i>Biological Sciences:</i> BIO 439, CMB 320, BPS/CSC/STA 522 <i>Computer Science:</i> CSC 212, 412, 415, 436, 450 <i>Data Science Program:</i> DSP 393 <i>Geographic Information Systems:</i> LAR 302 or NRS 409/410 <i>Mathematics:</i> MTH 243, 418, 447, 451, 471 <i>Oceanography:</i> OCG 350, 351 <i>Social Science and Humanitics:</i> HIS 116, PHI 212*						
Statistics: STA 411	or 412, STA 4	45, 460				
		3-4				
Optional Major Electives (do not exceed 51 major credits)						

42 credits at the 300-level or higher (major and general education courses may fulfill this

requirement)							
Course	Credits		Course	Credits			

Free elective credits (to meet the 120 credits required for graduation):

(10		i	1	
Course	Credits		Course	Credits

In order to transfer to the College of Arts and Sciences, students must complete MTH 131 or 141, MTH 215, and STA 409. Students must also have a 2.00 GPA both cumulatively and in all courses required for the major that have been completed at the time of transfer.

*Course approved for general education credit

 Data Science-BA
 THE UNIVERSITY OF RHODE ISLAND
 FALL 2018-SPRING 2019

120 Credits Total 3<u>7</u>8-51 Credits in Major

GENERAL EDUCATION GUIDELINES: General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code (note- HPR courses may have more than 12 credits). General education courses may also be used to meet requirements of the major or minor when appropriate.

Step 2:

STEP 3:

					1		
Gene	ral Educa	tio	on Credit Coun	ıt		General Education Outcome	Audit
							Course
At least 40 cr	edits, no n	or	e than 12 credits	with the		KNOWLEDGE	
	same c	our	se code.			A1. STEM	
Course	Cr		Course	Cr		A2. Social & Behavioral Sciences	
Course			Course			A3. Humanities	
	_					A4. Arts & Design	
						COMPETENCIES	
						B1. Write effectively	
						B2. Communicate effectively	
						B3. Mathematical, statistical, or	
						computational strategies	
						B4. Information literacy	
						RESPONSIBILITIES	
						C1. Civic knowledge &	
						responsibilities	
						C2. Global responsibilities	
						C3. Diversity and Inclusion	
						INTEGRATE & APPLY	
						D1. Ability to synthesize	
						GRAND CHALLENGE	
			Total Can Ed			G. Check that at least one course of	
			rotal Gen Ed	40		your 40 credits is an approved "G"	
1		1	creatis	40		course	1

SEE OPPOSITE SIDE FOR PROGRAM REQUIREMENTS.

NOTE: This worksheet sheet is a snapshot of your entire curriculum. You must work with your advisor each term to discuss requirements to keep you on course for timely progress to complete this major. Official requirements for graduation are listed in the University Catalog.

THE UNIVERSITY OF RHODE ISLAND FALL 2018-SPRING 2019 **Data Science-BS**

120 Credits Total 56 Credits in Major

ABOUT THE DATA SCIENCE BS DEGREE:

The BS program in Data Science is designed to provide a broad introduction to the fundamentals of data science including ethics, computing, statistics, and mathematics. The required mathematics preparation provides a basis for advanced work. Students will be well prepared for careers or graduate study in data science.

STEP 1:

Major Requir	ements:						
Course	Semester	Credits	Grade				
MTH 141*		4					
MTH 142*		4					
MTH 215		3					
CSC 201 or 211		4					
CSC 320 <u>or</u> BIO 181 G*		<u>3-</u> 4					
CSC/DSP 310		4					
DSP/STA 441		4					
CSC/DSP 461		4					
STA 305		4					
STA 409		3					
BUS 456		3					
WRT 201* <u></u>							
<u>WRT 227*</u> or		3					
HPR 1 <u>42</u> 12							
<u>CSC 399* or</u>							
CSC 499 or		4					
STA/DSP 490							
Complete three courses from the following domain areas: <i>Biological Sciences:</i> BIO 439, CMB 320, BPS/CSC/STA 522 <i>Computer Science:</i> CSC 212, 412, 415, 436, 450 <i>Data Science Program:</i> DSP 393							
<i>Geographic Information Systems:</i> LAR 302 or NRS 409/410							
Mathematics: MTH 243, 418, 447, 451, 471							
Oceanography: OCG 350, 351							
Social Science and	Humanities: H	HIS 116, PHL 2	12*				
Suuisucs: SIA 411	01 412, SIA 4	45,400					
		3-4					

3-4

3-4

(to meet the	120 credits	(to meet the 120 creaits required for graduation):								
Course	Credits		Course	Credits						
		1								
		1								

Free elective credits

In order to transfer to the College of Arts and Sciences, students must complete MTH 131 or 141, MTH 215, and STA 409. Students must also have a 2.00 GPA both cumulatively and in all courses required for the major that have been completed at the time of transfer.

*Course approved for general education credit

THE UNIVERSITY OF RHODE ISLAND FALL 2018-SPRING 2019

Data Science-BS 120 Credits Total 56 Credits in Major

GENERAL EDUCATION GUIDELINES: General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code (note- HPR courses may have more than 12 credits). General education courses may also be used to meet requirements of the major or minor when appropriate.

STEP 2:

STEP 3:

Course

Gener	ral Educa	tio	n Credit Coun	ıt		General Education Outcome	Audit
							Cou
At least 40 cr	edits, no m	ore	e than 12 credits	with the		KNOWLEDGE	
	same c	ours	se code.			A1. STEM	
Course	Cr.		Course	Cr.		A2. Social & Behavioral Sciences	
Course			course			A3. Humanities	
						A4. Arts & Design	
						COMPETENCIES	
					1	B1. Write effectively	
		-			-	B2. Communicate effectively	
						B3. Mathematical, statistical, or	
						computational strategies	
						B4. Information literacy	
						RESPONSIBILITIES	
						C1. Civic knowledge &	
						responsibilities	
						C2. Global responsibilities	
						C3. Diversity and Inclusion	
						INTEGRATE & APPLY	
						D1. Ability to synthesize	
	_					GRAND CHALLENGE	
						G. Check that at least one course of	
			Total Gen Ed	10		your 40 credits is an approved "G"	
			credits	40		course	

SEE OPPOSITE SIDE FOR PROGRAM REQUIREMENTS.

NOTE: This worksheet sheet is a snapshot of your entire curriculum. You must work with your advisor each term to discuss requirements to keep you on course for timely progress to complete this major. Official requirements for graduation are listed in the University Catalog.

THE UNIVERSITY OF RHODE ISLAND

Appendix B

Revised 8/2016

Notice of Change form

Notice of Change for: Catalog description revision for Bachelor of Music degrees in Orchestral Performance, Jazz, Music Education, and Composition

Date: 9/20/18

A. PROGRAM INFORMATION

- **1. Name of institution** University of Rhode Island
- 2. Name of department, division, school or college

Department: Music College: Arts & Sciences

3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.

Initiation date: NA First degree date: NA

- 4. Intended location of the program NA
- 5. Summary description of proposed program (not to exceed 2 pages).
- The changes proposed revise piano proficiency requirements for all BOM degrees. No changes in credits will occur as a result of the revision of the policy. The changes will streamline the requirement and make it more equitable for all students across programs. No changes in course descriptions or prerequisites are necessary.
- 6. If applicable, please include the existing URI catalog language and proposed catalog changes indicated in Track Changes.

All Bachelor of Music students must successfully complete Option I or Option II of the demonstrate piano proficiency requirement through passing a series of seven examinations or completing MUS 272 with a C or better. Students complete a diagnostic examination during their audition for placement in piano courses, MUS 171, MUS 172, MUS 271 or MUS 272. The highest level of placement is MUS 272. Students who earn the highest placement level or who are accepted as piano majors may elect to pass all seven piano proficiencies before a faculty examination committee in lieu of completion of MUS 272; passing the piano proficiency exam by the end of the fall semester of their junior year results in exemption from enrolling and completing MUS 272. Piano proficiency exams are offered each semester. In Option I, students must pass all seven piano proficiencies by the end of their junior year. Piano proficiency examinations before the faculty examination committee are scheduled on a regular basis during the fall and spring semesters. In Option II students take MUS 171, 172, 271, and 272 and successfully pass each course with a grade no lower than a C. Failure to pass either option will require re examination in succeeding semesters. The B.M. degree will not be granted until this requirement is fulfilled.

Students selecting Option I will need to demonstrate the following seven piano proficiencies by the end of the fall semester of their junior year: 1) *Five-finger patterns*, playing a vocal warm-up sequence, hands together; 2) *scales*, playing two-octave major scales up to three sharps and flats, and one-octave minor scales in all three forms up to three sharps and flats, hands together, by memory at a tempo of M.M.=144 per note; 3) *transposition*, transposing at sight two melodies selected by the examination committee, students will be asked to transpose the melodies up or down by either a half step or whole step; 4) *harmonization*, reading two melodies taken from any major or minor key chosen by the examination committee, improvising suitable accompaniments for the melodies by using diatonic triads and secondary dominants, and reading from chord symbols; 5) *patriotic songs*, playing *America* and *The Star-Spangled Banner* in a manner suitable for accompanying community or school singing; these accompaniments are to be prepared in advance; 6) *sight-reading*, playing at sight selections chosen from a simple accompaniment part and/or beginning-level solo scores; and 7) *repertoire*, playing two prepared piano pieces by contrasting composers; each piece must be approved in advance by a member of the piano faculty or an instructor of class piano (piano majors are exempt from #7).

7. Signature of the President

David M. Dooley

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Music-BOM Music Education

131 Credits Total

ALL programs that require piano ABOUT THE MUS proficiency will

GREE:

The BOM degree is the have the relevant success of the professi changes made as performance; Music Eseen below in this concentration on the smap.

gree in music. Its focus is on the development of skills and concepts essential to the ns include; Performance – with a focus in either jazz studies or classical lan to teach music in elementary or secondary schools; and Composition – with a ructure of music. Course Semester Credits Grade

MUS 300

Music Convocation- 7 semesters

STEP 1:

Major Requirements:

Course	Somester	Credite	Crede			MUS 300		0	
Course MUS 110	Semester		Graue		Ī	MUS 300		0	
MUS 119		1			Ī	MUS 300		0	
MUS 120		2			Γ	MUS 300		0	
MUS 121		2			Γ	MUS 300		0	
MUS 122		2			Γ	MUS 300		0	
MUS 221		2			Ī	Appli	ed Music Lessons	- 7 semester	·s
MUS 222		2			Ī	MUS 110		2	
MUS 225		2			Ī	MUS 110		2	
MUS 220		2			Ī	MUS 210		2	
MUS 227*		2			Ī	MUS 210		2	
MUS 220		2			Ī	MUS 310		2	
MUS 255		2			Ī	MUS 310		2	
MUS 280		0			Γ	MUS 410		2	
MUS 311		2			Ī	Secondary A	pplied Music- Cha	oose from M	IUS 169,
MUS 312		3				170, 173, 175,	177, 179, 271, 27	2 or MUS 1	10-410 in
MUS 322		3			-		applied area	<i>a</i> .	T
MUS 410 0r 417		3			-	MUS		1	
MUS 450		0				MUS		1	
MUS 480		1				MUS		1	
Maior Ensemble-	- 7 semesters, 6	credits. 0-1	credit per			MUS		1	
semester from	m: MUS 292, 2	93, 394, 395,	397			Method Classes- minimum 1 credit each			ach
MUS		1				MUS 169			
MUS		1				MUS 170			
MUS		1				MUS 173			
MUS		1				MUS 175			
MUS		1				MUS 177			
MUS		1				MUS 179			
MUS	Diagn	ostic exar	n determ	nines			Professional Edu	cation	
Diana Drafiaia	placen	nent in pia	ano cours	ses.		PSY 113		3	
Ontion Profile	l orams by and	7	1			MUS 238		3	
of junior year	i exams by end	Option 2	Pass each	course with		MUS 339		3	
Exam	Grade	C or bette	er Caradi			MUS 340		3	
Five Finger Patte	erns	Course		its Grade		MUS 341		1	
Scales		MUS 17	1 1		_	EDC 250		1	
Harmonization		MUS 17	2 1		4	EDC 484		12	
Transposition		MUS 27	1 1			EDC 485		3	
Patriotic Songe		MUS 27	2 1		_)				
Sight-Read						*Course app	proved for gener	al educatio	n credit
Repertoire		1\							
		⊥)							

Music-BOM Music Education 131 Credits Total

GENERAL EDUCATION GUIDELINES: General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code (note- HPR courses may have more than 12 credits). General education courses may also be used to meet requirements of the major or minor when appropriate.

Step 2:

<u>Step 3:</u>

Gener	General Education Credit Count						
At least 40 credits, no more than 12 credits with the same course code.							
Course	Cr.	Course	Cr.				
		Total Can Ed					
		credits	40				

General Education Outcome	Audit
	Course
KNOWLEDGE	
A1. STEM	
A2. Social & Behavioral Sciences	
A3. Humanities	
A4. Arts & Design	
COMPETENCIES	
B1. Write effectively	
B2. Communicate effectively	
B3. Mathematical, statistical, or	
computational strategies	
B4. Information literacy	
RESPONSIBILITIES	
C1. Civic knowledge &	
responsibilities	
C2. Global responsibilities	
C3. Diversity and Inclusion	
INTEGRATE & APPLY	
D1. Ability to synthesize	
GRAND CHALLENGE	
G. Check that at least one course of	
your 40 credits is an approved "G"	
course	

SEE OPPOSITE SIDE FOR PROGRAM REQUIREMENTS.

NOTE: This worksheet sheet is a snapshot of your entire curriculum. You must work with your advisor each term to discuss requirements to keep you on course for timely progress to complete this major. Official requirements for graduation are listed in the University Catalog.