

Program Change Request

Date Submitted: 10/05/18 10:04 am

Viewing: **BS-PHYS : Physics - BS**

Last approved: 03/01/18 3:18 pm

Last edit: 11/08/18 8:29 pm

Changes proposed by: skessler

Catalog Pages Using
this Program

[Physics - BS](#)

In Workflow

1. **PHYS Department Head**
2. **Curricular Services Review**
3. **SC Committee Preparer UG**
4. **SC Committee Chair UG**
5. **SC College Dean UG**
6. **UCC Preparer**
7. **UCC Chair**
8. **Faculty Senate Preparer**
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services

Approval Path

1. 09/28/18 3:26 pm
Lewis Ford (a-ford):
Approved for PHYS
Department Head
2. 10/04/18 11:18 am
Angel Mario Carrizales
(carri1214): Rollback to
Initiator
3. 10/05/18 10:07 am
Lewis Ford (a-ford):
Approved for PHYS
Department Head
4. 10/08/18 10:15 am
Angel Mario Carrizales
(carri1214): Approved
for Curricular Services
Review
5. 10/08/18 10:20 am
Sara Thigpin
(sarathigpin): Approved
for SC Committee
Preparer UG
6. 10/08/18 11:01 am
Lucas Macri (lmacri):
Approved for SC
Committee Chair UG
7. 10/08/18 11:10 am
Lucas Macri (lmacri):
Approved for SC College
Dean UG
8. 10/08/18 2:00 pm
Sandra Williams
(sandra-williams):
Approved for UCC
Preparer
9. 11/05/18 3:15 pm
Sandra Williams
(sandra-williams):
Approved for UCC Chair

Contact(s)

Name	E-mail	Phone
Sherree Kessler	skessler@physics.tamu.edu	979-458-5948

Academic level	Undergraduate
Effective Term	2019-2020
Department	Physics and Astronomy
College	Science
Program type	Degree
Degree designation	BS - Bachelor of Science
With a major in	Physics (PHYS)
Associated Program	Not Applicable
Catalog Program Title	Physics - BS
CIP and Fund code	40080100

Rationale for Proposal

PHYS 218 and 208 have been replaced by two new PHYS classes, with separate labs. Physics majors will take PHYS 206 (3 hours) and PHYS 226 (1 hour) beginning in Spring 2019, and PHYS 207 (3 hours) and PHYS 227 (1 hour) beginning in Summer 2019. For spring and summer, these labs will be 289s.

Additionally, the Dept. UCC has approved a change from requiring ENGL 104 to requiring ENGL 103 or 104. They would also like to exclude THAR 407 as an acceptable communication elective.

Finally, the Dept. UCC would like to exclude all 485 and 491 (PHYS and ASTR) from the Physics elective (rule U). The Department UCC voted to allow PHYS/ASTR 291 be an option to fill the research requirement which could previously only be filled by PHYS/ASTR 491. It More of our students are beginning research early in their program, and to better track when they are registering for research, we would also like to exclude all 485 and 491 (PHYS have the U1 and ASTR), U2 students register for PHYS/ASTR 291 and allow ASTR 300 - 499 for the Science the U3 and Technical Elective (rule V). U4 students register for PHYS/ASTR 491. Therefore, the 4 hour research requirement can now be met by any combination of PHYS/ASTR 291 and 491.

Program hours	120
Is this program eligible for financial aid?	Yes
Will program hours change (increase/decrease) due to the proposed curriculum changes?	No

Program delivery mode
On-campus

History

1. Aug 30, 2016 by Angela Allensworth (arankin)
2. Mar 7, 2017 by Sara Thigpin (sarathigpin)
3. Oct 5, 2017 by Angela Allensworth (arankin)
4. Mar 1, 2018 by Sherree Kessler (skessler)

Catalog Program Requirements

Plan of Study Grid

		Semester Credit Hours
First Year		
Fall		
CHEM 107	General Chemistry for Engineering Students	4
& CHEM 117	and General Chemistry for Engineering Students Laboratory 1	
ENGL 104	Composition and Rhetoric	3
or ENGL 103	or Introduction to Rhetoric and Composition	
MATH 171	Analytic Geometry and Calculus 1	4
PHYS 101	Freshman Physics Orientation 1	1
American history elective 2		3
	Semester Credit Hours	15
Spring		
PHYS 102	Freshman Physics Orientation II 1	1
PHYS 218	Mechanics	4
PHYS 206	Newtonian Mechanics for Engineering and Science	3
& PHYS 226	and Physics of Motion Laboratory for the Sciences 1	
MATH 172	Calculus 1	4
American history elective 2		3
Language, philosophy and culture elective 2		3
	Semester Credit Hours	14
Second Year		
Fall		
MATH 221	Several Variable Calculus 1	4
MATH 308	Differential Equations 1	3
PHYS 208	Electricity and Optics	4
PHYS 207	Electricity and Magnetism for Engineering and Science	4
& PHYS 227	and Electricity and Magnetism Laboratory for the Sciences 1	
PHYS 221	Optics and Thermal Physics 1	3
POLS 206	American National Government	3
	Semester Credit Hours	17
Spring		
PHYS 225	Electronic Circuits and Applications	4
PHYS 309	Modern Physics 1	3
PHYS 331	Theoretical Methods for Physicists I 1	3
POLS 207	State and Local Government	3
Communication elective 3		3
	Semester Credit Hours	16
Third Year		
Fall		
PHYS 302	Advanced Mechanics I	3
PHYS 304	Advanced Electricity and Magnetism I	3
PHYS 332	Theoretical Methods for Physicists II	3
Creative arts elective 2		3
Social and behavioral science elective 2		3
	Semester Credit Hours	15
Spring		
PHYS 303	Advanced Mechanics II	3
PHYS 305	Advanced Electricity and Magnetism II	3
PHYS 327	Experimental Physics I 4	2
PHYS 328	Experimental Physics II 4	1
PHYS 412	Quantum Mechanics I	3
Electives 7		3
	Semester Credit Hours	15
Fourth Year		

Fall		
PHYS 408	Thermodynamics and Statistical Mechanics	4
PHYS 414	Quantum Mechanics II	3
or PHYS 416	or Physics of the Solid State	
PHYS 426	Physics Laboratory	2
Select one of the following:		2
ASTR 291	Research 9	
ASTR 491	Research 9	
PHYS 291	Research 9	
PHYS 491	Research 9	
Physics elective 8		3
	Semester Credit Hours	14
Spring		
PHYS 401	Computational Physics 5	3
PHYS 425	Physics Laboratory	2
Select one of the following:		2
ASTR 291	Research 9	
ASTR 491	Research 9	
PHYS 291	Research 9	
PHYS 491	Research 9	
Science or technical elective 6		3
Electives 7		3
	Semester Credit Hours	13
	Total Semester Credit Hours	119

1A Physics major must complete the foundation courses ([PHYS 101](#), [PHYS 102](#), [PHYS 206/PHYS 226](#), [PHYS 207/PHYS 227](#), [PHYS 221](#), [PHYS 309](#), [PHYS 331](#), [CHEM 107/CHEM 117](#), [MATH 171](#), [MATH 172](#), [MATH 221](#), [MATH 308](#)) with a grade of C or better and have a 2.0 cumulative GPR before taking non-foundation upper-level Physics courses.

2Any course in this category from the approved University Core Curriculum list of courses.

3Any approved Communication course, except [THAR 407](#).

4[PHYS 327](#) is an approved W course. [PHYS 328](#) is an approved C course.

5 To register for [PHYS 401](#) a student must be able to program in a high level language.

6Any upper-division ASTR or PHYS course not required for the PHYS degree, except 485 or 491.

7Electives should be chosen in consultation with the student's academic advisor. Three hours must be in the area of International and Cultural Diversity, and three hours must be in the area of Cultural Discourse. These may be in addition to other University Core Curriculum courses, or, if a course in this category satisfies another area of the Core, it can be used to meet both requirements.

8Any upper-division ASTR or PHYS course not required for the PHYS degree, or an approved upper-division science or technical elective, except 485 or 491.

9 A combination of [PHYS 291](#), [PHYS 491](#), [ASTR 291](#) and [ASTR 491](#) must equal 4 hours. Students with a U1 or U2 classification should take [PHYS 291/ASTR 291](#). Students with a U3 or U4 classification should take [PHYS 491 /ASTR 491](#).

Additional information [10.11.17 Editorial changes to footnotes per request of Sherree Kessler.](#)

Required Proposal [Curriculum Change—Add PHYS and ASTR 291—Degree Evaluation—BS-PHYS.pdf](#)
Forms [PresidentApprovalFacultySenateItems121117.pdf](#)
[Updated Degree Eval - BS-PHYS - Fall 2019 - 2.pdf](#)

Reviewer Comments **Angel Mario Carrizales (carri1214) (10/04/18 11:18 am):** Rollback: The Life & Physical science area only list 4 hours; This area needs to be no less than 9 hours. Please add the courses that are used to meet the Core Life and Physical Science requirements in this program. I recommend to move PHYS 206/ 216 and PHYS 207/217 from Major Coursework area to the Life & Physical Science Area and adjust the area hours accordingly.
Angel Mario Carrizales (carri1214) (10/08/18 10:12 am): Initial concerns approved.
Angel Mario Carrizales (carri1214) (10/08/18 10:14 am): Correction. Initial concerns addressed.
Sandra Williams (sandra-williams) (11/05/18 3:15 pm): UCC approved November 2018.

Key: 429

[Print](#)

Detail Requirements

Sherree D. Kessler
Oct 04, 2018 11:30 am

Viewing: [Degree Evaluation \(DEGEVAL, , Email\)](#)
[Change Student](#)

Information for Degree Evaluation

This is NOT an official evaluation.

Print Instructions

Program Evaluation

Limitation Correspondence: No more than 12 hours of correspondence earned through an accredited institution may be used for an undergraduate degree.

Limitation Combination: Maximum combination of 18 hours of 481, 482, 485 and/or 491 courses may be used for an undergraduate degree.

Program :	BS PHYS	Catalog Term :	Fall 2018 - College Station
Campus :	College Station	Evaluation Term :	Fall 2018 - College Station
College :	Science	Expected Graduation Date :	
Degree :	Bachelor of Science	Request Number :	12
Level :	Undergraduate	Results as of :	Oct 04, 2018
Majors :	Physics	Minors :	
Departments :	Physics & Astronomy	Concentrations :	

		Met Credits		Courses	
		Required	Used	Required	Used
Total Required :	No	120.000	0.000		0
Program GPA :	Yes	.00	.00		
Overall GPA :	No	2.00	.00		
Other Course Information					
Transfer :			0.000		0

This is NOT an official evaluation.

57

Area : Major Coursework (~~65.000 credits~~) - Not Met

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course	Title	Attribute	Credits
No		A.	PHYS 101	1hr										
No	AND	B.	PHYS 102	1hr										
No	AND	C.	PHYS 218	4hrs										
No	AND	D.	PHYS 208	4hrs										
No	AND	E.	PHYS 221	3hrs										
No	AND	F.	PHYS 225	4hrs										
No	AND	G.	PHYS 304	3hrs										
No	AND	H.	PHYS 305	3hrs										

move to Life Science
please re letter

- No AND I. PHYS 309 3hrs
Must make a grade of 'C' or better.
- No AND J. PHYS 412 3hrs
- No AND K. PHYS 408 4hrs
- No AND L. PHYS 414 or PHYS 416 3hrs
- No AND M. PHYS 425 2hrs
- No AND N. PHYS 426 2hrs
- No AND O. PHYS 302 3hrs
- No AND P. PHYS 401 3hrs
- No AND Q. Research Reqmt 4hrs
Select from ASTR 291, 491; PHYS 291, 491
- No AND R. PHYS 303 3hrs
- No AND S. PHYS 331 3hrs
Must make a grade of 'C' or better.
- No AND T. PHYS 332 3hrs
- No AND U. Physics Elective 3hrs
Select from ASTR 300-499; PHYS 300-499; (except PHYS 420, 444, 445, 485, 491).
- No AND V. Science or Tech Elective 3hrs → 300 - 499
Select from ASTR ~~344~~; PHYS 400-499; (except PHYS 420, 444, 445, 485, 491) Science or Technical Elective*. or ASTR 491 or 485
*Consult with academic advisor for additional options.

Total Credits and GPA 0.000

unofficial evaluation

Area : Communication (6.000 credits) - Not Met

Met Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute Credits Credits Courses

- No A. ENGL 104 3hrs or ENGL 103
- No AND B. Communication Reqmt 3hrs
Select any course with the Communication [KCOM] attribute. ,except THAR 407

Total Credits and GPA 0.000

unofficial evaluation

Area : Mathematics (15.000 credits) - Not Met

Met Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute Credits Credits Courses

- No A. MATH 171
Must make a grade of 'C' or better.
- No AND B. MATH 172
Must make a grade of 'C' or better.
- No AND C. MATH 221
Must make a grade of 'C' or better.
- No AND D. MATH 308
Must make a grade of 'C' or better.

Total Credits and GPA 0.000

unofficial evaluation

12

Area : Life and Physical Sciences (~~4.000 credits~~) - Not Met

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course Title	Attribute	Credits
No		A.	CHEM 107	3hrs									
			Must make a grade of 'C' or better.										
No	AND	B.	CHEM 117	1hr									
			Must make a grade of 'C' or better.										
		C.	PHYS 206	3hrs									
		D.	PHYS 226	1 hr.									
		E.	PHYS 207	3hrs									
		F.	PHYS 227	1hr.									
												Total Credits and GPA	0.000

unofficial evaluation

Area : Language, Philosophy & Culture (3.000 credits) - Not Met

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course Title	Attribute	Credits
No		A.	Lang, Phil, Culture Rqmt	3hrs									
Select any course with the Language, Philosophy and Culture attribute [KLPC].													
												Total Credits and GPA	0.000

unofficial evaluation

Area : Creative Arts (3.000 credits) - Not Met

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course Title	Attribute	Credits
No		A.	Creative Arts Requirement	3hrs									
Select three hours from any course with the Creative Arts attribute [KCRA].													
												Total Credits and GPA	0.000

unofficial evaluation

Area : Social and Behavioral Sciences (3.000 credits) - Not Met

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course Title	Attribute	Credits
No		A.	Social Science Rqmt	3hrs									
Select from courses with the Social and Behavioral Science attribute [KSOC].													
												Total Credits and GPA	0.000

unofficial evaluation

Area : Citizenship (12.000 credits) - Not Met

Description : Completion of 4 semesters of Upper-Level ROTC may be substituted for 3 hours of American History and 3 hours of Political Science.

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course Title	Attribute	Credits
No		A.	American History Rqmt	6hrs									
Select from any course with the [KHIS] attribute.													
No	AND	B.	Political Science Rqmt	6hrs									

Take POLS 206 and POLS 207.

Total Credits and GPA

unofficial evaluation

Area : Writing Requirement (3.000 credits) - Not Met

Description : This area requires 3 hours of courses with the UWRT and UCRT attribute.

Met	Condition Rule	Subject Attribute	Low High	Required	Required	Term	Subject	Course	Title	Attribute	Credits
				Credits	Courses						

No	A.	Writing Requirement									

Only sections of PHYS 327 with the Writing attribute [UWRT] and sections of PHYS 328 with the Communication attribute [UCRT] may be used to satisfy this requirement.

Total Credits and GPA

unofficial evaluation

Area : General Electives (6.000 credits) - Not Met

Met	Condition Rule	Subject Attribute	Low High	Required	Required	Term	Subject	Course	Title	Attribute	Credits
				Credits	Courses						

No	A.	General Electives 6hrs									

Select any 100-499 course not used elsewhere. (except MATH 100-148, 165-166, 365-366; PHYS 201-202, 207-208.)

Total Credits and GPA 0.000

unofficial evaluation

Area : Work Not Applied - Met

Description : See advisor for acceptable substitutions.

Met	Condition Rule	Subject Attribute	Low High	Required	Required	Term	Subject	Course	Title	Attribute	Credits
				Credits	Courses						

No	A.	Courses not applied									

Total Credits and GPA

unofficial evaluation

Area : University Writing Requirement - Not Met

Met	Condition Rule	Subject Attribute	Low High	Required	Required	Term	Subject	Course	Title	Attribute	Credits
				Credits	Courses						

No	A.	Writing Requirement									

Two courses required.
Only sections of PHYS 327 with the Writing attribute [UWRT] and sections of PHYS 328 with the Communication attribute [UCRT] may be used to satisfy this requirement.

Total Credits and GPA 0.000

unofficial evaluation

Area : Int'l & Cult Diversity - Not Met

Met Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute Credits
Credits Courses

No A. Int'l & Cultural Diversity 6hr
 Select from courses with the International and Cultural Diversity attribute [UICD] (except sections of BUSN 289 with the UWRT attribute).

Total Credits and GPA 0.000

unofficial evaluation

Area : Foreign Language - Not Met

Met Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute Credits
Credits Courses

No A. Foreign Language Rqmt
 Complete one of the following:
 1. Two years of the same foreign language in High School.
 2. A two semester sequence of the same foreign language for University credit.

Total Credits and GPA 0.000

unofficial evaluation

Area : Residence Requirement - Not Met

Description : A minimum of 36 hours of 300-400 level coursework must be completed at Texas A&M University. 12 hours must be in the major field

Met Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute C
Credits Courses

No A. Residence - Major 12hrs
 No AND B. Residence 300-499 24hrs

Total Credits and GPA

unofficial evaluation

Area : GPR-Major - Not Met

Description : A GPR of 2.00 must be maintained in all major field courses.

Met Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute C
Credits Courses

No A. Major GPR 34+hrs
 Includes PHYS 100-499; ASTR 314.

Total Credits and GPA

unofficial evaluation

[Back to Display Options](#)

3

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