

Program Assessment

2021-2022

Engineering, Physical Science & Process Technology

Math & Physical Science - Astronomy Option	
Date	8/30/2022
Competency # and Description	1. Use and apply physical data to solve problems
Course	ASTR 2513 – Observatory Methods MATH 2145 – Calculus I MATH 2155 – Calculus II
Activity	ASTR 2513 - Quiz MATH 2145 – Word problems involving derivations MATH 2155 – Word problems involving vectors.
Measurement (attached copy of instrument with point distribution)	ASTR 2513 - Quiz MATH 2145 - Common questions assessed on a quiz MATH 2155 - Common questions assessed on a quiz
Evaluation Criteria	ASTR 2513 - 70% pass rate on exam MATH 2145 - Students will earn 70% or better on the quiz MATH 2155 - Students will earn 70% or better on the quiz
Fall 2021 Results	ASTR 2513 not offered
Interpretation of Results for Fall 2021	Course was not offered
Reflection of Results for Fall 2021	Course was not offered
Actions for Fall 2022 Based on Results	Course was not offered
Timeline for Review	Fall data will be collected and reviewed in the spring and instructors from all campuses will determine needed adjustments.
Past Data and Actions	
2015-2016 Results	ASTR 2513 Not offered MATH 2145 not collected MATH 2155 not collected
2016-2017 Results	ASTR 2513 Not offered MATH 2145 – 7/7 (100%) of students met competency MATH 2155 – 31/35 (88.57%) of students met competency MATH 2145 – 26/35 (74.28%) of students met competency MATH 2155 – 4/7 (57.14%) of students met competency
2017-2018 Results	ASTR 2513 - (100%) of students met competency MATH 2145 – 14/19 (73.68%) of students met competency MATH 2155 – 6/12 (50%) of students met competency

	MATH 2145 – 9/12 (75%) of students met competency MATH 2155 – 6/13 (46.15%) of students met competency
2018-2019 Results	ASTR 2513 – not offered MATH 2145 – 8/16 (50%) of students met competency MATH 2155– 14/16 (87.5%) of students met competency MATH 2145 – 18/27 (66.67%) of students met competency MATH 2155 – 4/6 (66.67%) of students met competency
2019-2020 Results	ASTR 2513 – not offered
2020-2021 Results	ASTR 2513 – not offered
Summary of changes for 2018-2019	ASTR 2513 – no changes at this time Math – no changes at this time
Recommendation for changes for 2019-2020	ASTR 2513 – No changes are recommended due to the low number of students pursuing this program. The Assessment is meeting the needs of the program. Math - Incorporate more application problems (physics in particular) in the class lecture and homework problems. Students seem to understand concepts, but lack ability to apply those concepts.
Recommendation for changes for 2020-2021	ASTR 2513 – No changes are recommended due to the low number of students pursuing this program. The Assessment is meeting the needs of the program.
Recommendation for changes for 2021-2022	ASTR 2513 – No changes are recommended due to the low number of students pursuing this program. The Assessment is meeting the needs of the program.
Date	8/30/2022
Competency # and Description	2. Use logical reasoning to solve problems
Course	ASTR 2513 – Observatory Methods MATH 2145 –Calculus I MATH 2155 – Calculus II
Activity	ASTR 2513 - Quiz MATH 2145 – Word problems involving derivations MATH 2155 – Word problems involving vectors.
Measurement (attached copy of instrument with point distribution)	ASTR 2513 - Quiz MATH 2145 - Common questions assessed on a quiz MATH 2155 - Common questions assessed on a quiz
Evaluation Criteria	70% pass rate on activity
Fall 2021 Results	ASTR 2513 was not offered
Interpretation of Results for Fall 2021	ASTR 2513 was not offered
Reflection of Results for Fall 2021	ASTR 2513 was not offered
Actions for Fall 2022 Based on Results	ASTR 2513 was not offered

Timeline for Review	Fall data will be collected and reviewed in the spring and instructors from all campuses will determine needed adjustments.
Past Data and Actions	
2015-2016 Results	ASTR 2513 Not offered MATH 2145 103 out of 134 – 77% MATH 2155 36 out of 39 – 92%
2016-2017 Results	NA – ASTR 2513 not offered MATH 2145 – 7/7 (100%) of students met competency MATH 2155 – 31/35 (88.57%) of students met competency MATH 2145 – 26/35 (74.28%) of students met competency MATH 2155 – 4/7 (57.14%) of students met competency
2017-2018 Results	ASTR 2513 - (100%) of students met competency MATH 2145 – 14/19 (73.68%) of students met competency MATH 2155 – 6/12 (50%) of students met competency MATH 2145 – 9/12 (75%) of students met competency MATH 2155 – 6/13 (46.15%) of students met competency
2018-2019 Results	ASTR 2513 –not offered MATH 2145 – 8/16 (50%) of students met competency MATH 2155 – 14/16 (87.5%) of students met competency MATH 2145 – 18/27 (66.67%) of students met competency MATH 2155 – 4/6 (66.67%) of students met competency
2019-2020 Results	ASTR 2513 – not offered
2020-2021 Results	ASTR 2513 – not offered
Summary of changes for 2018-2019	ASTR 2513 – none at this time Math – no changes at this time
Recommendation for changes for 2019-2020	ASTR - No changes are recommended due to the low number of students pursuing this program. The Assessment is meeting the needs of the program. Math - Not always meeting benchmark – need to emphasize more in class and see what is different from fall to spring. Continue to focus on how to analyze word problems.
Recommendation for changes for 2020-2021	No changes were made due to number of students in the program.
Recommendation for changes for 2021-2022	No changes were made due to number of students in the program.
Date	8/30/2022
Competency # and Description	3. Explain evolutionary theory and its supporting principles.
Course	ASTR 1523 – Planetary Science ASTR 1014 – General Astronomy
Activity	ASTR 1523 – Quiz Question ASTR 1014 – Overall Course Grade

Measurement (attached copy of instrument with point distribution)	ASTR 1523 – Quiz Question ASTR 1014 – Overall Course Grade
Evaluation Criteria	Pass rate of 70% on each activity
Fall 2021 Results	ASTR 1523 not offered. ASTR 1014 90% pass rate.
Interpretation of Results for Fall 2021	Pass rate consistent during past 53 years.
Reflection of Results for Fall 2021	Question changes reflect technology changes.
Actions for Fall 2022 Based on Results	Looking at bringing in the other courses due to grant. Will add other course based upon participation.
Timeline for Review	Fall data will be collected and reviewed in the spring and instructors from all campuses will determine needed adjustments.
Past Data and Actions	
2015-2016 Results	ASTR 1523 15 out of 15 – 100% ASTR 1014 – not collected
2016-2017 Results	ASTR 1523 17 out of 17 – 100% ASTR 1014 – not collected
2017-2018 Results	ASTR 1523 – 15/17 (88%) students met competency ASTR 1014 – not collected
2018-2019 Results	ASTR 1523 – 6 out of 8 – 75% passed ASTR 1014 – 21 out of 32 – 70 % passed.
2019-2020 Results	Not collected.
2020-2021 Results	ASTR 1523 – Not Offered this Year. ASTR 1014 – 61 out of 62 – 98% passed.
Summary of changes for 2018-2019	Changed assessment tool and added class.
Recommendation for changes for 2019-2020	No changes are recommended due to the low number of students pursuing this program. The Assessment is meeting the needs of the program.
Recommendation for changes for 2020-2021	No changes were made due to number of students in the program.
Recommendation for changes for 2021-2022	No changes were made due to number of students in the program.

Summary of Program and Divisional Changes	
2016-2017	<ul style="list-style-type: none"> Purchased several upgrades for the Mackey Planetarium for better student learning opportunities.
2017-2018	<ul style="list-style-type: none"> No changes for this year
2018-2019	<ul style="list-style-type: none"> Changed assessment tool

2019-2020	No changes were made due to number of students in the program.
2020-2021	No changes were made due to number of students in the program.
2021-2022	No changes.

Recommendations for Program Changes	
2017-2018	<ul style="list-style-type: none"> Evaluate the number of graduates in the degree program to determine feasibility of retaining the program area.
2018-2019	<ul style="list-style-type: none"> Two students showed interest in pursuing astronomy at the upper division level. No recommendations at this time.
2019-2020	<ul style="list-style-type: none"> No changes are recommended due to the low number of students pursuing this program.
2020-2021	No changes were made due to number of students in the program.
2021-2022	No changes were made due to number of students in the program.
2022-2023	No changes. ASTR 2513 and ASTR 1523 no longer offered.

Ag, Science, & Engineering

Program Level Outcomes Timeline						
Program Objectives – Astronomy	Course Map	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
1. Use and apply physical data to solve problems	ASTR 2513 MATH 2145 MATH 2155	X	X	X	X	X
2. Use logical reasoning to solve problems	ASTR 2513 MATH 2145 MATH 2155	X	X	X	X	X
3. Explain evolutionary theory and its supporting principles.	ASTR 1523	X	X	X	X	X