

**LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK**

DEPARTMENT OF PHYSICS AND ASTRONOMY

CURRICULUM CHANGE

1. **Type of Change:** change in course description

2. **From:**

Department(s)	Physics and Astronomy
Career	<input checked="" type="checkbox"/> Undergraduate [] Graduate
Academic Level	<input checked="" type="checkbox"/> Regular [] Compensatory [] Developmental [] Remedial
Subject Area	Astronomy
Course Prefix & Number	AST 101
Course Title	Introduction to Astronomy
Description	Basic exploration of our universe and the laws that govern it. History and origins of the universe, life cycles of stars and galaxies, properties of the sun and planets, the motion of the earth and its effect on seasons and astronomical observation. Note: Only one of the following courses may be taken for credit: AST 101 or AST 117.
Pre/ Co Requisites	NA
Credits	3
Hours	3
Liberal Arts	<input checked="" type="checkbox"/> Yes [] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	NA
General Education Component	<p> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Required <input type="checkbox"/> English Composition <input type="checkbox"/> Mathematics <input type="checkbox"/> Science <input checked="" type="checkbox"/> Flexible <input type="checkbox"/> World Cultures <input type="checkbox"/> US Experience in its Diversity <input type="checkbox"/> Creative Expression <input type="checkbox"/> Individual and Society <input checked="" type="checkbox"/> Scientific World </p>

3. To:

Department(s)	Physics and Astronomy
Career	<input checked="" type="checkbox"/> Undergraduate [] Graduate
Academic Level	<input checked="" type="checkbox"/> Regular [] Compensatory [] Developmental [] Remedial
Subject Area	Astronomy
Course Prefix & Number	AST 101
Course Title	Introduction to Astronomy
Description	Basic exploration of <u>the science of astronomy and what it has taught us about our place in the universe. Topics include the history of astronomy, scales of the universe, the night sky, the moon, planets of the solar system, the Sun, Earth as an astronomical body, and life in the universe.</u> Note: Only one of the following courses may be taken for credit: AST 101 or AST 117.
Pre/ Co Requisites	NA
Credits	3
Hours	3
Liberal Arts	<input checked="" type="checkbox"/> Yes [] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	NA
General Education Component	<input type="checkbox"/> Not Applicable <input type="checkbox"/> Required <input type="checkbox"/> English Composition <input type="checkbox"/> Mathematics <input type="checkbox"/> Science <input checked="" type="checkbox"/> Flexible <input type="checkbox"/> World Cultures <input type="checkbox"/> US Experience in its Diversity <input type="checkbox"/> Creative Expression <input type="checkbox"/> Individual and Society <input checked="" type="checkbox"/> Scientific World

4. Rationale:

Previously AST 101 had a very broad reach, covering aspects of most areas of astronomy at an introductory level. While this served to give students a broad grasp of our modern understanding of the universe, its breadth inhibited a more careful

exploration of individual topics. By introducing a second course, AST 102, we have the opportunity improve the focus of AST 101. This course will now cover the historical development of astronomy, scales of the universe, the night sky, the seasons, the moon and the planets of the solar system, earth as an astronomical body, our sun, and life in the universe. Previous topics to be moved from AST 101 to AST 102 include: the physics of light, mechanics and gravity, stellar physics, dark matter, galaxies and their evolution, and cosmology.

This shift in topics will make AST 101 a more focused course and will allow the material to be covered in greater depth. Care has been taken to ensure that the Pathways Scientific World learning outcomes associated with the original course proposal will still be met in this more focused setting.

5. **Date of departmental approval:** March 29, 2017

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DEPARTMENT OF PHYSICS AND ASTRONOMY

CURRICULUM CHANGE

1. **Type of change:** New course

2.

Department(s)	Physics and Astronomy
Career	<input checked="" type="checkbox"/> Undergraduate <input type="checkbox"/> Graduate
Academic Level	<input checked="" type="checkbox"/> Regular <input type="checkbox"/> Compensatory <input type="checkbox"/> Developmental <input type="checkbox"/> Remedial
Subject Area	Astronomy
Course Prefix & Number	AST 102
Course Title	Introduction to the Universe
Description	An exploration of the important phenomena that influence our universe on the largest scales. Includes the lifecycles of stars, galaxy formation and dynamics, the Big Bang, and cosmology.
Pre/ Co Requisites	NA
Credits	3
Hours	4 (2 lecture, 2 lab)
Liberal Arts	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Course Attribute (e.g. Writing Intensive, WAC, etc)	NA
General Education Component	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Required <input type="checkbox"/> English Composition <input type="checkbox"/> Mathematics <input type="checkbox"/> Science <input type="checkbox"/> Flexible <input type="checkbox"/> World Cultures <input type="checkbox"/> US Experience in its Diversity <input type="checkbox"/> Creative Expression <input type="checkbox"/> Individual and Society <input type="checkbox"/> Scientific World

3. Rationale:

Astronomy has given us a powerful perspective on the place of humanity in the Universe. AST 102 *Introduction to the Universe* is designed to grant students this perspective by guiding them through our modern understanding of the processes and phenomena that govern our Universe on its largest scales. An additional aim is to grant students a solid understanding of the modern process of science in the context of astronomy, astrophysics, and cosmology. To achieve this, lectures and labs will focus on up-to-date methods and recent discoveries in these fields.

4. Learning Outcomes:

Students will understand the key stages in the evolution of the Universe from the Big Bang to the present, including the important events in the very early universe and the subsequent formation of galaxies and large-scale structure. They will understand our best models for the future evolution of the Universe. Students will have a detailed qualitative appreciation of the working and lifecycles of stars. Students will be able to explain the evidence and methods behind this scientific knowledge.

In the laboratory component students will perform experiments analogous to those used in the actual scientific discoveries that we investigate. Students will understand the role of the scientific method in developing our understanding of the Universe and will develop basic skills important for scientific investigation.

5. Date of Departmental Approval: March 29, 2017