Course Title: AST 183 Life In The Universe
Term: Summer 2023
Instructor: TBA
Course Credit: 3
Mode of Instruction: Online

Course Description:

The course will survey the scientific topics that comprise the key elements of "Astrobiology." These include the philosophical foundations of astrobiology as a science, astronomical sources of life's chemical building blocks and habitable environments, extremophilic organisms, the history of life on earth, the role of asteroid/comet impacts and micro-meteoritic dust, feasibility of space travel, and the search for life in the solar system and beyond.

Course Prerequisites:

N/A

Learning Outcomes:

By the end of the course, the student should be able to:

A. Demonstrate an understanding of the structure, scale, and history of the universe;

B. Critically and scientifically assess the possibility of life beyond Earth;

C. describe the Earth's place in the Solar System, Galaxy, and Universe;

D. describe the scale of the Universe and the relative sizes of the different objects within the Universe;

E. Demonstrate an understanding of the scientific method and how scientific research is conducted.

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Course Material:

Life in the Universe, 3rd Ed, Bennett, Shostak, Addison-Wesley.

Evaluation:

- 3 Labs [15%]
- 3 Lab Reports [30%]
- Term Paper [10%]
- Mid-term Exam [20%]
- Final Exam [25%]

Description of the Evaluation tasks:

Assignment/ Essay/ ... : During the term, students will be required to finish several evaluation tasks within due date. All the tasks are linked with specific course topics/outcomes and will adequately assess students' competence and learning outcomes. Students are encouraged to meet with instructor about these tasks at any point.

Mid-term/ Final Exams/ Quiz/... : There may be periodic quizzes given at the beginning of lecture sessions; the feedback from these quizzes will monitor the progress of the learners and help to set learning priorities. There will be mid-term exam/ final exam for the course. They are the basic criteria for the evaluation of students' learning outcomes and final grade.

Grading Policy:

Students are supposed to finish each online lecture. Prior to each class, students should finish the required readings. During the class time, students are encouraged to make use of all relevant online course resources and communicate with the instructor. Students' grades are accumulated based on the cumulative evaluations.

Students' letter grade will be assigned according to the following scale:

A+ 90-100	A 85-89	A- 80-84
B+ 77-79	B 73-76	B- 70-72
C+ 67-69	C 63-66	C- 60-62
D+ 57-59	D 53-56	D- 50-52
F < 50		

Academic Integrity:

Students must strictly adhere to the university's academic integrity rule; and all essays, exams and any other form of academic assignments must adhere to these rules. Any form of plagiarism, cheating, or misappropriation of materials will be considered a violation of academic integrity and will be punishable by the university.

Withdrawal from the Course(s):

Students will be able to apply for a transfer or withdrawal within 3 days of the starting date of the course. If a withdrawal is applied for within 3 working days, the tuition fee will be fully refunded. After 3 days, the tuition fee will not be refunded. If a withdrawal is applied for in the first two weeks, it will be recorded as W (Withdraw) on the course transcript. After this initial two-week period, the class will be recorded as F (Fail).

Tentative Schedule:

1	Introduction Life in The Universe
2	The Possibility of Life Beyond Earth
3	The Science of Life in the Universe
4	The Universal Context of Life
5	Lab 1

	Lab Report 1
6	The Structure, Scale and History of the Universe
7	A Universe of Matter and Energy
8	Our Solar System
9	Life on Earth
10	Lab 2 Lab Report 2
11	The Habitability of Earth
12	**Mid-term Exam**
13	Reconstructing the History of Earth and Life
14	The origin and evolution of life on Earth
15	Life in the Solar System
16	Mars
17	Life on Jovian Moons
18	The Moons of the Outer Solar System
19	Lab 3 Lab Report 3
20	The nature and Evolution of Habitability
21	Life Among the Stars
22	Extrasolar Planets: Their Nature and Potential Habitability
23	The search for Extraterrestrial Intelligence
24	Final Exam Reviews Term Paper due
25	**Final Exam**