STUDENT WARNING: This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.

American Public University System

American Military University | American Public University

SCIN120

Course Summary

Course : SCIN120 **Title :** Foundations of Scientific Inquiry Laboratory **Length of Course :** 8 **Faculty : Prerequisites :** N/A **Credit Hours :** 1

Description

Course Description:

This course provides an introduction laboratory experience for students who have previously completed a course in the natural sciences (biology, chemistry, physics, earth science, or astronomy) and require a laboratory experience to meet the general education natural sciences requirement for their degree. Students will discuss and apply the steps of the scientific method to activities and simulations drawn from across the natural sciences. Students will also review and demonstrate science information literacy skills through source selection, critical thinking, and writing. Note: Enrollment in this course is limited to incoming transfer students. Contact the Transfer Credit Department at CreditAward@apus.edu for information and registration instructions. This course may only be taken once for credit.

Course Scope:

Foundations of Scientific Inquiry Laboratory is a lab course designed to complement concepts learned in a previously completed introduction general science course. This course explores the basis of science and the scientific method. Each lab includes interactive experiences and opportunities to apply different steps of the scientific method. Specifically, background research, scientific literature review, hypothesis and prediction formation, data analysis, display and description of experimental results, and discussion of the implications of experimental results are covered in this course. Critical thinking and analytical skills are developed and applied in lab exercises. Science literacy is a key learning objective of this course. Discussions center on the lab exercises and key course concepts and emphasize the value and peer learning and support. An overview of lab and field safety is also included.

Objectives

After successfully completing this course, you will be able to

- **CO-1** Demonstrate science information literacy skills.
- **CO-2** Demonstrate the process of scientific inquiry.
- **CO-3** Apply concepts of scientific measurement and problem solving strategies.

CO-4 Apply mathematics toward solving scientific problems.

Outline

Week 1: Scientific Process & Lab Safety

Learning Outcomes

- CO-2

Assignments

- Introduction Discussion
- Lab Assignment 1

Week 2: Observation, Asking Questions, Inquiry & Discovery

Learning Outcomes

- CO-1
- CO-2

Assignments

- Week 2 Discussion
- Lab Assignment 2

Week 3: Hypothesis Formulation & Testing

Learning Outcomes

- CO-2

Assignments

- Week 3 Discussion
- Lab Assignment 3

Week 4: Experimental Design

Learning Outcomes

- CO-2
- CO-3
- **CO-4**

Assignments

- Week 4 Discussion
- Lab Assignment 4

Week 5: Data Measurement

Learning Outcomes

- CO-2
- CO-3
- CO-4

Assignments

- Week 5 Discussion
- Lab Assignment 5

Week 6: Data Analysis & Interpretation

Learning Outcomes

- CO-2
- CO-3
- CO-4

Assignments

- Week 6 Discussion
- Lab Assignment 6

Week 7: Data Analysis & Calculations

Learning Outcomes

- CO-2
- CO-3
- CO-4

Assignments

- Week 7 Discussion
- Lab Assignment 7

Week 8: Drawing Conclusions & the Iterative Process of Science

Learning Outcomes

- CO-1
- CO-2
- CO-3

Assignments

- Week 8 Discussion
- Lab Assignment 8

Evaluation

Your final grade in the course will be determined by your performance on the following assignments:

Discussion (8 discussions; 24% of final grade)

Each week of the course, you will provide an initial post to the discussion as assigned in the online classroom. For all discussions, each student will respond answer associated questions as posed by the discussion instructions, offer his/her analysis to the questions posed, and respond to classmate posts.

Lab Assignments (8 labs; 76% of final grade)

The eight assigned labs will consist of different virtual lab activities. Each laboratory will count 9.5% toward the final course grade (76% total). You will perform each of the assigned labs utilizing the lab simulations provided to you inside the online classroom and answer the questions listed on the corresponding lab assignments.

Grading:

Name	Grade %
Discussions	24.00 %
Week 1: Introduction Discussion	3.00 %
Week 2: Help Tip Share	3.00 % 3.00 % 3.00 %
Week 3: Help Tip Share	3.00 % 3.00 % 3.00 %
Week 4: Help Tip Share	3.00 %
Week 5: Help Tip Share	
Week 6: Help Tip Share	
Week 7: Help Tip Share	
Week 8: Help Tip Share	
Quizzes	76.00 %
Lab 1 Assessment	9.50 %
Lab 2 Assessment	9.50 %
Lab 3 Assessment	9.50 %
Lab 4 Assessment	9.50 %
Lab 5 Assessment	9.50 %
Lab 6 Assessment	9.50 %
Lab 7 Assessment	9.50 %
Lab 8 Assessment	9.50 %

Materials

Book Title: There are no required books for this course.

Author: NOTE Publication Info: ISBN: NTR

Required Technology

• See the Technology Requirements section of the undergraduate catalog for the minimum hardware and software requirements.

• <u>Microsoft Office 365</u> is available to APUS students for free. To sign up, visit. If you have questions about accessing the software, please contact Classroom Support at classroomsupport@apus.edu.

Course Guidelines

Citation and Reference Style

• Attention Please: Students will follow the APA Format as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA Format.

Tutoring

• <u>Tutor.com</u> offers online homework help and learning resources by connecting students to certified tutors for one-on-one help. AMU and APU students are eligible for 10 free hours* of tutoring provided by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter Resource Library offering educational resources, worksheets, videos, websites and career help. Accessing these resources does not count against tutoring hours and is also available 24/7. Please visit the APUS Library and search for 'Tutor' to create an account.

LATE WORK

The University encourages all work to be completed according to the course schedule. The University Late Work Policy can be found in the Student Handbook <u>here</u>.

Turn It In

• Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. This is automatically processed through the Assignments area of the course.

Academic Dishonesty

• Academic Dishonesty incorporates more than plagiarism, which is using the work of others without

citation. Academic dishonesty includes any use of content purchased or retrieved from web services such as CourseHero.com. Additionally, allowing your work to be placed on such web services is academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

Submission Guidelines

• Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc) See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.

Disclaimer Statement

• Course content may vary from the outline to meet the needs of this particular group.

Communicating on the Discussion

- Discussions are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting time after which the instructor will grade comments, it is not sufficient to wait until the last day to contribute your comments/questions on the discussion. The purpose of the discussions is to actively participate in an on-going discussion about the assigned content.
- "Substantive" means comments that contribute something new and hopefully important to the discussion. Thus a message that simply says "I agree" is not substantive. A substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.
- As a class, if we run into conflicting view points, we must respect each individual's own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.

Identity Verification & Live Proctoring

- Faculty may require students to provide proof of identity when submitting assignments or completing assessments in this course. Verification may be in the form of a photograph and/or video of the student's face together with a valid photo ID, depending on the assignment format.
- Faculty may require live proctoring when completing assessments in this course. Proctoring may include identity verification and continuous monitoring of the student by webcam and microphone during testing.

University Policies

Student Handbook

- Drop/Withdrawal policy
- Extension Requests
- Academic Probation
- Appeals
- <u>Disability Accommodations</u>

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.

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