



## **NAT114 Survey of Science (3 credit hours) Course Syllabus**

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### **Course Description**

A general science course that entails a brief overview of the major science disciplines of biological science, earth science, physics, and chemistry. The student will be able to demonstrate knowledge of basic concepts and principles of biology, earth/space science, chemistry, and physics and demonstrate and understanding for the process of scientific discovery and their implications in our society.

### **Course Learning Outcomes**

By the end of this course, you will be able to:

1. To understand basic concepts and key ideas in science.
2. To differentiate and have an understanding of the living and the non-living world.
3. To reason and think logically.
4. Develop new ways of thinking about the environment.
5. To analyze and explain patterns and cycles of natural systems and the relationships between them.
6. To apply scientific knowledge to solve basic life problems.
7. To appreciate the role of science in everyday life.

### **Required Textbook(s) and Resources**

For this course you will need to obtain the following materials:

Tillery, B., Enger, E., Ross, F., Slater, T., & Slater, S. (2022). *Integrated science* (8th ed.). McGraw-Hill. ISBN13: 9781260721485

Be sure to also review the weekly **Explore** sections for additional library or web resources. For access to databases, research help, and writing tips, visit the [Tiffin University Library](#). You might consider registering for one of the library's many webinars on library research, source evaluation, copyright, and other topics, at the [Library Events - Upcoming Events](#) web page. For further assistance email a librarian, at: [library@tiffin.edu](mailto:library@tiffin.edu).

## Time Commitment

Effective time management is possibly the single most critical element to your academic success. To do well in this online class you should plan your time wisely to maximize your learning through the completion of readings, discussions, and assignments. Because of our accelerated, seven-week term, TU online courses are designed with the expectation that you dedicate a little over **six (6)** hours per credit hour to course activities and preparation **each week**. For example, for successful completion of a three-credit, seven-week online course you should reserve roughly **twenty (20) hours per week**.

To help plan your time and keep on track toward successful course completion, note the distinctive rhythm of assignment due dates:

1. All times assume Eastern Time (GMT-4).
2. Weeks begin at 12:00 a.m. ET on Monday and end at 11:55 p.m. ET on Sunday.
3. Unless otherwise noted, initial assignments or discussion posts are due by **11:55 p.m. ET on Wednesdays**.
4. Additional assignments or follow-up discussion posts are due by **11:55 p.m. ET on Saturdays, and**
5. Major assignments and reflections are typically due by **11:55 p.m. ET on Sundays**.

## Learning Activities

The assignments for this course will consist of content quizzes, content assignments, and project/writing assignments. Students will be expected to use higher level thinking to apply what they have learned during the week to these assignments. The content quizzes this semester will be structured around the book and the chapters that are to be read. The content assignments will be designed to show your understanding of the content from the week by applying what you have learned to various problem types. Finally, you will be asked to complete an assignment where you are asked to describe how the week's content applies directly to your life.

As a student of science you will be asked to describe, explain, and apply weekly concepts to various different project types. This semester you will be asked to reflect and write a paper where you describe how properties of physics directly relate to your daily life. You will also be

asked to explain, and defend how and why chemicals are important to your daily life. Lastly, you will be asked to articulate and reflect on the importance of the biosphere to our natural world. The projects that are mentioned above were designed so that you will be able to analyze, and apply course content and concepts to real-world issues and problems. These assignments were designed to align specifically with course objectives and concepts, but also for you to appreciate science in the natural world.

## Grading

The chart below identifies the individual contributions from each type of activity, per week.

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Total
<b>Activity 1.1</b> (n.a.) <b>Assignment Practice</b> Activity 1.1 (25)	<b>Assignment Practice</b> Activity 2.1 (25)	<b>Assignment Practice</b> Activity 3.1 (25)	<b>Assignment Practice</b> Activity 4.1 (25)	<b>Assignment Practice</b> Activity 5.1 (25)	<b>Assignment Practice</b> Activity 6.1 (25)	<b>Assignment Practice</b> Activity 7.1 (25)	<b>175</b>
<b>Quiz</b> Activity 1.2 (25)	<b>Quiz</b> Activity 2.2 (25)	<b>Quiz</b> Activity 3.2 (25)	<b>Quiz</b> Activity 4.2 (25)	<b>Quiz</b> Activity 5.2 (25)	<b>Quiz</b> Activity 6.2 (25)	<b>Quiz</b> Activity 7.2 (25)	<b>175</b>
<b>Assignment</b> Activity 1.3 (85)	<b>Assignment</b> Activity 2.3 (85)	<b>Assignment</b> Activity 3.3 (85)	<b>Assignment</b> Activity 4.3 (85)	<b>Assignment</b> Activity 5.3 (85)	<b>Assignment</b> Activity 6.3 (85)		<b>510</b>
						<b>Final Assignment</b> Activity 7.3 (140)	<b>140</b>
<b>135</b>	<b>135</b>	<b>135</b>	<b>135</b>	<b>135</b>	<b>135</b>	<b>190</b>	<b>1000</b>

## Grading Scale

A: 90-100%

B: 80-89%

C: 70-79%

D: 60-69%

F: <60%

Please see the [Academic Bulletin](#) for grade appeal information.

## Course Schedule and Weekly Checklist

### Start Here

- MON: Activity 1.1: Course Anticipation - Initial Post

### Week 1: Introduction to Science and Motion

- WED: Activity 1.1: Course Anticipation - Secondary Post
- WED: Activity 1.2 Assignment: Math Practice
- SAT: Activity 1.3 Quiz: Introduction to Science and Motion
- SUN: Activity 1.4 Assignment: Physics and Scientific Measurement

### Week 2: Electricity, Temperature, and Waves

- WED: Activity 2.1 Assignment: Math Practice
- SAT: Activity 2.2 Quiz: Electricity and Waves
- SUN: Activity 2.3 Assignment: Electricity and Waves Reflection

### Week 3: Basics of Chemistry

- WED: Activity 3.1 Assignment: Parts of the Atom/Elements, Compounds, and Solutions
- SAT: Activity 3.2 Quiz: Basics of Chemistry
- SUN: Activity 3.3 Assignment: Compound Research

### Week 4: Chemical Reactions and the Universe

- WED: Activity 4.1 Assignment: Chemical Reaction/Nuclear Reaction
- SAT: Activity 4.2 Quiz: Chemical Reactions and The Universe
- SUN: Activity 4.3 Assignment: The Universe/Solar System Research

### Week 5: Properties of Earth

- WED: Activity 5.1 Assignment: Biome and Climate Assignment
- SAT: Activity 5.2 Quiz: Properties of Earth and Ecosystems
- SUN: Activity 5.3 Assignment: Earth's Ability to Produce Natural Disasters

### Week 6: Structure and Function of Life

- WED: Activity 6.1 Assignment: Nature of Living Things

- SAT: Activity 6.2 Quiz: Structure and Function of Life
- SUN: Activity 6.3 Assignment: Macromolecules and You

### **Week 7: Cellular Functions and Genetics**

- WED: Activity 7.1 Assignment: Genetics and Crosses
- SAT: Activity 7.2 Quiz: Cellular Functions and Genetics
- FRI: Activity 7.3 Assignment: Importance of Science and You

### **Tips for Success**

Successful online learning requires a good deal of self-discipline and self-direction. As seekers of the truth, we should be willing to challenge and review one another's academic work in a spirit of respectful comradery and constructiveness. Your course is a place for you to stretch and grow as you benefit from the expertise, knowledge, experience and diverse perspectives of your instructor and peers. Constructive feedback will challenge you to stretch your own thinking, thereby expanding your knowledge, understanding and application.

To get the most out of your learning experience, you should actively engage (participate) in **ALL** course activities. Course elements are arranged chronologically. To complete a week, simply work your way "down the page" through all of the course materials and activities.

### **Your instructor will expect you to:**

- Thoroughly review orientation materials (Start Here) within the first 48 hours of the term.
- Monitor your TU email account **daily** for important updates and announcements.
- Take ownership of your learning experience and act in a proactive, self-directed manner. That means:
  - Fully participate in all learning activities.
  - Complete assignments as described in rubrics or other instructions.
  - Submit all work on time and in the specified format (e.g. APA format for citations). Late assignments will be accepted at the discretion of your instructor. Penalties may apply.
  - Utilize and incorporate instructor-provided feedback to improve your work.
  - Ask questions so you can better understand course material or assignments.
  - Use the highest standards of intellectual honesty and integrity. For more information, see the TU Library guide: [Digital Literacy: Netiquette and Internet Safety](#).

- Treat others respectfully and demonstrate "netiquette" (online politeness and respectfulness) at all times. TU celebrates cultural uniqueness and expects all students to be considerate and thoughtful throughout their learning experiences.

### **You should expect your instructors to:**

- Post an introductory announcement/email at the beginning of each week to provide updates and help you prepare for the week's activities.
- Maintain an active and engaged presence in all course activities and throughout the course.
- Respond to your emailed questions within 48 hours, if not sooner.
- Clearly communicate any absences or expected non-participation due to extenuating circumstances. For example, "I will be traveling to attend a funeral this week and may not be able to respond to questions or participate in forums for a couple of days."
- When grading your work:
  - clearly indicate their grading approach (what they like to see in submitted work as well as what types of errors they tend to penalize more harshly),
  - thoroughly review and evaluate your submissions in a timely manner (in less than 5 days for most assignments), and
  - provide constructive feedback that indicates the strengths and weaknesses of your work and provides suggestions on how you can improve your performance on future assignments.
- Advocate for your success as a learner and help guide you toward successful completion of the course activities and most importantly, attainment of the course learning outcomes.

## **Accommodations**

The **Office for Disability Services** supports the institutional commitment to diversity by providing educational opportunities for qualified individuals with disabilities through accessible programs and services in compliance with Section 504 of the Rehabilitation Act of 1973 and Title III of the Americans with Disabilities Act (ADA) of 1990.

If you need reasonable accommodations due to a documented disability, contact the Office for Equity, Access, & Opportunity 419.448.3021 or via email at [disabilityservices@tiffin.edu](mailto:disabilityservices@tiffin.edu).

## **Additional Resources & Support**

For technical support, either email [moodlesupport@tiffin.edu](mailto:moodlesupport@tiffin.edu) or call the 24/7 Technical Support Call Center at 855-664-1200.

If you need to consult an academic advisor refer to TU's [Meet the Team](#) page.

For information about TU's peer tutoring program, see the Murphy Center's [Tutoring Policies and Procedures](#) page. Veterans and active military can seek assistance from TU's [Veteran and Military Services Web Page](#).

## **Comments or Concerns**

TU's online programs are designed to be student-driven: to empower you with a voice and stake in your learning. Our courses feature multiple and varied ways you can share feedback, and we invite you to become an active voice and help drive our improvement efforts. In addition to providing in-course feedback, we encourage you to submit questions or comments directly to the online team at [online@tiffin.edu](mailto:online@tiffin.edu).