

# WILKES UNIVERSITY



## **Instructors:**

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As people, we recognize the power and value - to self and community - in respecting, working with, and understanding others<sup>1</sup>. As such, we are committed to fostering an environment of acceptance and support for one another. We hold that there is no place - but especially on a college campus - for ageism, classism, racism, sexism, religionism, genderism, etc. If it is a lie, injustice, or works to create disunity, we will not tolerate it.

As academics we believe that learning never ceases. We each learn more and more every day, and this is a positive experience, as it helps us grow beyond limitations we once thought were impassable boundaries. We work to inspire hope, ignite the imagination, and instill a love of learning in those we have the privilege of teaching.

As STEM professionals we know the following to be true<sup>2</sup>:

- 1) STEM knowledge is an enabling power that can do good or bad, but does not carry instructions on how to use it.
- 2) With STEM knowledge comes a deeper, more wonderful mystery, luring one on to penetrate deeper still. There is adventure in STEM disciplines.
- 3) We are imbued with a freedom to doubt. If we want to solve a problem we have never solved before, we must leave the door to the unknown wide open. We spend most of our lives 'not knowing'. We do not fear doubt, but instead welcome and discuss it. We demand this freedom as our duty to all coming generations.

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<sup>1</sup> In this context, we refer to "the other", meaning those outside of our own generalized identity groups. Especially relevant to this term is 'intersectionality'.

<sup>2</sup> Taken and inspired by a lecture given by Richard Feynman in 1963 at the University of Washington.

**Course Title:** Freshman Year Foundations - Getting down with Gravity

**Course Number:** FYF 101 - F

**Course Credit:** 3 credits

**Class Time:** 2:00pm-4:50pm

**Classroom:** Dart Center (DDD) 201

**Course Description:** The mission of the First-Year Foundations Program is to provide rigorous learning experiences that challenge first-year students to develop the strategies essential for a successful transition into the Wilkes campus community. Each section of FYF is unique in content and constitutes a special topics course in which faculty members are encouraged to explore topics that are of special interest to them. All sections of FYF, regardless of specific topic, share a common core of objectives that facilitate significant learning experiences (inside and beyond the classroom) by which first-year students develop self-knowledge as learners and members of an academic community, intellectual curiosity, openness to diversity, and a capacity for lifelong learning and civic responsibility. Activities designed to foster and develop effective writing, critical thinking, and information literacy skills are integral components of all FYF courses. In addition, the FYF Program connects students to a wide variety of University resources, including the advising and tutoring services of University College, the extensive holdings and services of the Farley Library, and the rich array of cultural events sponsored by the University.

**Section Description:**

“I’ve been noticing gravity since I was very young” ~Cameron Diaz

We all do it. We all test to make sure gravity is still working. Some might say that we just face-planted, or slipped, but they would be wrong. We are merely engaging in science... repeatability is, after all, a central tenet of scientific dogma. This course is an interdisciplinary approach to understanding that “thing” that keeps us down to Earth: Gravity. Students will engage in qualitative and quantitative approaches in understanding gravitational forces. They will learn mathematical, physical, and geological concepts/methods related to gravity that will prepare them for a college experience and train their critical thinking skills.



## PROGRAM MISSION

To provide rigorous learning experiences that challenge first-year students to develop the strategies essential for a successful transition into the campus community

## PROGRAM GOALS

To facilitate significant learning experiences through which first-year students develop self-knowledge and intellectual curiosity, an openness to diversity, and a commitment to lifelong learning and civic responsibility.

**Skill Area: Written Communication** - in the form of short metacognitive reflection assignments and a term project paper.

Students will

**WC 1•** produce written texts that sustain a unifying focus with coherently-structured and logically-ordered sentences and paragraphs;

**WC 2•** control surface features such as syntax, grammar, punctuation, and spelling;

**WC 3•** present an argument in writing, with use of evidentiary examples;

**WC 4•** adopt appropriate voice, tone, and level of formality appropriate to different rhetorical situations, genres, and audiences;

**WC 5•** and engage in scholarly research-based practices and document another writer's written work and ideas, in a manner appropriate to relevant academic or professional disciplines.

**Skill Area: Oral Communication** - in the form of in/out-of-class discussions and a term project presentation.

Students will

**OC 1•** construct a relevant message supported by scholarly and sufficient research;

**OC 2•** organize message content based on an accepted and coherent organizational pattern;

**OC 3•** deliver an audience-centered presentation;

**OC 4•** use language clearly, appropriately, and inclusively and that follows to the grammatical rules of Standard American English;

**OC 5•** and effectively deliver, in an extemporaneous manner, informative, persuasive, and special occasion speeches.

**Skill Area: Quantitative Reasoning** - in the form of field data collection and preparation, and term project research and analysis.

Students will

**QR 1•** represent mathematical information symbolically, visually, numerically, and verbally, and interpret and draw inferences from mathematical models such as formulas, graphs, tables, and schematics.

**QR 2•** apply arithmetical, algebraic, geometric and statistical methods with appropriate technological tools to solve problems;

**QR 3•** think critically and apply common sense in estimating and checking answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results, judging the soundness and accuracy of conclusions derived from quantitative information;

**QR 4•** and communicate mathematical information effectively using symbols, visual, numerical, or verbal representations.

**Skill Area: Critical Thinking** - in the form of synthesis or deep-learning assignments, discussions, and a term project (paper and presentation).

Students will

**CT 1•** use critical thinking to recall relevant information accurately, and structure verbal and written message content based on an accepted and coherent organizational pattern;

**CT 2•** paraphrase, synthesize, and analyze information from multiple sources to explain concepts;

**CT 3•** analyze information and apply it to new contexts;

**CT 4•** and utilize information to formulate and support a position.

**Skill Area: Diversity Awareness** - in the form of discussions regarding the philosophy of science, science communication, and the place of science in our world.

Students will

**DA 1•** demonstrate knowledge and understanding of the diversity of the local and global communities, including cultural, social, political, and economic differences;

**DA 2•** analyze, evaluate, and assess the impact of differences in race, ethnicity, gender, socioeconomic status, native language, sexual orientation, ableism, age, and religion;

**DA 3•** and utilize perspectives of diverse groups when conducting analyses, drawing conclusions, and making decisions.

Course Assessment	Wilkes General Education Student Learning Outcomes
Homework	WC 1-5; CT 1-4
Discussions	OC 1-5; CT 1-4; DA 1-3
Fieldwork	QR 2-4
Term Project (Paper)	WC 1-5; CT 1-4; QR 1-4
Term Project (Presentation)	OC 1-5; CT 1-4; QR 1-4

**Course Grade Assessment:**

Component	Description	Percentage
Homework	Short writing assignments, quantitative problems, online discussions, surveys, etc.	20%
Attendance	Attendance and participation is mandatory for this course.	5%
Discussions	In-class and field discussions will be assessed following oral communication guidelines below.	25%
Fieldwork	A single field gravity survey will be conducted. See fieldwork guidelines below.	10%
Paper	Students will work in groups to write a term paper based on scientific research/methods (gravity survey).	30%
Presentation	Students will present (in groups) their term project, focusing on scientific methods, analysis, and interpretation.	10%



### **Course Grade Scale:**

<b>Percentage</b>	<b>GPA</b>	<b>P/F</b>	<b>Is awarded in recognition of academic achievement</b>
90.00-100	4.0	Pass	of outstanding quality
85.00-89.99	3.5		above high quality
80.00-84.99	3.0		of high quality
75.00-79.99	2.5		above acceptable quality in meeting requirements for graduation
70.00-74.99	2.0		of acceptable quality in meeting requirements for graduation
65.00-69.99	2.5		above the minimum quality required for credit
60.00-64.99	1.0		of minimum quality for credit
<60.00	0.0	Fail	below the minimum required for credit

### **Required Text:**

There are no required texts for this course. All readings will be posted through the LIVE site for this course. Make sure you have selected to receive notifications of course changes, uploads, and communications.

### **Materials:**

Students are expected to come prepared to class with pencils/pens, notebook, ruler, and an electronic device that can download apps, such as a smartphone or laptop; however, the use of such technology will be strictly monitored.

### **Written Assignments (including Quantitative Assignments):**

Students will complete written reflections, in class and out of class assignments, and additional writing assignments including a term paper. All written assignments must conform to the grammatical and syntactical standards of English grammar and must follow APA citation and referencing styles. You are advised and encouraged to seek out the services provided at the University Writing Center. Clarity of written expression will be a consideration in the grades awarded to all written work.

Quantitative assignments must also be legible, show all work, highlight the final answer, and provide a one sentence description of the answer ("The velocity at which the object will strike the ground is 10 m/s"). Any short answer questions must adhere to the writing assignment requirements.

*Assignments must be:*

- Typed (Unless otherwise specified by instructor)
- Done individually (unless otherwise noted in assignment)

- Use MLA Writing format (except for quantitative components)
- Have in them at the top of the page:
  - 1) Your name
  - 2) Course #, FYF 101 F
  - 3) Course instructor(s): Drs. Karimi, Lucent, and Chepushtanova
  - 4) Date:
  - 5) Assignment title

Unacceptable Assignment	Acceptable Assignment
<p>An assignment may be deemed unacceptable and returned to the student without grade or comment if it</p> <ul style="list-style-type: none"> <li>• is illegible</li> <li>• is disorganized in content and format</li> <li>• demonstrates lack of effort on the student's part</li> <li>• is incomplete</li> <li>• does not address the question or issue</li> <li>• demonstrates a lack of engagement in the learning process on the part of the student (including not completing preparatory reading and research)</li> </ul>	<p>An assignment is deemed acceptable if it</p> <ul style="list-style-type: none"> <li>• is legible</li> <li>• is well organized in both content and format</li> <li>• demonstrates thoughtfulness about the topic and precision of preparation of the product</li> <li>• demonstrates a serious attempt on the part of the student to analyze, synthesize, and understand the material covered</li> <li>• demonstrates that considerable effort has been applied in the completion of the assignment</li> <li>• demonstrates that an honest attempt has been made to address the question or issue posed</li> <li>• demonstrates full engagement in the learning process by the student</li> </ul>

**Class Discussions and Oral Communication:**

The format of this course will include discussion of issues raised each class period that include metacognitive reflections. Short writing exercises and various active learning strategies will be incorporated to help you formulate and refine your thoughts. *You are expected to contribute substantively to these discussions and to demonstrate self-motivation in your willingness to contribute.* In other words, don't wait to be asked a direct question; based on your reading and assignments, *come to each class prepared to contribute to the discussions.* In contributing to these discussions, you must communicate informed (by your reading and research) and reasoned thought using vocabulary appropriate to the course content and objectives and enunciate clearly. Improper and incorrect grammar and syntax will be called to the student's attention for review and correction. Repeated use of poor grammar and syntax will result in a lowering of the final grade.

It is expected that you will respect the right of others to participate actively in the class discussions and activities and that you will demonstrate your respect for the rights of others in both verbal and non-verbal modes of communication. Discussion and debate are valuable tools of learning and all have the right to contribute informed and well-reasoned thoughts.

Students will be required to present a formal oral presentation based on research and activities throughout the semester. These oral presentations will graded as part of your term project..



Unacceptable Discussions	Acceptable Discussions
<ul style="list-style-type: none"> <li>• is disorganized in content and format</li> <li>• communicates a lack of effort on the student's part</li> <li>• does not address the question or issue</li> <li>• demonstrates a lack of engagement in the learning process on the part of the student (including not completing preparatory reading and research)</li> <li>• Communicates inappropriate respect to others</li> <li>• Grammar and syntax is often inaccurate or inappropriate</li> </ul>	<ul style="list-style-type: none"> <li>• is well organized in both content and format</li> <li>• demonstrates thoughtfulness about the topic</li> <li>• communicates a serious attempt on the part of the student to analyze, synthesize, and understand the material covered</li> <li>• demonstrates that an honest attempt has been made to address the question or issue posed</li> <li>• demonstrates full engagement in the learning process by the student</li> <li>• Communicates respect to others</li> <li>• Grammar and syntax are appropriate</li> </ul>

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**Fieldwork:**

This course includes fieldwork, specifically a gravity survey across the valley. Students will be split into groups and go out into the field within those group components. Students are expected to be engaged, properly record-keep, and be willing to contribute. The University has only one gravimeter, which needs no more than 2 people to operate; however, while those two are operating the equipment, you should take note of earth materials, grab samples, describe the environment (especially the local geology). Students will rotate operation of the gravimeter.

Unacceptable Fieldwork	Acceptable Discussions
<ul style="list-style-type: none"> <li>• insufficient notes and details are recorded</li> <li>• a lack of effort on the student's part</li> <li>• relies on peers to complete the work entirely, and does not contribute</li> <li>• demonstrates a lack of engagement in the fieldwork process</li> <li>• is unprepared for fieldwork (lacking or inappropriate materials, clothing, proper footwear, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• fieldnotes are well organized in both content and format</li> <li>• shows effort on the student's part</li> <li>• actively attempts to contribute to the group experience</li> <li>• is engaged in the fieldwork process</li> <li>• is prepared for fieldwork (appropriate materials, clothing, footwear, etc.)</li> </ul>

**Respect Policy:**

It is expected that you will adapt to the college environment quickly. Each student and instructor is expected to be respectful to one another at all times. As such, you're expected to demonstrate behavior as noted in the list below. Failure to comply with this respect policy will result in disciplinary actions at the discretion of the course instructor. Students will receive one warning then a **1.0 point deduction (based on a 4.0 scale)** from the final course grade with each subsequent disregard of this policy.

Professionalism\* is demonstrated by a student who:

- uses appropriate use of verbal & non-verbal communication
- is punctual
- is reliable, dependable, accountable for one's actions
- behaves in an ethical manner
- produces quality work
- accepts constructive criticism and modifies behavior if necessary



- is cooperative – i.e. non-argumentative; willing and helpful
- is non-judgmental – student demonstrates an attitude of open-mindedness towards others and situations; does not “stereotype” others or prejudge situations
- communicates assertively – actively and appropriately engages in dialogue or discussion
- is self-directed in undertaking tasks, self-motivated
- demonstrates regard for self, peers, faculty, staff and university property
- is empathetic – demonstrates appreciation of others’ positions; attempts to identify with other with others’ perspectives; demonstrates consideration towards others
- handles stress – remains calm, levelheaded, and composed in critical, stress or difficult situations
- is an active learner – seeks knowledge; asks questions, searches for information, takes responsibility for own learning
- is confident – acts & communicates in a self-assured manner, yet with modesty and humility
- follows through with responsibilities – if task is left incomplete or problem is not resolved, student seeks aid
- is diplomatic – is fair and tactful in all dealings with peers, faculty and staff.
- is appropriately attired
- demonstrates a desire to exceed expectations – goes “above and beyond the call of duty”, attempts to exceed minimal standards and requirements for tasks/assignments/responsibilities
- utilizes time efficiently – allocates and utilizes appropriate amounts of time to fulfill responsibilities; utilizes others’ time wisely

Lack of respect for other students, professors or staff as demonstrated by comments, tone of voice, or disruptive behavior will **not be tolerated**. Everyone has a right to be heard and should be able to express their constructive comments without ridicule. When expressing opinions etc. “I” phrases should be used.

*\*This description of professionalism is adapted from Purkenson D from University of Colorado*

### **Attendance Policy:**

Points are awarded for attendance, regular and consistent attendance is expected and required since 5% of your final grade is determined by your presence and participation in classroom activities and discussions. Attendance will be taken at the beginning of each class. Classes will begin on-time. A student is considered to be absent if s/he arrives after the class is scheduled to begin. A grade of zero will be given for participation in class, and a notation to an absence from class made for any absences. You are allowed two absences without additional penalty. Absences in excess of two, however, will result in a 5% reduction of your overall final grade per absence, barring any extenuating circumstances adhering to approved University absences.

### **Food and Drink Policy:**

Bottled water only.

### **E-Mail Communication Policy:**

All electronic correspondence will be sent to the student’s Wilkes University e-mail account. No other e-mail account will be used. You are responsible for obtaining all electronic correspondence that is sent via the university account. **If we do not recognize the e-mail address, it will be automatically deleted. This is necessary for proper management of communications, and due to the number of computer viruses that are being sent via external e-mails.**

### **Cell Phones & Other Communication Devices:**

All cell phones are to be on **silent mode** during class or **turned off!** Cell phones are **NOT** to be used or answered during class time, unless otherwise stated by your instructor(s). No texting during class is allowed. You will receive a warning the first time but each subsequent disregard of this policy will result in a **10% deduction** from the final course grade.

### **Academic Honesty:**

**Academic dishonesty will not be tolerated. The punishment of cheating or plagiarism can range from a 0% on an assignment, 0.0 for the course, or expulsion from school. The severity of punishment as it applies to your assignment or course grade will be decided by the instructor(s) based on the nature of the violation. Should the violation be severe, the instructor(s) will involve University personnel outside of the classroom.**

Academic Honesty requires students to refrain from cheating and to provide clear citations for assertions of fact, as well as for the language, ideas, and interpretations found within the works of others. Failure to formally acknowledge the work of others, including Internet resources, written material, and any assistance with class assignments, constitutes Plagiarism. Cheating and plagiarism are serious academic offenses that cannot be tolerated in a community of scholars. Violations of academic honesty will be addressed at the programmatic and university levels and may result in a decision of course failure or program dismissal. (see University Student Handbook).

#### *University Statement on Intellectual Responsibility and Plagiarism*

At Wilkes the faculty and the entire University community share a deep commitment to academic honesty and integrity. The following are considered to be serious violations and will not be tolerated:

1. **Plagiarism:** the use of another's ideas, programs, or words without proper acknowledgment
2. **Collusion:** improper collaboration with another in preparing assignments, computer programs, or in taking examinations.
3. **Cheating:** giving improper aid to another, or receiving such aid from another, or from some other source.

### **Support Services of the University:**

*Academic Support:* The Learning Center, housed on the third floor of Conyngham Hall, provides free tutorial services to all Wilkes students. To contact the Learning Center: Extension 4150 or 4153 or [www.wilkes1.wilkes.edu/](http://www.wilkes1.wilkes.edu/)

*The Writing Center:* located in the lower level of Breiseth Hall, is available to all Wilkes students and provides free assistance in all aspects of writing and communication, including the required MLA format. To contact the Writing Center: Extension 2753 or 4536 or [www.wilkes1.wilkes.edu/writing](http://www.wilkes1.wilkes.edu/writing)



*Day Care Services:* To preserve the adult learning environment of the university classroom, young children should not be in class with parents or caregivers. Children should also not be left to wait in the lounges or halls on the campus. The University provides partially subsidized day care services with a group of approved local providers to full-time students. The service offers regular day care services at a reduced fee to students. Children must attend on a scheduled basis to be eligible for the reduced rate. Day care services are coordinated through the Learning Center located on the third floor of Conyngham Hall.

*Disability Services:* If a student has a disability that qualifies under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act and requires accommodations, he/she should contact the Disability Support office within University College for information on appropriate policies and procedures. The Disability Support office is located on the third floor of Conyngham Hall, Room 311 ([sandra.rendina@wilkes.edu](mailto:sandra.rendina@wilkes.edu)).

**Read the syllabus carefully to be sure that you understand all of the requirements of this course.**





Course Schedule for Fall 2018\*. Note that the schedule is subject to change. When changes occur, students will be notified via email. Please check your email regularly.

<b>Week</b>	<b>Tuesday</b>	<b>Class topic</b>	<b>Assignment</b>	<b>Other Topics</b>
<b>1</b>	8/28/18	Syllabus Overview, Introduction, and Nature of Science	OpenMind 1-3, Reflection/Metacognition	
<b>2</b>	9/4/18	Beginnings of the Universe and Gravity (ending with early Earth)	OpenMind 4-5, Reflection/Metacognition	
<b>3</b>	9/11/18	Mass, Distance, Time	Units, Sizes, Functions, and Graphs	
<b>4</b>	9/18/18	Velocity, Acceleration, Force Vectors	Reflection, Experiment	Bystander Awareness
<b>5</b>	9/25/18	Force Vectors, Physics of Gravity, Calculating Error	Errors and Graphing, Reflection	
<b>6</b>	10/2/18	Physics of Gravity, Universal Gravitation	Reflection	Registrar
<b>7</b>	10/9/18	Black Holes, Gravity and the Earth	Tidal Corrections, Black Hole Reading/Reflection	Library
<b>8</b>	10/16/18	<del>Flat Earth</del> , Logic/Fallacies, Shape of the Earth, Isostasy	Shape of Earth Assignment, Read Peer-Reviewed Science Paper(s)	
<b>9</b>	10/23/18	Geodesic Systems, Gravity Anomalies/Corrections: Latitude, Free-Air, Bouguer	Mapping Reflection, Correct Data	
<b>10</b>	10/30/18	Gravity Anomalies/Corrections: Bouguer, Isostasy, Buried Bodies	Gravity Interpretation	Library
<b>11</b>	11/6/18	Cause of Gravity Anomalies, Plate Tectonics	Plate Tectonics Reading, Find Papers	OpenMind Wrap-Up
<b>12</b>	11/13/18	Plate Tectonics, Earth Materials	Plate Tectonics Reflection, Online Discussion	
<b>13</b>	11/20/18	No class, follow Thursday schedule		
<b>14</b>	11/27/18	Plate Tectonics, Earth Materials, and Gravity	WORK ON PROJECT	
<b>15</b>	12/4/18	Final Project Presentations	WORK ON PROJECT	
<b>16</b>	FINALS*	Symposium (Posters)		

\*There is no final exam for this course.

Fieldwork will be schedule for groups from 10/5/2018-10/7/2018. Dates are subject to weather.