

*Goal: Graduates understand the fundamental physical relationships (laws) in the universe and are proficient in their application to diverse physical situations.*

*Specifically, graduates understand and can proficiently apply:*

*1.1 Newton's Laws*

*1.2 Conservation Principles*

*1.3 Laws of Electricity and Magnetism*

*1.4 Laws of Thermodynamics and Statistical Mechanics*

*1.5 Principles of Wave Phenomena*

*1.6 Theory of Special Relativity*

*1.7 Quantum Mechanics*

*Goal: Graduates are able to effectively write and speak concerning these fundamental laws.*

*Specifically, graduates can:*

*2.1 Deliver a coherent spoken seminar on a topic in physics.*

*2.2 Interact productively with others in investigating physical phenomena.*

*2.3 Write a clear and concise paper concerning a topic in physics.*

*2.4 Write a clear and concise lab report concerning a performed experiment.*

*Goal: Graduates possess the technical skills necessary to investigate the fundamental laws, their implications and their applications. Specifically, graduates can effectively:*

*3.1 Use mathematics to analyze physical problems.*

*3.2 Use numerical methods and software to analyze physical problems.*

*3.3 Apply laboratory techniques to investigate physical situations.*

*Goal: Graduates are aware of the importance of honesty, curiosity, healthy skepticism, mutual respect, open-mindedness and service to others in maintaining a vital community.*

*Specifically, graduates are aware that:*

*4.1 Honesty, curiosity, healthy skepticism, and open-mindedness are absolutely crucial in scientific investigation.*

*4.2 Mutual respect is essential in the collaborative project of scientific investigation.*

*4.3 Service to others is necessary to both promote a humane scientific community and to engender a peaceful and just larger human community.*