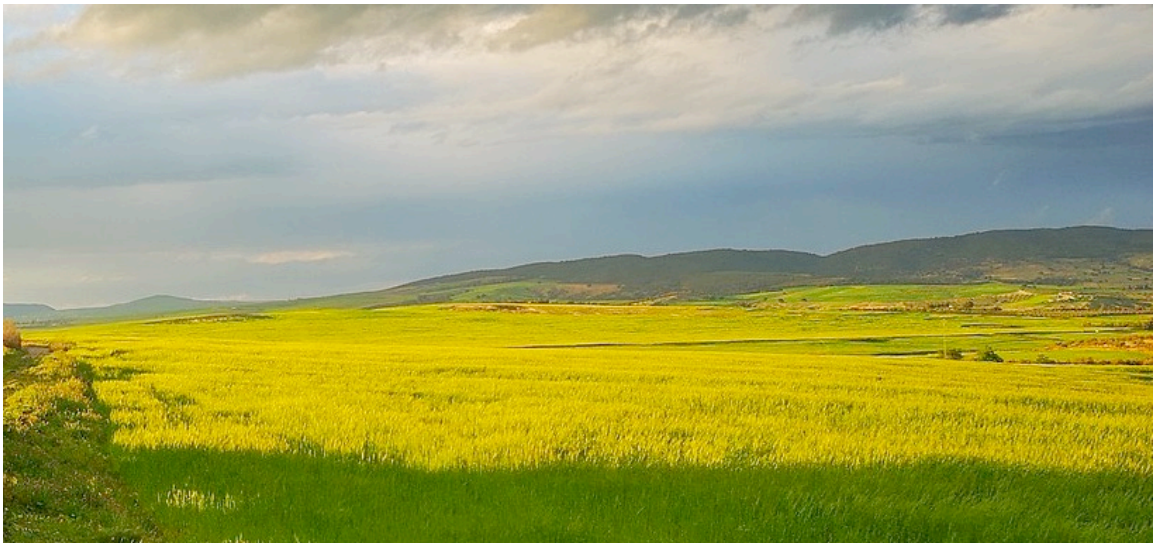
TO THE STUDENT

Welcome to your Conceptual Physics course, which is here to guide you through the *concepts* and the *experience* of physics.

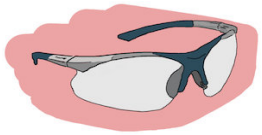
Science can be a messy business. One question easily leads to many others. With so many potential paths to follow, the scientist can be easily distracted. By analogy, consider an adventure into an uncharted jungle. In such a scenario, the value of careful documentation becomes immediately apparent. Where are you? Where are you going? What did you discover? How do you prove that you discovered it? Importantly, how do you get back to camp?

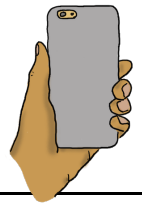
There is much value in learning physics. For the full the scientific experience, however, you should also understand the value of careful documentation.

Toward this, as you move through this course you are wise to document your observations and experiences within an accompanying composition notebook. This is particularly the case when it comes to the hands-on laboratory activities you will find within the Doc Shares of each lesson module. In the spirit of scientific exploration, we refer to this notebook as your "field journal". The quality of your work, submitted for assessment, will be a function of the quality of your field journal. This is to say, while performing any hands-on activity is surely important, even more important is your ability to document clearly that which you performed. To guide you in this endeavor, on the following pages you will find grading rubrics that will help you, and your instructor, to assess the quality of your documentation. Enjoy the journey!

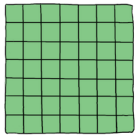


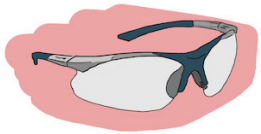
Lab Activity GRADING RUBRICS

	Excellent	Good	Satisfactory	Needs Improvement
Field Journal  	Penmanshp is good A date by every entry Author signature by every entry Witness signature by every entry All pages numbered Formal academic language always used Procedures are clear and easy to follow and can be readily reproduced by others Unerasable ink with no entries erased or blotted. Strike-thrus OK so long as striked content is discernable. No pages are torn out.	Penmanship is OK A date by most entries Author signature by most entries Witness signature by most entries All pages numbered Formal academic language mostly used Procedures are somewhat clear but sufficient for others to reproduce Unerasable ink is used with some entries blotted or made illegible. No pages are torn out	Penmanship bit sloppy Some entries dated Some entries with author signature Some entries with witness signature Most pages numbered Some use of formal academic language Procedures are somewhat clear but not sufficient for others to reproduce Erasable ink or pencil is used but no erasing or blotting out has occurred. No pages are torn out.	Penmanship lacking No entries with dates No entries with a author signature No entries with a witness signature No pages numbered Formal academic language lacking Procedures lack clarity and not sufficient for others to reproduce Entries have been erased or blotted out and at least one page has been tornout.

	Excellent	Good	Satisfactory	Needs Improvement
Pictures 	Three pictures present Student shown actively engaged in lab	Two pictures present Lab shown but student not in pictures	One picture present Student shown but not performing lab	No pictures present
Data Tables	All data uses proper significant digits All data includes units All calculations performed correctly	Most data uses proper significant digits Most data includes units Most calculations performed correctly	Some data uses proper significant digits Some data includes units Some calculations performed correctly	No data uses proper significant digits No data includes units Calculations not performed correctly

	Excellent	Good	Satisfactory	Needs Improvement
Data Analysis 	All steps to data table calculations shown All calculations include units and dimensional analysis Calculation results explained in great detail Explanations include copious information from Background section	Most steps to data table calculations shown Most calculations include units and dimensional analysis Most calculation results explained in great detail Explanations include some information from Background section	Some steps to data table calculations shown Some calculations include units and dimensional analysis Some calculation results explained, detail lacking Explanations include limited information from Background section	Few steps to data table calculations shown Few calculations include units and dimensional analysis Few calculation results explained, detail lacking Explanations do not include information from Background section

	Excellent	Good	Satisfactory	Needs Improvement
Graphs 	Includes informative title and labeled axes The slope of the line (if applicable) is calculated including units and dimensional analysis The equation of the line is present (if applicable) including units The relationships between variables is explained in great detail Explanations include copious information from Background section	Title and axes are not labeled properly The slope of the line (if applicable) is calculated including units The equation of the line is present (if applicable) (units not included) The relationships between variables is explained but not in great detail Explanations include some information from Background section	Does not include both title and axis labels Slope of the line (if applicable) is calculated but units not included The equation of the line is not present (if applicable) The relationships between variables somewhat explained Explanations include limited information from Background section	No title and nor axis labels Slope of the line (if applicable) is not present The equation of the line is not present (if applicable) The relationships between variables is not explained Explanations do not include information from Background section

	Excellent	Good	Satisfactory	Needs Improvement
Conclusion  	Proper grammar always used Formal academic language always used All required questions answered with detail Follow up activity developed by the student is performed and documented at a level of "excellent" as spelled out by the above rubrics	Proper grammar mostly used Formal academic language mostly used Most required questions answered Follow up activity developed by the student is performed and documented at a level of "good" as spelled out by the above rubrics	Proper grammar somewhat used Formal academic language somewhat used Some required questions answered Follow up activity developed by the student is performed and documented at a level of "satisfactory" asspelled out by the above rubrics	Proper grammar lacking Formal academic language lacking Few required questions answered No follow-up activity was performed.