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## ***T&L 2900 – Science Course Options:***

***Plants Inside and Out***  
***Earth's Dirty Little Secrets***  
***Because Newton Said So***  
***Body Shop***  
***Case for Space***  
***Have Forces Will Travel***  
***Body Works***  
***Eye on the Sky***  
***Everyday Waves***  
***Who Needs Plants***  
***Earth's Crustal Antics***  
***Shocking Truth***  
***Rock N' Science***  
***Just Simply Machines***

### **Courses at a Glance**

**Instructor:** Dave Seela

**Length:** 15, 30, or 45 Hours

**Dates:** Enroll Anytime – Complete in 4 months

**Number of Professional Development Credits:** 1, 2, or 3 from the University of North Dakota

### **Introduction**

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These courses allow teachers to learn at their own pace, on their own schedule, and from their own home or classroom. The courses offer a complete set of hands-on lessons centered on a single conceptual unit of instruction. By selecting to do a course, the teacher can increase their science knowledge and improve their science curriculum at the same time because the teacher, as the purchaser, can use these lessons for their personal classroom use.

For the teacher to receive their credit, there is a list of assessment requirements. Think of these like a “menu” of learning enhancements designed to help the teacher become more proficient in a specific content area. This lets the professional take advantage of their personal learning skills and methods. But more importantly they can improve their student’s performance in real science learning. The number of credits available (1, 2, or 3) is associated with the number of hours and work required to receive the credit. For example, if the elected/preferred number of credits is 3, teachers will be required to complete more lessons along with related assessments and summaries.

Last Updated: 2/5/2016

We highly encourage the trained professional to get their students involved in the research, the thinking, the learning, the experimentation, and especially the FUN of learning science in a “hands-on” approach. The teacher is encouraged to have their students become part of the process of science learning. These lessons are designed to do just that.

These self-paced courses can be started and completed at the student’s own leisure **within four months from the UND course registration date.**

## Course Objectives

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The purpose of these online courses is for participants to gain strategies and techniques to help them motivate their students about and succeed in learning applied science.

## Learning Objectives

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- to bring “real-life” applied science into the classroom
- allow teachers and students to use constructivist learning for real hands-on science
- gives the professional educator help with what is needed to enhance their natural teaching skills in a given area.
- allow for multi-level learning skills to address the concept
- train teachers in ways to identify cross-curricular ties to each science concept so students realize everything is connected
- train teachers to recognize relevant STEM applications

## Session Highlights

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After enrollees have finished a lesson, they will use the *Teacher Assessments provided along with the More and Bigger Views* of that lesson to learn more. These items are designed to allow them to get deeper into the lesson’s science content. Enrollees will discover horizontal connections into other curriculums by using the science learned. These items will provide opportunities for research, writing skills, Internet research, history extensions, social studies applications, math enrichment, engineering and language arts connections.

## Course Materials

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All course content is online within each course or will be provided in PDF form.

**Technical Requirements** – A computer with high speed internet access and an active email account are required for this course.

## Assignments

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- Do Lesson Plans
- Conduct Teacher Assessments Related to the Chosen Lesson Plans
- Do ‘More and Bigger Views’
- Reflections

Last Updated: 2/5/2016

## Grading & Grading Criteria

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**These online courses use Letter Grading (A – F) or Satisfactory/Unsatisfactory (S/U). The grading option must be selected at the time of course registration.**

Grading will be assessed on the following criteria:

A or S: 1) Produce a single spaced 1/4 page summary of each lesson stating observations and results.  
2) Produce a single spaced minimum of full page summary for each Teacher Assessment and More and Bigger Views used and researched.

B or S: 1) Produce a single spaced 1/4 page summary of each lesson stating observations and results.  
2) Produce a single spaced **1/2** to full page summary for each Teacher Assessment and More and Bigger Views used and researched.

C or S. 1) Produce a single spaced 1/4 page summary of each lesson stating observations and results.  
2) Produce a single spaced **1/4** to 1/2 page summary for each Teacher Assessment and More and Bigger Views used and researched.

F or U: Failure to comply with criteria

## Scholastic Dishonesty

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Students enrolled in a course(s) are expected to be aware of the seriousness of scholastic dishonesty. Unacceptable behavior such as submitting someone else's work as your own, cheating on exams, or plagiarizing can result in failure of the course or other sanctions. For a more detailed description of these policies, please refer to the UND Code of Student Life; Appendix IIIa-3, at: <http://und.edu/student-affairs/code-of-student-life/>