

Course Title: Ti-Inspire Strategies for the New Classroom

Instructor: Vince Doty, Ruth Case

Length: 15 hours

Dates: Rolling admissions

Prerequisites: Bachelor Degree

Number of credits: 1

COURSE DESCRIPTION:

This course will provide participants with an understanding of using the TI-Nspire handheld and computer software in the classroom. The power and potential of TI-Nspire's key mathematical and pedagogical features enable students to understand and learn Algebra 1 and 2, Geometry, and Pre-Calculus in a more tangible environment through viewing their equations and implementing their work. Participants will explore the pedagogical implications of the document model as a tool for presentation, curriculum delivery, problem solving and recording students' thought processes. They will be expected to discuss the implications of having students create and use their own documents, along with the value of exploration and investigation using pre-made documents. This course will explore assessment opportunities teachers can use in the classroom for their students provided by the new tools built into TI-Nspire to encourage the building of a community of educators.

Objectives:

1. Knowledge –at the end of this course, the student will be able to understand how:
 - a. To Open a New Graphs & Geometry Application in a document.
 - b. To Select either the Graphing view or Plane Geometry view for a graphs and geometry page in a document
 - c. To explore the menu and submenu items for a plane geometry page of a document.
 - d. differences between fear-based/anger-based discipline and respect-based discipline,
 - e. To cover the basics of Data and Statistics with Univariate data
 - f. To explore the relationships between the circumference and diameter of a circle
 - g. To switch from spreadsheet to graph and graph to spreadsheet
 - h. To explore the problem using manipulatives and the Graphs & Geometry application to model the situation.
 - i. To explore the problem by creating the graph of a function to model the problem geometrically.
 - j. To explore the problem using the Lists & Spreadsheet application to model the problem numerically.
2. Skills –after this course, a student will be able to develop how:

- a. To investigate the interior angles of a triangle.
 - b. To change document settings from radians to degrees.
 - c. To use a random number generator
 - d. To create a dot plot, box plot and histogram for a set of data and to change from one plot type to another
 - e. To capture data manually and automatically
 - f. To create scatter plots and models for the captured data
 - g. To insert a new problem in a document.
3. Dispositions –after this course, a student will appreciate how:
- a. To open a pre-made TI-Nspire document in my documents
 - b. To explore the relationship between coordinates of points and their locations on the coordinate plane.
 - c. To explore the relationships between the circumference area and radius of a circle
 - d. To explore the relationships of lines with their equations, slopes and intercepts.
 - e. To explore the relationships of slopes of parallel and perpendicular lines.

Session Topics (3 hours for each Class):

Class	Instructor
<ul style="list-style-type: none"> • Beginning with TI-Nspire– Introduction to Graphing 	Vince Doty, Ruth Case
<ul style="list-style-type: none"> • Introduction to Geometry, Lists and Spreadsheets, Medians 	Vince Doty, Ruth Case
<ul style="list-style-type: none"> • Relationship between Circumference and Diameter of a Circle 	Vince Doty
<ul style="list-style-type: none"> • Points, Lines, Slopes 	Ruth Case
<ul style="list-style-type: none"> • Tale of Tape, Box Volume Problem 	Vince Doty, Ruth Case

Vince Doty In the summer of 1991 I applied for an NSF grant at my Alma Mater, SUNY Brockport. The purpose of the grant was to introduce technology into the

mathematics classroom and a bonus for the institute was that each person would receive a Texas Instruments TI-81 graphing calculator. I definitely wanted a free calculator and what happened that summer changed my career. After two days of the institute I called my principal and told him that I had seen the future of the mathematics classroom and that we needed to get on board. With his support and the support of our local PTA we had a class set of TI-81's by October. I then set about to invite teachers from neighboring districts to our staff development days, this was the beginning of my professional development career. I continued to conduct staff development, using TI technology, all across Long Island throughout the 90's. Then, in the summer of 2000, my local teacher center sponsored me to attend the first Tfas training in New York State. This official connection to TI launched what has become a very exciting "post career" career. I retired from the classroom in June of 2001 and went from teaching adolescents to teaching the people who teach adolescents. In October of 2002 I became a T³ Instructor and have been delightfully busy ever since.

Ruth Casey is a T3 Contract Instructor, Math Forward Implementation Specialist for Texas Instruments, Incorporated. She is also a trainer and classroom implementation specialist for TI Math Forward and serves on the Board of Directors of the National Council of Teachers of Mathematics. Ruth has a Bachelors degree in Mathematics from the University of Kentucky and a Masters in Secondary Education from Georgetown College. Ruth was a member of the Demana/Waits C2PC (Calculator and Computer Pre-Calculus) class of '90 at the Ohio State University and was one of the original twelve instructors for the program that became T3. She is a National Board Certified Mathematics Teacher, a Presidential Awardee, a Tandy Scholar, a Christa McAuliffe Fellow, and she received the T3 Leadership Award in 2004.

Methods of Instruction:

Percentage of Course

Credit

Methods of instruction will include

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|--------------------------------------|--------------------|
| • Individual sections (5) (15 hours) | |
| • Pre assessments (5) | 5% |
| • Graded post assessments (5) | 20% |
| • Video lectures (5) | 35% |
| • Polling questions | Included in videos |
| • Study guides (9) (60 to 100 pages) | |
| • Handouts | |
| • Projects | 40% |

Texts (included in program)

- Study guide provided in the program (200 pages)

Assignments

- Post assignments (64)

Grading:

Grading Requirements include a Lesson Plan and a Guided Reflection.

Due dates of major assignments, projects, and examinations:

Online, self-running programs can be started and completed at participants' own leisure within two months from the day they begin the course.

Final Project:

Math Lesson Planning Activity

100 points

The project will consist of constructing, implementing, and evaluating a lesson plan that incorporates the strategies and techniques emphasized in the KDS video presentations.

The assignment should contain the following information:

- A description of the classroom environment (e.g. grade level, student/teacher ratio, etc.)
- The proposed lesson plan, incorporating strategies and techniques emphasized in the KDS video presentations.
- The desired or expected outcome of following the new lesson plan.
- An evaluation of the lesson plan and its effect on student learning, attitude, etc. Did the results match your expected outcome? Why or why not?

The assignment should be no more than 4 pages in length.

Typing the document, using APA format:

1. Use the standard Cover Page and submit to your course facilitator. All assignments are done in 12 pt. Times New Roman font and in APA, 5th Edition format.

2. Add a Reference page that lists items of the authors' works cited in your document. Use APA format for the items.

Scoring Rubric for Assignment

Total Value: 100 Points

Content of Paper – Value: 60 points – Copy of your lesson plan, your reflections, and the peer reviewer's feedback.

Quality of Writing – Value: 30 points – Written work shows superior graduate quality in verbal expression, attention to detail, and correct application of the conventions of the English language. In students' written work, paragraphing is appropriate with clear thesis statements and supporting details. Sentences are clear and concise. Students vary sentence structure making use of subordinate clauses. Transitional words and phrases are used effectively. Points and ideas are well organized. Word choice is effective. English language conventions are applied correctly (i.e. spelling, capitalization, punctuation, agreement, pronoun usage, sentence structure).

Format - Value: 10 points – Cover Page, Reference Page and where applicable, citations and references are used correctly and consistently, with clear efforts made to include a wide range of relevant works. For any work requiring citations, students refer to a wide range of suitable sources. All non original ideas are cited correctly and referenced in a reference list. All works in the reference list are cited in the text. Students should follow the Writing Format and Style as required by their institution. Should the student not have a home institution, they will follow the APA Format and Style Manual, 5th Edition.