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FREE PD Event

Venue: Mount Waverley Secondary College – Middle & Senior Campus
Lechte Road, Mount Waverley, Vic

Date: Tuesday , 29th November 2016

Program:

Registration:	7:50am – 8:25am	Theatre A2 Lobby
Welcome:	8:30am – 9:10am	Theatre A2
Session 1:	9:15am - 10:30 am	Workshop Choices: A,B,C,D,E
Morning Tea:	10:30am - 10:55am	
Session 2:	11:00am - 12:15pm	Workshop Choices: F,G,H,I,J
Session 3 or Lunch A:	12:15pm – 1:15pm	Workshop Choices: K,L,M,N or Lunch A
Session 4 or Lunch B:	1:20pm – 2:20pm	Workshop Choices: O,P,Q,R or Lunch B
Session 5:	2:25pm – 3:40pm	Workshop Choices: S,T,U,V,W
Closing Session:	3:40pm – 4:00pm	Theatre A2

Full Session Descriptions are on the following pages.

Catering will be provided, PD Certificates and Teacher Resources will be given to each participant.

Register online at http://lecvic2016.eventzilla.net/
Registration closes 22nd November, 2016 at 7:00pm.

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Session descriptions

Workshop A: **TI-Nspire™ basics for users with limited experience**
Presenter: Frank Moya
Description: This session will cover basic features to get you started, including:

- key features and basic navigation of TI-Nspire™;
- creating, saving, opening and using TI-Nspire™ documents;
- simple numerical and algebraic computations in the 'Calculator' application;
- creating and analysing simple graphs of functions and other relations in the 'Graphs' application;
- entering statistical data in the 'Lists and spreadsheet' application and using the data to create statistical plots/graphs in the 'Data and Statistics' application

Workshop B: **Introduction to Projects with the TI-Innovator™ System using TI-Nspire™ CX CAS Technology**
Presenter: Fred Fotsch
Description: Are you interested in bringing engaging student projects that incorporate maths, coding (programing) and science into your classroom? Participate in this hands-on workshop and you will learn the skills and pedagogy needed to incorporate the new TI Innovator™ Hub technology into your curriculum. Skills practiced in this session will include writing quick TI-BASIC programs to take control of the input and output devices built directly into the Hub. Additionally, various external sensors and devices will be connected to the many ports on the Hub that illustrate the extensibility and possibilities of the system. This session will use the Nspire CAS CX handheld. Beginners welcome!

Workshop C: **Creating Dynamic Notes Pages with your Maths Methods Students**
Presenter: Haley Dureau
Description: Notes pages can be used as a teaching tool in the Maths Methods classroom, and if students are taught to create and use their own then students have a huge advantage when it comes to demonstrating knowledge and understanding of CAS technology. Hayley shares how she has used Notes pages with her Y11 and Y12 Maths Methods students across the various areas of study in the revised course design.

Workshop D: **Further Mathematics: Matrices Module**
Presenter: Russell Brown
Description: We will cover many aspects of the new Further Mathematics Matrices module using the TI-Nspire. It will include matrix terminology such as binary and permutation matrices, inverse matrices, solving simultaneous equations, dominance and communication matrices, recursion using matrices. Many hints and shortcuts will be demonstrated. A short analysis task will also be shown.

Workshop E: **Deep & Powerful Mathematics – Encouraging Students to Think**
Presenter: Jim Lowe
Description: Many traditional classroom activities focus on the application of a rule or procedure to find an answer. Often the technique required is clearly evident in the question or exercise necessitating little thinking from the student. This session will explore some techniques using the TI-Nspire™ CAS to turn routine activities into opportunities for deeper thinking and also embed some powerful mathematical ideas. The resulting activities are perfect for the differentiated classroom providing opportunities from the routine to higher order deep thinking in one activity. The activities presented range across many topics including calculations with fractions, solving equations and investigations with quadratics.

Workshop F: **Probability and Statistics for Mathematical Methods**
Presenter: Frank Moya
Description: Ways in which TI-Nspire™ CAS can be used to enhance the teaching, learning and assessment of the new content in Probability & Statistics will be explored. In particular, participants will set up simulations that could be used in teaching the concepts of sampling distributions and confidence intervals. Participants will leave with tasks and ideas that can be used in their classrooms.

Workshop G: **Introduction to Projects with the TI-Innovator™ System using TI-Nspire™ CX CAS Technology**
Presenter: Fred Fotsch
Description: This is a repeat, please refer to the description for Workshop B.

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Workshop H: **Ski resort, Bungee jumping, Functions and their Derivatives and More**
Presenter: Bozenna Graham
Description: Modelling tasks, explorations, investigations and problem solving tasks as prescribed in the Mathematics Study Design 2016-2018 for Mathematical Methods Units 1&2.

Workshop I: **Spherical Geometry – New Content in the Geometry & Measurement Module of Futher Mathematics**
Presenter: Brian Lannen
Description: Are we there yet? Great Circle distance calculations and global geometry are now included in the Geometry & Measurement module of Further Mathematics. This session shares a set of rather cool TI-Nspire™ files, student worksheets and teacher notes that are all set to use with your class. I have also written and will share another complete lesson package for the core topic of 5-figure summaries and will show participants where they can download lots more packages that cover both old and new topics of the FM course.

Workshop J: **Geometry – Where Old Meet New**
Presenter: Shane Dempsey
Description: In 2015 a large cohort of VCE Mathematics students were caught floundering over a relatively simple problem, one that could have been solved in a few seconds on their calculator. The Geometry application is a wonderfully rich dynamic environment that can be used to explore and gain a better understanding of algebra, calculus and, of course, geometry. In this workshop participants will sample some interesting problems. So come along and see where old meets new.

Workshop K: **Matrices for Further Mathematics Using TI-Nspire™**
Presenter: Neale Woods
Description: The focus of this session will be on using TI-Nspire™ CAS technology for the matrices module in Further Mathematics. The material can be used for other levels of mathematics, including courses using the non-CAS version of TI-Nspire. *You are encouraged to bring your own TI-Nspire CX handheld or laptop with the TI-Nspire™ software. Additional handhelds will be available.*

Workshop L: **Graph Transformations and Projects**
Presenter: Chris Ireson
Description: Using a Graphs, Notes Page and User Defined Functions, examine Transformations of Graphs and explore some ideas for a Project with CAS. Suitable for Year 9, 10 and Methods Unit 1 & 2.

Workshop M: **Coding = Programming = TI**
Presenter: John Bament
Description: *"Everybody should learn how to program a computer…because it teaches you how to think". Steve Jobs*
This workshop will make you "think" by producing simple programs using TI-Nspire™ technology and developing these further to include decision making, loops and subroutines. With Digital Technologies from F-10 in the Australian Curriculum, leave with the skills to code with confidence and share this knowledge with your students.

Workshop N: **Using Sport to Demonstrate Mathematical Modelling**
Presenter: Melissa Hourigan
Description: Mathematical Modelling is an integral part of problem solving in mathematics. This session will show you some tasks with a sports focus that you can use when teaching mathematical modelling.

Workshop O: **TI-Nspire™ CAS and Mathematical Methods Examination 2**
Presenter: Raymond Rozen
Description: We will look at some of the questions from the 2016 Mathematical Methods Examination 2 and ways in which users of the TI-Nspire™ CAS calculators can benefit and save time in recording solutions and checking answers. Many of the multiple choice questions and parts of extended responses questions can be solved using pre-prepared notes pages. Participants will learn how to create these notes applications which can be used to answer typical examination questions.

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Workshop P: **Diving Clowns and Racing Crabs**
Presenter: Bozenna Graham
Description: Class activities for Y9 and Y10 students to introduce a topic, explore new ideas, enhance problem solving skills and assess students' understanding.

Workshop Q: **A Tropical Logo – Explorying the Volivoli Fish with TI-Nspire™ CAS**
Presenter: Roger Wander
Description: Logos work best when they evoke positive emotion through simplicity – such is true for the Volivoli Fish. On a recent holiday in Fiji, the presenter found a logo whose mathematical properties were as intriguing as its origins were idyllic. We will use TI-Nspire™ Navigator software to share insights as we explore the geometry behind the Volivoli Fish design, and look at how TI-Nspire™ CAS enables us to pose – and answer – investigative "what if…?" questions. Mathematical curiosity required, snorkeling gear optional…

Workshop R: **An Introduction to Coding with TI-Nspire™ Technology**
Presenter: Tim Grabovszky
Description: Learn the basics of programming on the TI-Nspire™ CAS handheld and Software. We will develop some simple programs that may be stored and used at any time. No previous programming skills are required. *Please bring along your computer with TI -Nspire™ CAS software pre-loaded. TI-Nspire™ CX CAS calculators will be provided if you do not have your own.*

Workshop S: **Using the TI – Nspire™ Teacher /TI-Navigator™ Software as a powerful teaching tool for VCE Maths**
Presenter: Sanjeev Meston
Description: This workshop will focus on the TI- Nspire Teacher software as a very effective teaching tool for VCE Mathematics courses (Methods, Further and Specialist). The workshops will include the use of The Publish view feature that the Teacher and Navigator software come with. All applications (i.e. Calculator, Graphing, Geometry, Notes, Spreadsheet, Data and Statistics) will be used during the sessions. We will also look at the use of text boxes, use of images, Inserting media files and Hyperlinks. Plus, a lot more..... *It is recommended that participants bring their laptop for this session with the TI-Nspire™ Teacher or TI-Navigator software installed on it. The trial version of Teacher / Navigator software can be installed if you already don't have it on your laptop.*

Workshop T: **Create a Drawing Tablet**
Presenter: Ray Cross
Description: Tasks that are not "built in" to a technology platform have to be programmed. By writing four short BASIC programs we will turn the TI-Nspire™ into a drawing tablet. This is a nice follow-up to the "Ten Minutes of Code" that can be found on education.ti.com/aus-nz. With further minimal coding you can investigate transformations of your drawings.

Workshop U: **Time Series – Further Mathematics Core**
Presenter: Russell Brown
Description: Many aspects of the time series content in the FM Core will be covered including smoothing using moving means and moving medians to identify trends, seasonal adjustments, seasonal indices and fitting least square lines for forecasting.

Workshop V: **TI-Nspire™ CAS and Specialist Mathematics Examination 2**
Presenter: Raymond Rozen
Description: We will look at some of the questions from the 2016 Specialist Mathematics Examination 2 and ways in which users of the TI-Nspire™ CAS calculators can benefit and save time in recording solutions and checking answers.

Workshop W: **VCE Further Mathematicx- Recursion and Finance**
Presenter: Brian Lannen
Description: Experience how TI-Nspire™ CAS CX can be used to enhance student understanding of some important concepts covered in the Further Mathematics Unit 3 topic: Recursion and Financial Modelling. Showcased activities will cover the use of first-order linear recurrence relations and technology to model and analyse a range of financial situations.