2022 *LEARN.ENERGISE.CONNECT* VICTORIA PROGRAM

Time		Description	Room
7:50- 8:25		Registration	Meeting Place
8:30 - 8:45		Welcome	Meeting Place
8:55 - 10:15 SESSION 1	1A (SM)	**Title: TI-NspireTM CX II CAS and Specialist Mathematics Examination 2 2022** In this session we will look at the questions from the 2022 Specialist Examination 2 and ways in which users of the TI-Nspire™ CX II 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 or use of some lesser-known TI-Nspire™ CX II CAS commands. **Presenters: Raymond Rozen & Bozenna Graham**	Meeting Place 1
	1B (MM)	**Title: Fun with Functions and Grooving with Graphs** Are we there yet? Just move a little closer now! Is that steep enough? Have we gone too far? Let's do it all again till we get it right. What goes up sometimes doesn't go down. Properties of functions and graphs will be investigated utilising the dynamic features of the TI-Nspire™ CX II CAS technology to help students visualise and understand key concepts of the Mathematical Methods course. The point of inflection gets special attention as it's now specifically mentioned in the revised Study Design. Possible suggestions about how these ideas can be incorporated into an Investigation/Exploration Task will be discussed. **Presenter: Stephen Crouch**	Meeting Place 2
	1C (GM)	**Title: Mathematical Investigations – Statistics and Recursion** This session looks at how the functionality of the TI-Nspire™ CX II CAS Calculator can be used to efficiently perform calculations when undertaking a mathematical investigation. It will focus on how to use applications such as Lists and Spreadsheets, Notes and Graphs within the page structure of a problem. "Live" documents allow for the efficient calculation of key results when undertaking a Mathematical Investigation. This is a hands-on workshop where participants will learn the skills to develop their own resources. **Presenter: Craig Browne**	Meeting Place 3
10:15- 10:40		Morning Tea	
10:45 - 11:55 SESSION 2	2A (SM)	**Title: Ideas for teaching logic, algorithms and proof** In this session we will offer ideas on how TI-NspireTM CX II CAS technology can be used to augment the effective teaching and learning of truth tables, algorithms and proof. **Presenters Raymond Rozen & Peter Flynn**	Meeting Place 1
	2B (MM)	**Title: Nspired Calculus for VCE Maths Methods in 2023** The revised VCE Mathematics Study Design 2023-2027 features new content in both differential and integral calculus descriptions for Mathematical Methods. These are the Central Difference Approximation (for approximating the gradient of the tangent to a curve) and the Trapezium Rule (for approximating the area under a curve). In this session, we'll see how TI-Nspire's integrated applications of Notes, Graphs and Lists & Spreadsheet can be used to provide symbolic and visual meaning for these concepts, as well as provide a springboard for student investigations. Want to deepen student understanding and provoke those important "What if…?" questions? Come along as we explore what this can look like in your classroom. **Presenter: Roger Wander**	Meeting Place 2
	2C (GM)	**Title: How to create Library Functions** In this session participants will learn how to create simple library functions that perform efficient calculations. These resources are very useful when analysing data from mathematical investigations as well as answering exam style questions. Library functions will be created for use in the Statics and Recursion modules. This is a hands-on workshop where participants will learn the skills to develop their own resources. **Presenter: Craig Browne**	Meeting Place 3
12:00 - 13:10 SESSION 3	3A (SM)	**Title: New topics in Specialist Mathematics** In this session we will cover a selection of Specialist Mathematics topics that have been included into the new VCE Study Design. These topics include recursive sequences and relations, binary numbers, angles between planes, integration by parts and surface areas of solids of revolution. The focus will be on using TI-NspireTM CX II CAS technology to enhance student understanding of this new content. **Presenter: Neale Woods**	Meeting Place 1
	3B (MM)	**Title:Newton's Method Algorithm and Pseudocode** This session will focus on Graphical analysis of Newton's Method using the TI- Nspire™ CX II CAS technology to determine the Polynomial roots and subsequently express this recursive Algorithm as a Pseudocode. We will check the code using TI-Basic and python™ on TI- Nspire to investigate the functionality of the Pseudocode. The session will also demonstrate how this learning can be extended to use it as an Investigation / Exploration task in the Methods course. **Presenter: Sanjeev Meston**	Meeting Place 2
	3C (GM)	**Title: Constructing tricky graphs in General Mathematics** Most teachers and students can construct the standard graphs required for the General Mathematics course. Some graphs are harder to construct, such as parallel plots of different types, graphing the long-term behaviour using transition matrices, or showing how loan balances change over time. In this session participants will learn how to construct such graphs and discuss the value of them for student learning. **Presenter: David Tynan**	Meeting Place 3
13:15 - 14:00		LUNCH	
14:05 - 15:15 SESSION 4	4A (SM)	**Title: Vector calculus and new vectors content** In this session, we look at how TI-NspireTM CX II CAS technology can be used to enhance the teaching and learning of vector calculus and some of the new vectors content. Where appropriate, tips for efficient and accurate TI-NspireTM CX II CAS use in Examination 2 will also be showcased. **Presenter: Peter Flynn**	Meeting Place 1
	4B (MM)	**Title: The use of models and simulations to solve** Modelling and Simulation are well established useful mathematical tools and there is renewed emphasis on these in the revised Study Design. In this session we will present a variety of problems from probability, and you will use TI-Nspire CX II CAS technology to conduct simulations to illuminate and solve these problems. The problems and solution techniques you learn could also serve as a solid launchpad for the extended investigation component of Maths Methods. problems in Mathematical Methods. **Presenter: Brian Lannen**	Meeting Place 2
	4C (GM)	**Title: Getting Started with the General Mathematics Course** In this session participants will learn how to use many of the Statistical features with an emphasis on creating graphs from inputted data. ie. Dot Plots, Box Plots, Histograms, Scatterplots. Univariate and Bivariate statistical calculations will be demonstrated. The dynamic nature of the calculator will also be explored within the lists and spreadsheet application and connecting the different application pages. The session will also briefly introduce participants to matrix calculations, linear functions, iterative processes, and the finance solver menu. **Presenter: Pam Durrant**	Meeting Place 3
15:20 - 16:30 SESSION 5	5A (SM)	**Title:Logistic differential equation** In this session, we will show how a range of TI-NspireTM CX II CAS applications can be used to enhance the teaching and learning of the logistic differential equation. We will showcase how to analyse this differential equation, and its solutions, from a numerical, a graphical and a symbolic perspective. **Presenter: Bozenna Graham**	Meeting Place 1
	5B (MM)	**Title: Nspired Probability for Mathematical Methods** This session will showcase the use of dynamic features of TI-Nspire™ CX II CAS technology in the development of mathematical concepts related to probability. The integrated suite of TI-Nspire applications will be used to illustrate and explore probability distributions of discrete and continuous random variables, as well as the distribution of sample proportions and related confidence intervals. Teachers will leave the session with activities and TI-Nspire documents that they can adapt for their own teaching, having seen how students can gain greater insight and understanding by engaging interactively with multiple representations of these important idea. **Presenter: Frank Moya**	Meeting Place 2
	5C (GM)	**Title: Matrices old and new** This session is appropriate for both the units 1&2 and 3&4 General courses and looks at some of the old and new parts of the matrices study area including transition matrices and Leslie matrices. It will cover some exam and SAC style questions and tips and tricks for working with challenging problems involving matrices. **Presenter: Isabelle Hoadley**	Meeting Place 3