Mathematics Enrichment Camp 2017

19 Aug

Saturday, 8.30am to 1.30pm

@ NUS, Faculty of Science, Lecture Theatre 25

Register by 5th August!

*** Tea break & lunch will be provided. Prizes to be won! ***

NUS National University of Singapore | Department of Mathematics
Faculty of Science

Programme

8.30am	**Registration**
9.05 am	**Welcome Address** **About the Department of Mathematics** **By Associate Professor Victor Tan** **Assistant Head, Department of Mathematics**
9.30 am	**Enrichment Talk 1 - Topology and Geometry of Surfaces** **By Professor Tan Ser Peow**
10.15 am	**Refreshments**
10.45 am	**Enrichment Talk 2 - The Exploration of Numbers** **By Dr Wang Fei**
11.15 am	**Enrichment Talk 3 - An Introduction to Data Science** **By Dr Vincent Tan**
12.00 pm	**Game/Quiz time**
12.30 pm - 1.30pm	**Lunch**
~End of Programme ~	

Abstracts

Topology and Geometry of Surfaces
By Professor Tan Ser Peow

We will give a very general introduction to the topology and geometry of closed surfaces (surfaces without boundary, for example, the sphere, or the surface of a doughnut, also called a torus). Topology is the study of these objects up to continuous deformations (for example, the sphere can be continuously deformed to the surface of a cube so they are topologically the same object), whereas one may put different geometries on the same topological object, for example, a sphere of radius one, and the surface of a cube of length one while topologically are the same have different geometries. Some of the ideas we will discuss include, orientability/non-orientability, classification of closed oriented surfaces, different geometries one can put on the torus, counting closed geodesics on the torus and some generalizations to higher genus surfaces (for example the celebrated result of recent fields medalist Maryam Mirzakhani on the growth rate of simple closed geodesics on higher genus surfaces).

About the Speaker

Tan Ser Peow has been teaching at the mathematics department at NUS since 1990. He studied in Raffles Institution and obtained his BA from Oxford University and his PhD from UCLA. His main interests are in low dimensional topology and geometry, and he is particularly fascinated by objects like straight lines (geodesics), triangles and circles in various geometries.

An Introduction to Data Science
By Dr Vincent Tan

We will discuss simple models of big datasets from a statistical perspective and give an overview of basic concepts from the perceptron algorithm to support vector machines.

About the Speaker

Vincent Tan was a former student at the Chinese High School and Hwa Chong Junior College. After an undergraduate degree at Cambridge University, he attended graduate school at the Massachusetts Institute of Technology (MIT). He is currently an assistant professor in the Department of Mathematics and the Department of Electrical and Computer Engineering.

The Exploration of Numbers
By Dr Wang Fei

Number is the most fundamental concepts of mathematics, but it takes centuries for the notion of numbers to be extended. In this talk, we will explore the discovery of numbers. The computation rules will also be introduced in both geometrical and arithmetical ways. We will see that the most familiar rules are indeed not as trivial as how they are used.

About the Speaker

Wang Fei joined the Department of Mathematics in 2006 as a teaching assistant while pursuing his PhD, and he is currently a senior lecturer at the department. He is also an executive council member of the Singapore Mathematical Society. His research area is in algebraic geometry.

Register by 5th August!

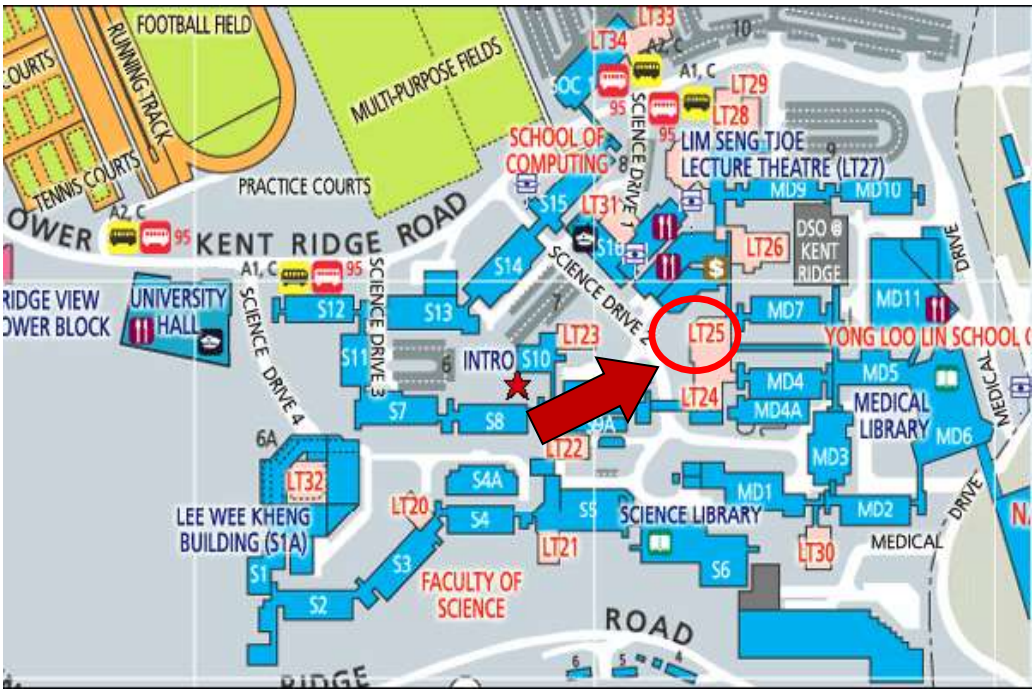
1. The Registration Fee per person is **S$10 (GST inclusive)** and this includes 1 tea break and lunch.
2. Payment is by **cheque only**. Please make cheque payable to **National University of Singapore**.
3. Cancellations are **not refundable** although participants can be substituted.
4. Please send the completed registration form (see next page) together with the cheque **by Saturday 5th August 2017,** addressed to:

   Ms Chan Lai Chee
   Department of Mathematics
   National University of Singapore
   Blk S17 Level 4
   10 Lower Kent Ridge Road
   Singapore 119076

5. For further information, please contact Ms Lynette Wong (6516 8322, matwongl@nus.edu.sg), or Ms Chan Lai Chee (6516 2762, matclc@nus.edu.sg)

Getting to the Camp

1. Take the MRT and alight at Kent Ridge MRT Station.
2. Transfer to Internal Bus Service A1 / D2 at the bus-stop.
3. Alight at the bus-stop in front of the Lim Seng Tjoe Lecture Theatre 27 in NUS.
4. Follow the map and walk to Lecture Theatre 25.
5. For an interactive map of NUS, please visit http://www.nus.edu.sg/campusmap/



Registration Form

Note: Your Name, contact number and email address are required for verification purposes and handling of enquiries pertaining to the event. Please be assured that this information will be kept confidential and will strictly be used for the purpose stated.

For Individual Registration:

Name: _____

Institution: _____

Email: _____

Phone: _____

Bank & cheque number: _____

For Group Registration: Please also provide the participants' details on the next page.

Institution: _____

No. of students: _____

Name of teacher-in-charge: _____

Email: _____

Phone: _____

Bank & cheque number: _____

For Group Registration only

Complete and return this page together with the registration form and payment. Enter the particulars on a new page if necessary.

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