

Report on my visit to Phnom Penh, May 8 – 27, 2016

RUPP - Royal University of Phnom Penh

Master of Science in Mathematics Year 2

Course: Number theory with application to cryptography

From May 8 to 27, 2015, I taught a 45 hours course **Number theory with application to cryptography** to the students of year 2 of the Master of Science in Mathematics of the Royal University of Phnom Penh (RUPP)

<http://www.rupp.edu.kh/master/mathematics/>

supported by CIMPA (Centre International de Mathématiques Pures et Appliquées)

<http://www.cimpa-icpam.org/activites-par-region/master-cambodia/>

Nine students attended the course the first week, eight only the two next weeks (Sarath Sokry prepared an exam of English and dropped).

The control

<https://webusers.imj-prg.fr/~michel.waldschmidt/articles/pdf/ControlTdnRUPP2016.pdf>

consisted of 12 questions which had been given during the course as home work, the solutions had been explained in detail. Among eight students who passed the control, one (Heang Samadi) solved correctly 10 questions and almost correctly one more. Another one (Sek Chan Thea) solved 6 of them, two students (On Radet and Pin Vanny) gave 4 correct answers, two students gave 2 correct answers, and two students gave only 1 correct answer.

My visit gave me the opportunity to help Heang Samadi to finalize his master thesis on *Structure of the multiplicative group of the units modulo 100 and application to cryptography*.

On Thursday, May 12, I gave a seminar lecture : *An elementary introduction to error correcting codes*.

<https://webusers.imj-prg.fr/~michel.waldschmidt/articles/pdf/OpenPbsNT.pdf>

The nine students of the Master program attended, as well as 8 students of BSc (3rd or 4th year of University). This Seminar is intended for the staff of the Department

of Mathematics, but only one of them (Hun Kanal, who organizes this seminar) attended.

On May 21, for the Excellence program in Mathematics at RUPP, I gave a talk on: *Some of the most famous open problems in number theory*

<https://webusers.imj-prg.fr/~michel.waldschmidt/articles/pdf/OpenPbsNT.pdf>

Ten students from 3rd and 4th year of University (BSc level) attended my talk, plus Chan Roath, one student of the Master program (Heang Samadi), and Dy Chan Eng. I had another meeting with Dy Chan Eng who is planing to pursue his studies towards a PhD in Canada.

I met Hun Kanal every day the first week, but after that he left for Korea. I met Mam Mareth when I gave the lecture to the Excellence program. I hardly met any other colleague.

On May 26, with Chan Roath we had a meeting with His Excellency Mr. Youk Ngoy, Secretary of State for Ministry of Education, Youth and Sport. He was Rector of Royal University of Law and Economic until he retired. A report will be sent to him by Chan Roath on the situation of Mathematics in Cambodia, the international support from 2005 to 2016, and the reasons for which the program will not continue in the present format but will be converted into a regional master program in Mandalay, which will concern not only mathematicians from Myanmar but also from Cambodia and Loas.

I am very grateful to **CIMPA** for the support of my travel and local expenses.



Michel Waldschmidt.

This report is available on the internet at URL

<http://webusers.imj-prg.fr/~michel.waldschmidt/articles/pdf/RptrUPP2016miw.pdf>

<http://webusers.imj-prg.fr/~michel.waldschmidt/enseignement.html>