

MEMORANDUM

DATE: May 24, 1995
TO: Prof. Dr. Wichit, Rector
FROM: Prof. Dr. Ruben C. Umaly
Prof. Dr. Ron Goforth

SUBJECT: Proposal for a SUT-Thailand-Greater Mekong Subregion Institutional Linkage Program for Human Development

As an important follow up to our exploratory mission to Vietnam, and in compliance with the MUA directive on Institution Linkage Program (copy attached), we submit for your evaluation a "Proposal for a SUT-Thailand-Greater Mekong Subregion Institutional Linkage Program for Human Development." We have developed this proposal with the support of other interested SUT faculty and believe that it is entirely consistent with the internationalization objectives of SUT.

The proposed linkage program aims to promote collaborative and cooperative education; research; and economic development and technical services within the region making available local, regional, and global resources and knowledge in response to needs. It further seeks to establish productive linkages, using sound methodologies, as quickly as possible in anticipation of rapidly changing circumstances in the region.

In this context, SUT is seeking funding support for the implementation of the program at the earliest opportunity through the MUA-DTEC Program of Institutional Linkage. If the proposal meets your approval, we are respectfully requesting an endorsement letter addressed to Dr. Kanok Wongtrangan, Deputy Permanent Secretary, MUA.

Thank you

[Handwritten signature of Prof. Dr. Ruben C. Umaly]
(Prof. Dr. Ruben C. Umaly)

Director, Centre for International Affairs

[Handwritten signature of Prof. Dr. Ron Goforth]

(Prof. Dr. Ron Goforth)

Institute for Industry Technology

[Handwritten notes in Thai script]

[Handwritten notes in Thai script]

Ref.No. 5101/ 609

Suranaree University of Technology
111 University Avenue, Muang District
Nakhon Ratchasima 30000

30 May 1995

Permanent Secretary
Ministry of University Affairs
328 Si Ayutthaya Road
Bangkok 10400
Thailand

RE: INSTITUTIONAL LINKAGE PROGRAM

In compliance with the Ministry of University Affairs project on INSTITUTIONAL LINKAGE PROGRAM aimed at countries of the of the Greater Mekong Subregion, Suranaree University of Technology through its Center for International Affairs is pleased to submit the enclosed project proposal for your kind consideration and financial assistance through the MUA-DTEC Program.

Thank you for your kind attention and consideration.

Yours sincerely,



(Prof.Dr.Wichit Srisa-an)

Rector

CC: Ms. Tipsuda Nopomongcol
Director, Foreign Relations Division
Ministry of University Affairs

COPY

WATSEM

Ref. No. 5136/056

25 January 1996

Dr. W.C. Hart

Associate Director

Center for Water Resources Studies

Technical University of Nova Scotia

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1360 Barington Street

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Canada B3J 2X4

FAX: (902) 420.7551

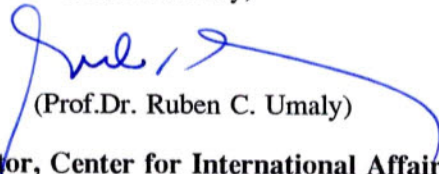
RE: SUT-CUTC INDUSTRY-BASED SEMINARS

Enclosed is a draft of the Contents of the flyer that SUT will produce for the Seminar/Workshop.

Kindly fax your comments ASAP so that they can be incorporated prior to submission to the press.

Some of the major papers may be presented by your group. Kindly specify ASAP which ones.

Yours sincerely,



(Prof. Dr. Ruben C. Umaly)

Director, Center for International Affairs

Ref. No. 5136/

January 1996

Dr. W.C. Hart
Associate Director
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1360 Barington Street
Halifax, Nova Scotia
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FAX: (902) 420.7551

RE: SUT-CUTC INDUSTRY-BASED SEMINARS

Thank you for your letter of 19 December which we received of January. I am pleased to report that SUT has formed a working committee of 4 professors in Environmental Engineering specially water resources and management and Wastewater Engineering together with 2 aquatic ecology professors (including myself) to organize the above mentioned seminar.

The date has been fixed 22-25 July 1996 which is part of the week celebration of the 6th Anniversary of SUT.

The tentative program would include:

- 21 - Arrival and Registration
- 22 July - Monday - Opening Ceremony
 - a.m. Presentation of Keynote paper:
 - p.m. Plenary Session
 - Presentation of major Papers
- 23 July - Tuesday - Concurrent Round Table Discussions and WORKSHOPS
- 24 July - Wednesday - Field Trip
- 25 July - a.m. Presentations of Results of Round Table Discussions
 - Conclusions and Resolutions/Closing Ceremony
 - p.m. - Post Conference Cultural Trips and Discussions

Among the areas that would be covered are:

- Integrated Water Resources Management
- Environmental Impact Assessment used in Water Restated Developments including industrial environmental auditing techniques.
- Urban Development: Impact on Water and Wastewater Treatment Needs
- Advances in Waste Water Treatment Technologies
- Water Use/Development Policies & Regulations

PRE- UNIVERSITY COURSES

The University of Waterloo offers special pre-university, non-credit courses in Chemistry, French, Mathematics and Physics. These courses will be of interest to people who need background for university credits in these or related subjects. They are not intended to replace the courses offered in the secondary schools, but are designed for people who would find it difficult to go back to the secondary school setting. Each course covers the material considered essential for the related first year university course.

The courses consist of a complete learning package with lecture tapes, lecture notes, assignments, assignment solutions and tutorial tapes. Students can complete an assignment and then check the work themselves by referring to the assignment solutions and tutorial tapes. The French and Science courses are designed to be completed in about four months. Each Mathematics course takes about six to eight weeks. Students may start the courses at any time and proceed at their own pace. However, they should be aware of the requirement to write the final examination within eight months of registering for the course.

There are no admission requirements for these courses; they are open to everyone.

Students are advised to check with the appropriate admissions officer to determine if grades in these courses can be used for admission purposes.

Application Information

You may apply for the pre-university courses at any time. Complete the "clip-out" form located at the end of this section. Do not use the application forms provided inside this booklet intended for credit course application.

Mail or deliver to:

Correspondence Office
University of Waterloo
Waterloo, Ontario, Canada
N2L 3G1

Fees

Chemistry 001, Physics 001	\$195.00 plus texts
French 001	\$195.00 plus texts \$ 40.00 tape deposit*
*This amount will be refunded upon return of the tapes in good condition within one month of writing the exam.	
MATH 051, MATH 052	\$100.00 plus texts
MATH 001B	\$100.00 (no texts)

Full payment by certified cheque or money order payable to the University of Waterloo, or by VISA or MasterCard, *must* be included with the application. Please allow three weeks for processing and delivery.

Examinations

The Chemistry and Physics courses each have two examinations, one at about the mid-point of the study material and one at the end. The French course and each Mathematics course have only one examination at the end. Students may apply to write the examinations when they are ready and at a time convenient to them. However, final examinations must be written within eight months of registering for the course. Students wishing to write the examination after eight months must re-register for the course. The examinations must be proctored and the student has the responsibility of arranging for a proctor who is a professional in the community (a school teacher, a minister, etc.). The student is responsible for any fees charged by a proctor. Please allow three weeks for the University to make arrangements for the examination.

Please allow two weeks from the examination date for processing examination marks.

Course Descriptions

Pre-University Chemistry (CHEM 001)

The course consists of 30 taped lectures (each about 40 minutes in length), lecture notes, seven assignments, and two examinations.

Text: Foundations of Chemistry, 3rd Canadian edition, Toon and Ellis; Publisher - Holt, Rinehart, and Winston.

The topics covered include: a review of the classifications of matter, elements, compounds, symbols, formulae; laws of conservation of mass, conservation of energy, definite composition, multiple proportions; atomic masses; the mole concept and its application to establishing formulae and to stoichiometric calculations; concentrations of solutions, gas properties and the ideal gas equation of state; composition of atoms; origin of spectra; quantization of energy; the electronic configuration of atoms and ions; ionization energies and electron affinities; periodicity in physical and chemical properties of elements and compounds; ionic and covalent bonding; the shapes of molecules; the structures of solids; liquids; phase diagrams and the energetics of phase changes; energy changes in chemical reactions;

□ Aquatic Ecosystems Management, including Impact of Industry

We have suggested including of Dr. David Swayne of University of Guelph. The use of MIS like RAISON in integrated water resources management could be an interesting general paper after the TUNS President. Somebody from Malaysia has worked extensively on RAISON and we are trying to invite him, too.

The RIZA in the Netherlands is also a good institution to include in the seminar list of presenters specially their paradigm on Integrated Water Resources Management. I am trying to get the Director of RIZA come with the support from ODA, Netherlands.

There are some engineers from the Asian Institute of Technology (AIT) who can serve as resource persons in Thailand and other SEA countries. We would therefore appreciate receiving a list of topics and name of speakers from Canada so that we can send our invitations to local speakers. We intend to produce a flyer ASAP so please send your inputs ASAP.

Is Dr. Eagle or you coming to SUT soon to discuss further the other Industry-based seminars.

Thank you.

Yours sincerely,


(Prof. Dr. Ruben C. Umaly)

Director, Center for International Affairs

rates and mechanisms of chemical reactions; chemical equilibrium; solutes and the properties of solutions, ionic equilibria in acids and bases; oxidation reduction reactions; electrochemical cells; descriptive chemistry of the halogens.

Instructors: D. Brisbin, L.J. Brubacher, D.E. Irish, and G.E. Toogood.

Pre-University French (FR 001)

The course consists of a pronunciation cassette, lecture cassettes, course notes, texts, written, oral and comprehension exercises with solutions provided, three assignments with Answer Keys, and an optional final written examination.

Text: *Français contemporain*, Claude Bédard-Claret and Joanna Campion, Publisher – Campion Language Studies, Second Edition, 1986.

- 1) Course Book I
- 2) Reference Book

Students with no previous experience in French language study or students qualifying for French 151 who wish a preparatory course may enrol in French 001. It is not necessary to take French 001 before beginning French 151, but students who have been away from language study for some time may find it helpful.

This non-credit course is designed to help the student

- 1) learn some basic French vocabulary, grammar, comprehension and pronunciation at his or her own pace.
- 2) learn to study French language; that is, to develop a method of study, understand terminology; develop listening and some speaking skills, prepare assignments, and write a language exam.
- 3) prepare for credit course French 151. French 001 covers Campion's Course Book I; French 151 continues in the same series with Course Book II and French 152 in Course Books III and IV.
- 4) build confidence in his or her ability to learn a language as an adult.
- 5) decide whether or not to pursue the study of French.

Topics included: present tense and imperative mood of verbs, adjectives, articles, subject and object pronouns, pronunciation and everyday vocabulary.

Instructor: P.A. Aplevich.

Pre-University Mathematics

Ontario Academic Courses, or their equivalents, are the normal prerequisite courses for admission to Ontario Universities. Mathematics 051, 052, and 053 include the key topics from the mathematics OAC's. They are designed for students who have been out of school for a

period of time and wish to refresh their memory, or for students who wish to gain more background for admission to certain university programs or courses.

Algebra and Geometry (MATH 051)

The course consists of thirteen taped lectures with accompanying notes, solutions to selected exercises and problems, and a sample examination.

Topics covered in the course include operations with vectors, scalar multiplications, dot and cross products, projections, equations of lines and planes, systems of equations, Gaussian elimination, operations with matrices, determinants, binomial theorem, proof by mathematical induction, complex numbers.

Text: *Algebra and Geometry*, Dunkley, Gilbert, Anderson, et. al.; Publisher – Holt, Rinehart and Winston of Canada, Limited.

Instructor: E. Anderson.

Calculus (MATH 052)

The concepts included are limits, derivatives, antiderivatives and definite integrals. These concepts will be applied to solve problems of rates of change, maximum and minimum, curve sketching and areas. The classes of functions used to develop these concepts and applications are: polynomial, rational, trigonometric, exponential and logarithmic.

You are supplied with three resources: a textbook, audio tapes, and course notes. The introduction and development of the concepts will be done using the textbook. The audio tapes amplify the development for a clearer understanding of the concepts. The notes will provide brief explanations where necessary but in the main will provide examples with solutions as an application of the concepts.

Text: *Calculus*, Dunkley, Scoins et. al.; Publisher – Holt, Rinehart and Winston of Canada, Limited.

Instructor: R. Scoins.

Finite Mathematics (MATH 053)

MATH 053 will be available in the Fall of 1992. In the interim, students are advised to take Functions (MATH 001B) which is described below.

Functions (MATH 001B)

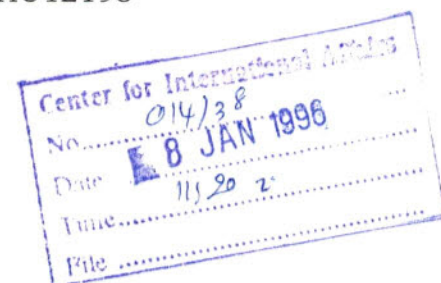
Polynomial and rational functions, Remainder Theorem, trigonometric and inverse trigonometric functions, logarithmic and exponential functions, inequalities, sequences and series.

Instructor: R. Dunkley.

December 19, 1995

FILE: WHU12195

Dr. Ruben C. Umaly
Director
Centre for International Affairs
Suranaree University of Technology
111 University Avenue
Muang District, Nakhon Ratchasina
Thailand



Dear Dr. Umaly:

Mr. Robert Eagle has requested that I respond to your fax of December 7, 1995, regarding the proposed industrial seminar. I suggest that the rationale for the seminar should be the exchange of experience among Canadian and Thai experts regarding watershed management, jurisdictional arrangements, industrial environmental auditing, and water related environmental impact assessment.

The objectives of the seminar would be:

1. To discuss 25 years of Canadian experience in comprehensive and integrated watershed management techniques.
2. To discuss the role of industry in water resources utilization and potential hydrologic/ecosystem effects.
3. Canadian methods of environmental impact assessment used in water-related developments.
4. Discussion of industrial environmental auditing techniques presently used in Canada.
5. Wastewater management options.

The Canadian experts have a broad range of experience in environmental management in the public, private, and academic sectors. They have participated in similar workshops/seminars in China, and have interests in applied research and the development of management techniques which can be applied to emerging problems. I suggest that the Canadians concentrate on the first four topics listed above with further input from Thai experts and that individuals SUT may wish to concentrate on technologies which have been found useful in your region.

To briefly review the Canadian experts I have recommended for these tasks: Dr. Bruce Mitchell is Professor of Geography at the University of Waterloo, he has extensive international experience, and is one of the leading Canadian experts on watershed management. Dr. John Underwood has twenty years of experience with government agencies, and the private sector. His research and management interests have included freshwater systems, acid rain, and environmental auditing. Ms. Catronia Moir has worked with several large watershed management projects in Canada, and is presently Senior Policy Advisor to the Nova Scotia Department of Environment. My own background includes watershed management studies, the effects of eutrophication on surface waters, and environmental impact assessment.

Based on our experience in China I would recommend a 3-4 day seminar with presentations by each of the Canadian and Thai experts, followed by discussion periods, and/or brief workshop sessions. If appropriate, a field trip might be organized to demonstrate some of the principles discussed during the seminar.

If these general thoughts fit your concept of the seminar, I will attempt to set-up a regular communication system based on e-mail by which we can determine the specific topics/titles of presentations, and the responsibilities of each of the presenters.

I look forward to hearing from you.

Very truly yours,



W.C. Hart, Ph.D.
Associate Director