ACADEMIC PROGRAMS OF ASSUMPTION UNIVERSITY
Bachelor Degree Programs (4 years)

Faculty of Architecture (Degree: Bachelor of Architecture – B.Arch.)
- Architecture
- Interior Architecture

Faculty of Arts (Degree: Bachelor of Arts – BA)
- Business English
- Business French
- Business Chinese
- Business Japanese
- Music Business
- Contemporary Music Performance
- Professional Music
- Contemporary Music Writing and Production

Faculty of Biotechnology (Degree: Bachelor of Science – BS)
- Food Technology
- Agro-Industry

Faculty of Communication Arts (Degree: Bachelor of Arts – BA)
- Communication Arts – Advertising / New Media Communication / Performance Communication
  / Public Relations
- Visual Communication Arts

Faculty of Engineering (Degree: Bachelor of Engineering – B.Eng.)
- Electrical and Electronics Engineering
- Computer and Network Engineering
- Telecommunications and Electronics Engineering

Faculty of Law (Degree: Bachelor of Law – LL.B.)
- Business Law

Faculty of Management (Degree: Bachelor of Business Administration – BBA)
- Marketing
- Management
- Finance and Banking
- Accounting
- Business Information Systems
- Integrated Marketing Communications
- Hospitality and Tourism Management
- International Business Management
- Property Valuation Management
(Degree: Bachelor of Economics – B.Econ)
- Business Economics

Faculty of Nursing Science (Degree: Bachelor of Nursing Science – BNS)
- Nursing Science

Faculty of Risk Management and Industrial Services (Degree: Bachelor of Business Administration – BBA)
- Property and Casualty Insurance
- Life Assurance
- Industrial Management
- Real Estate

Faculty of Science and Technology (Degree: Bachelor of Science – BS)
- Computer Science
- Information Technology
- Telecommunication Science
- Applied Statistics
- Technology Management

(Continued on inside back cover)
Abstracts of Scientific Papers

Presented by the Staff of

Assumption University

at

International Scientific Meetings

From July 2009 to June 2010

Prepared and published by

Office of the AU Journal of Technology

Assumption University

Bangkok, Thailand

July 2010
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Preface

Being an institute of higher learning, and the first international university in Thailand, Assumption University has a definite policy to provide quality instruction to the students, both undergraduates and graduates, and both Thai and foreign nationals. An equally important function of the University is to conduct research in all fields.

Assumption University is one of the leading universities in the field of science and technology. During the past year, several of our faculty members participated in various international meetings held in Thailand and abroad; many have also presented their papers at these meetings. The Management of Assumption University is proud of their performance and achievements.

To display and maintain a record of their endeavors and achievements, and to encourage other faculty members to make similar contributions, all abstracts of scientific papers presented at the international scientific meetings during this one-year period from July 2009 to June 2010, have been compiled and published for distribution to interested individuals and institutions. The present publication is the twelfth issue of the series of the AU Abstracts, published annually. The first one, ‘AU Abstracts - 1999’ was published in September 1999, covering the presentation period from May 1998 to June 1999. Subsequent publications of the series were published in July covering a period from July of the previous year to June of the next year.

Originally, the Office of the AU Journal of Technology who initiated this publication, was charged with the responsibility to cover the activities of five ‘technology based’ faculties and schools, namely: School of Architecture and Design, Faculty of Biotechnology, Faculty of Engineering, Faculty of Nursing Science, and Faculty of Science and Technology. As the Office of the President also presented a ‘technology related’ paper, it is included in this publication as well.

It is hoped that this small publication would be of some benefit to our readers and that it will serve a dual purpose, relaying information, as well as an encouragement to all the faculty members of the ‘technology based’ faculties and schools. It is our desire to continue to present this particular series and publication every year.

On behalf of Assumption University, I wish to express my sincere thanks to Dr. Narong Chomchalow, Editor of the AU Journal of Technology, for his initiative, as well as hard work in compiling, overseeing, and preparing the manuscripts of the AU Abstracts - 2010. I also wish to thank Dr. Dobri Atanassov Batovski, Deputy Editor of the AU Journal of Technology, who assisted in editing the abstracts of this publication.

Dr. Bancha Saenghiran, FSG
President, Assumption University
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School of Architecture and Design
School of Architecture and Design

Re-Engaging Urban Canal (ACAU 2008 – Bangkok Workshop)
Montfort Del Rosario School of Architecture and Design, Assumption University, Samut Prakan, Thailand, 26 June - 5 July 2009

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2. Bangkok Street Life as Culture on Creative Economy
   Karan Paibullert ................................................................. 4
Khlong Saen Saep: Its Historical Dimension

Satanan Chanowanna

School of Architecture and Design, Assumption University

Along the Saen Saep canal lies a number of Muslim communities. The canal was originally built to transport military freight to eastern provinces. Later it became a site for the settlement of many multi-cultural ethnic groups, due to the new route which cut through and opened up the uninhabited land from Bangkok to Bang Kaphong and to the influx of immigrants at that time. The history of the canal has been used from time to time for political discourses, which take the form of different versions of history. The communities along the canals endure through the development of Bangkok; despite changes, they still remain along the canal over time.

Keywords: Muslim communities, multi-cultural ethnic groups, Pattani, Malay, Bang Kaphong, Bang Kapi, Bang Khanak.


Full paper requisition: <chanowanna@gmail.com>
Bangkok Street Life as Culture on Creative Economy

Karan Paibullert

School of Architecture and Design, Assumption University

Urban life condition of Bangkok requires a new proposal for urban sustainability; a proposal that takes into account not only historical and social advantages but economic development as well. In order to move into the conception, one should start with a holistic interpretation of the social model of the streets of Bangkok and then move on to a new urban structure that represents the physical expression of Bangkok.

While the concept of ‘creative cities’ is rapidly attracting the interest of many developed countries round the world, much remains to be done in the developing countries, such as Bangkok, to really harness local creativities and cultures for sustainable city development. The paper attempts to illustrate and touch on the vibrant street culture of Bangkok city that represents and provides a sense of place for many Bangkokians. It is hoped that the presentation would encourage the ACAU2009 workshop participants to be inspired by its history, built environments and most importantly its socioeconomic elements that make Bangkok city as it is today.

Keywords: Urban life, historical and social advantages, creative cities.


Published in: Proc. ACAU 2008, p. 36.

Full paper requisition: <jfcreativespace@gmail.com>
Faculty of Engineering
Faculty of Engineering

The Second International Conference on Computer and Electrical Engineering (ICCEE 2009)
Dubai, UAE, 28-29 December 2009

1. Co-existence between AC-Distribution and DC-Distribution: In the View of Appliances
Kittiphan Techakittiroj and Virach Wongpaibool .................................................. 7
Co-existance between AC-Distribution and DC-Distribution: In the View of Appliances

Kittiphan Techakittiroj and Virach Wongpaibool
Faculty of Engineering, Assumption University

This work demonstrates the possibility of using the available-in-market appliances in a DC-distribution system. This demonstration also represents an alternative migration from AC-distribution to DC-distribution. DC-distribution has been shown to be more efficient and provided good power quality in a distribution system. The power supply technology in the modern appliances makes the possibility of an appliance to be used in either both AC-distribution and DC-distribution without any modification. Appliances are tested by using an AC-source as the base-line and then the test replaces the AC-source by a DC-source.

**Keywords:** DC power distribution, house-hold appliances, migration path for DC distribution, future house.

**Presented at:** The Second International Conference on Computer and Electrical Engineering (ICCEE 2009), Dubai, UAE, 28-29 December 2009.


**Full paper requisition:** <ktech@talent.in.th; virachwng@au.edu>
Faculty of Nursing Science
Faculty of Nursing Science

The 1st International Nursing Research Conference of World Academy of Nursing Science Toward Creating a New Domain of Nursing Knowledge
Kobe International Exhibition Hall, Kobe, Japan, 19 September 2009

1. The Development of Training Model for Nurses of Community through the Community Participation Approach
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The Silver Jubilee International Conference on Towards the Modern Challenges of Nursing Profession for Sufficiency Health
Christian University of Thailand, Bangkok, Thailand, 19-20 November, 2009

3. The Development of Training Model for Community Nurses Using Community Participation Approach*
   Nanthaphan Chinlumprasert and Siriporn Poonruksa
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* Same presentation as #1 above; thus no abstract is presented herein.
** Same presentation as #2 above; thus no abstract is presented herein.
The Development of Training Model for Nurses of Community through the Community Participation Approach

Nanthaphan Chinlumprasert and Siriporn Poonruksa

Faculty of Nursing Science, Assumption University

The purpose of this study was to develop a training model for community nurses and to study the potentials of local administrations and community health care facilities that would cooperate in training nurses in order to work effectively with community people. Quantitative and qualitative research methods were applied. Data were initially collected using NOC survey forms with staffs of 35 local administrations and nurses in the primary care unit of three provinces in central region. Three local administrations were randomly selected for in-depth interviews with key informants. Three exemplars of community health development system were explored to evaluate the community potential, manpower policy, and common practice. Descriptive statistics and content analysis were done. The findings revealed that 29% of respondents showed their interests and only 3.6% can offer scholarship for nursing students. Six main systems include admission; curriculum management; local administration champion; school-hospital-community collaboration, competency development; and employment were used as an input for designing training program. The current nursing curriculum was tailored to meet the special requirements and community context. Teaching and learning activities in community included student projects and mentoring system. The results will be beneficial to the NOC implementation and use as a model for future development of nursing education through community participation. To secure nursing manpower in community health care settings, local young people must be supported to be trained to serve their own community after graduation.

**Keywords:** Community nurses, community health care facilities, school-hospital-community collaboration, competency development; employment.

**Presented at:** The 1st International Nursing Research Conference of World Academy of Nursing Science Toward Creating a New Domain of Nursing Knowledge, Kobe International Exhibition Hall, Kobe, Japan, 19 September 2009.

**Published in:** -

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Bridging the Gap between Nursing Service and Education with Learning Experience on Cultural Care

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The purpose of this research was to investigate nursing students for cultural care knowledge toward clients with different cultures before and after learning about multiculturalism in health care including American, Western, Chinese, Japanese, Arab Muslim, and Asian cultures. Twelve sophomore nursing students were chosen by purposive sampling. Focus group interview questions were used for data collection before and after learning to evaluate their knowledge on how to take care of their clients from these various cultures. Generic method of content analysis was employed for qualitative data. The results revealed that being nurses who took care of multicultural clients needed to have clear understanding about clients' belief toward health including causes of illness, eating habits, color, space, and time. Moreover, folk care was the important factor influencing health care behavior.

In conclusion, participants gained more knowledge on how to take care of international clients from six cultures and positive attitude was reflected after completing learning activities. The researcher suggests that specific approach for client in each culture as well as training for professional nurse need to be initiated.

**Keywords:** Multiculturalism, health care, purposive sampling, generic method.

**Presented at:** The 1st International Nursing Research Conference of World Academy of Nursing Science Toward Creating a New Domain of Nursing Knowledge, Kobe International Exhibition Hall, Kobe, Japan, 19 September 2009.

**Published in:** -

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Perception of Future Parenthood among University Students in Thailand

Paulina Mu Pauline

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To determine how university students perceived themselves to be responsible in future parenting with mediating factors such as knowledge, attitude, and self-efficacy in one international university, Bangkok.

A cross-sectional survey with a self-administered questionnaire was applied in this study. 354 students were selected using the systematic random sampling method. The data were collected from 1 February to 28 February 2008. Simple descriptive statistics and the Chi-square test were used to analyze the data.

The students had a moderate level of knowledge ofparenthood (mean=14.53, SD=3.67). Significant relationship were found between sex of the students and perception of future parenthood (p=<.001), knowledge and perception of future parenthood (p=<.001), attitude and perception of future parenthood (p=<.001) and self-efficacy and perception of future parenthood.

This survey result also shows that knowledge is not the only factor giving rise to perception of future good parenting; therefore further study could be useful to explore those factors in the interplay between knowledge, attitude, self-efficacy and perception of future parenthood, which can modify the students’ good perception of parenthood in the future.

Keywords: Cross-sectional survey, self-administered questionnaire, descriptive statistics, Chi-square test.


Published in: -

Full paper requisition: <paulinamupauline.@au.edu>
Stressors and Coping Strategies among AU Nursing Students

Patra Phuekphan

Faculty of Nursing Science, Assumption University

Nowadays academic stress among undergraduate students is a topic of interest for educational administrator because high level of stress is believed to affect students’ health and academic performance. Stress in nursing students comes from many sources especially academic aspect which is highly stressful for students and may lead to drop out of study program. Students cannot avoid stress but their ability to cope with these stressors is important in achieving success in the academic performance. So managing stress effectively and seeking coping strategy in an appropriate way is very important for preventing the negative effects of stress. This descriptive study was performed to explore sources of stress and coping strategies among AU nursing students. Data were collected from 154 nursing students who enrolled in year one to four in academic year 2008. Two measurements, including Student Stress Survey and Adolescent Coping Orientation for Problem Experiences Inventory, were modified and employed. Descriptive statistics were applied for data analysis by using SPSS version 15.0. Results revealed that finding new friends and work with the unfamiliar people were ranked as the main sources contributing interpersonal stress; intrapersonal sources of stress represented by outstanding personal achievement and speaking in the public; academic stressors, the highly reported stressor were associated with using second language and increasing new responsibilities; and placed in unusual situation was environmental stressor. Furthermore, coping strategies that students always used to overcome stress composed of developing self-reliance and being humorous.

Keywords: Stressors, coping strategies, nursing students, student stress survey, adolescent coping orientation, problem experiences inventory.


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Use of Oral Rehydration Therapy for Management of Children Under Five Years with Diarrhea, Ratchaburi Province, Thailand

Khaing Khaing-Gyi

Faculty of Nursing Science, Assumption University

Cross-sectional study aimed to determine the prevalence of oral rehydration therapy (ORT) use by caregivers for children under five years with diarrhea before seeking care at public hospitals and its associated factors. 254 caregivers who brought their children under five years with diarrhea seeking care at four main general hospitals in Ratchaburi Province, Thailand were interviewed using a structured questionnaire. The prevalence of ORT use for children under five years with diarrhea was performed. Bivariate analysis was performed for 12 variables and associated factors for ORT use.

The prevalence of ORT use for children under five years with diarrhea was 47.2%. Bivariate analysis revealed 12 variables were significantly associated with ORT use: caregivers with high school and above education, being government employee/others occupation, having average family income ≥8,000 baht/ month, knowing that diarrhea can be transmitted by drinking spoiled milk, unboiled water, no hand washing, dry lips in signs of dehydration, continuing breast feeding while the child got diarrhea, high perceived susceptibility, severity, low perceived barriers of ORT and having heard about ORT information. Continued interventions to increasing caregivers’ proper knowledge of diarrhea and use of ORT among poor and low educated caregivers are needed.

Keywords: Cross-sectional study, structured questionnaire, bivariate analysis, caregivers.


Published in: -

Full paper requisition: <khaingkhainggyi@au.edu>
Breast milk provides all the energy and nutrients that the infant needs for the first months of life, and it continues to provide up to half or more of a child’s nutritional needs during the second half of the first year, and up to one-third during the second year of life. Exclusive breastfeeding helps for a quicker recovery during illness. Duration of exclusive breastfeeding is important for maternal and child health. Baby who are non-exclusively breastfed were two-fold increased as compared to exclusive breastfed for risk of dying from diarrhea and pneumonia.

This study aims to determine the prevalence and factors related to exclusive breastfeeding up to six months of infant age among mothers of children aged 6-24 months by using of the Social Cognitive Theory and Self-Efficacy Belief. Hence, these results will be beneficial for identifying the potential interventions to increase the exclusive breastfeeding rate. As the result, child mortality and morbidity can be significantly reduced.

Results showed that 94.5% of infants had been ever breastfed, but only 42.6% had initiated breastfeeding within the first hour of birth. 39.5% of infants were exclusively breastfed up to 6 months. Multiple logistic regression analysis revealed two variables were independently associated with exclusive breastfeeding: mother’s high breastfeeding self-efficacy and having lactation problems.

From this study, it was concluded that mothers’ class attaining husbands’ support for breastfeeding should apply a role model techniques for improving the mothers’ breastfeeding self-efficacy by a method of peer education to sustain and increase the prevalence of exclusive breastfeeding.

**Keywords:** Nutritional needs, self-efficacy, lactation problems, pneumonia, diarrhea, social cognitive theory, self-efficacy belief.

**Presented at:** The Silver Jubilee International Conference on “Towards the Modern Challenges of Nursing Profession for Sufficiency Health”, Christian University of Thailand, Bangkok, 19-20 November 2009.

**Published in:** -

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The Effect of Sponging Using Friction and Non-Friction on Body Temperature Reduction among Febrile Children

Pimsiri Bhusiri

Faculty of Nursing Science, Assumption University

This quasi-experimental study aimed to compare the effect of sponging and oral antipyretic therapy using friction and non-friction techniques on temperature reduction among febrile children. Participants were 249 febrile children with medical diagnoses of respiratory diseases (78.3%), gastrointestinal tract diseases (13.3%), urinary tract infection (0.8%), and others (7.5%) at Child Health Clinic in the hospital located in Bangkok. Informed consent was obtained from parents prior to the intervention. Randomized match pair technique was used to assign the participants in each intervention. Room temperature, humidity, water temperature, and sponging materials were controlled. The intervention consisted of body temperature measurement before sponging, administering paracetamol, and measuring body temperature right after sponging at 15 and 30 min. later. Inferential statistics was used to compare the body temperature after intervention. The result revealed that after 15 min. of sponging with friction, the body temperature significantly decreased, in contrast to non-friction sponging technique. It was statistically different at P 0.005 level of significance. The friction sponging technique which is combined with oral antipyretic medication was proven to be useful and appropriate in terms of application in any setting of the febrile child.

Keywords: Fever reduction, quasi-experimental study, oral antipyretic therapy, respiratory diseases, gastrointestinal tract diseases, urinary tract infection.


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Perceived Self-Efficacy, Knowledge, and Breast Self-Examination Practice among Assumption University Female Students

Patrabul Puttahraksa

Faculty of Nursing Science, Assumption University

This researched aimed to examine correlation of knowledge, perceived self-efficacy, and breast self-examination practice among Assumption University female students. The population of this study consisted of 9,684 students. The sample size was calculated by using Yamane’s formula, and 100 students were randomized to be the sample. The instrument was divided into four parts: personal data, knowledge, perceived self efficacy, and breast self-examination behavior. Content validity was examined by experts and reliability was obtained by mean of Cronbach’s coefficient alpha. The reliability of the perceived self-efficacy questionnaire was 0.987. Descriptive data analysis was used.

The results revealed that knowledge and perceived self-efficacy were in the moderate level (mean 6 from 10, and 51 from 100). 51% of students performed breast self-examination (BSE), but almost all of them performed once a year. It had no correlation between knowledge and BSE practice ($r=0.00$, $P=0.998$). The relationship between perceived self-efficacy and BSE practice was marginally significant ($P=0.01$). The findings showed that most of the samples did not have enough knowledge about BSE, had low self-efficacy, and inadequate practice. Those who had low self-efficacy should examine their breast occasionally. Therefore, the enhancing self-efficacy perception among female students should be a concern of health promoting faculty program.

**Keywords:** Yamane’s formula, Cronbach’s coefficient alpha, descriptive data analysis, personal data.

**Presented at:** The Silver Jubilee International Conference on “Towards the Modern Challenges of Nursing Profession for Sufficiency Health”, Christian University of Thailand, Bangkok, 19-20 November 2009.

**Published in:** -

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Effects of Individualized Environmental Modification Program on Neurobehavioral Organizations of Very Low Birth Weight Infants

Patcharee Juntaruksa and Veena Jirapaet

Faculty of Nursing Science, Assumption University

This study was aim to evaluate the effects of individualized environmental modification (IEM) program on neurobehavioral organizations of very low birth weight (VLBW) infants who admitted in neonatal unit. Twenty-five preterm infants weighing less than 1500 g and born before 37 weeks’ gestation were studied. All infants were served as their own control which received conventional nursing care during control period. IEM program was provided during experimental period which consists of day-night lighting, classical music and lavender scent. The activities were adjusted to the appropriate level of intensity and duration based on each infant’s responses. Naturalistic observation of newborn behavior (NONB) was used to observe infants’ neurobehavioral organization at baseline, control period and experimental period. Descriptive statistic was used to analyze infants’ demographic data. Repeated measures ANOVA was used to compare mean different of neurobehavioral outcomes of infants between control period and experimental period.

The research results showed that infants in experimental period had significantly showed better positive autonomic responses, positive motoric behaviors and positive attention behaviors comparing to control period. Additionally, infants in the experiment period sleep longer and spent fewer times in transitional and arousal states than in the control period.

In conclusion, VLBW infants were benefited from IEM program in term of neurobehavioral organization. Promotion of VLBW infants’ neurobehavioral organization admitted in a sick newborn unit can be implemented by integrated the IEM program in a routine nursing care for VLBW infants.

Keywords: Preterm infants, gestation, naturalistic observation, newborn behavior.


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Office of the President
Office of the President

The International Conference of Medicinal and Aromatic Plants (AROMED 2010)
Central Institute for Medicinal and Aromatic Plants, Lucknow, India, 21-24 February 2010

1. Using the World’s Oldest Oil as a Remedy to Cure Emerging New Diseases
   Narong Chomchalow .................................................................23
Using the World’s Oldest Oil as a Remedy to Cure Emerging New Diseases

Narong Chomchalow

Office of the AU Journal of Technology, Assumption University

Coconut oil is one of the world’s oldest oils, if not the oldest. According to the Ayurvedic script in Sanskrit, it has been used to cure illness as far back as 4,000 years ago. The Chinese had used it for more than 2,000 years to cure 69 diseases. Likewise, people from most other lands in which the coconut palms were grown have made use of it to cure all kinds of ailments for thousands of years. Although heart disease, cancer and diabetes were recorded way back in history, some of which were known since the Egyptian era, yet only recently that they were recognized as number one, two and three killers. In this paper, these diseases are referred to as emerging new diseases. Together with some brand new diseases such as HIV/AIDS, SARS, and the 2009 pandemic influenza, all of which are caused by new strains of viruses, the said diseases are all actually or potentially treated through the use of coconut oil. Its unique properties include having: (i) saturated fatty acids (SFAs), whose single bonds prevent oxidation and hydrogenation, their end products - free radicals and trans fats - of which are detrimental to health (ii) medium chain fatty acids (MCFAs) that are directly converted into energy in the liver; they also increase the metabolic rate resulting in a better conversion of food into energy and thermogenesis that stimulates the breakdown of stored fats into energy, all of which culminate in weight loss; (iii) antimicrobial property of lauric acid (C-12, 48-52%) and other MCFAs that kill pathogenic bacteria, fungi, viruses, protozoa and parasites; and (iv) antioxidants in the form of vitamin E, phenolic compounds and phytosterols that prevent oxidation from occurring. In addition to its numerous beneficial health effects, coconut oil has proven to be effective against heart disease, cancer and diabetes which are considered as emerging new diseases simply because of the adoption of modern lifestyle of the people, e.g., consuming processed foods, changing from saturated to unsaturated oils, having no exercise, staying away from sunlight, having not enough rest and too much stress, etc. Several new viral diseases occur as a result of changing climate, convenient and rapid transportation, and the raising of domesticated livestock which culminate in new strains of the viruses causing HIV/AIDS, SARS, and 2009 pandemic influenza that cannot be treated by the use of chemical drugs and antibiotics because they possess lipid coat that does not allow drugs to penetrate the viral particles, but surrender to the coconut oil, which, being lipid itself, could dissolve and break down their lipid coat, thereby penetrating them.

The author founded CDCOT in August 2007 aiming at providing proper knowledge of virgin coconut oil (VCO) and encouraging people to use it to promote health and beauty. Its activities include the publication of technical bulletins and a quarterly newsletter, giving lectures to public and academic gatherings and sharing information through television and radio broadcasting, news releases, technical seminars, etc. More than ten technical bulletins (300,000 copies) have already been published.

* Editor, AU Journal of Technology, Assumption University, and Chairman, Conservation and Development of Coconut Oil of Thailand Forum (CDCOT), Bangkok, Thailand.
CDCOT members have reached 600 within just two years and coconut oil is now “talk-of-the town” of people of all walks of life. The number of manufacturers of VCO has increased from three at the beginning to more than 100 at present, and still increases at a rapid rate as the demand of VCO has never been met. VCO worth of over 65 million Bath (US$ 2.2 million) has been exported in 2008. Although this is still a small amount as compared to other export commodities from Thailand, a ten-fold increase is expected in 2009.

**Keywords:** VCO, SFAs, MCFAs, antimicrobial, antioxidants, heart disease, cancer, diabetes, HIV/AIDS, SARS, 2009 pandemic influenza, modern lifestyle, CDCOT.

**Presented at:** The International Conference of Medicinal and Aromatic Plants (AROMED 2010), Central Institute for Medicinal and Aromatic Plants, Lucknow, India, 21-24 February 2010.

**Published in:** -

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Faculty of Science and Technology
1. Diagnosing Prostate Cancer Using Backpropagation Neural Network and Greedy Decision Procedure
   Anilkumar Kothalil Gopalakrishnan and Thitipong Tanprasert .......................... 27
Diagnosing Prostate Cancer Using Backpropagation Neural Network and Greedy Decision Procedure

Anilkumar Kothalil Gopalakrishnan and Thitipong Tanprasert

Faculty of Science and Technology, Assumption University

A novel procedure for diagnosing prostate cancer (PC) based on Backpropagation Neural Network (BPNN) is proposed. Elderly men with symptoms such as urinary retention, urinary hesitancy, urinary dribbling, burning urination, hematuria, etc. are considered as primary attributes. Prostate-specific antigen (PSA) level and Gleason score are the secondary attributes. Initial dataset is generated based on the clinical database. The BPNN assigns symptom levels of a set of patients based on their primary attributes. A greedy decision procedure predicts tumor stages of patients based on their strong symptom levels and secondary attributes. The simulation shows that the proposed procedure is an effective way for diagnosing prostate tumor stages.

Keywords: Backpropagation neural network, prostate cancer, prostate-specific antigen, Gleason score, symptom level, greedy decision procedure.

Presented at: The 7th International Joint Conference on Computer Science and Software Engineering (JCSSE 2010), Ram Khamhaeng University, Bangkok, Thailand, 12-14 May 2010.


Full paper requisition: <anil@scitech.au.edu; thitipong@scitech.au.edu>
Master Degree Programs: (2 years)

Faculty of Biotechnology
- Master of Science in Food Biotechnology - MSFBT

Faculty of Science and Technology
- Master of Science in Computer Science - MSCS
- Master of Science in Telecommunications Science - MSTS
- Master of Science in Telecommunication and Computer Network Engineering - MSCTeCNE (Joint program with South Bank University, London, UK)
- Master of Science in Information Technology - MSIT
- Master of Science in Technology Management - MSTecM
- Master of Science in Internet and Multimedia Engineering - MScIME

Graduate School of Arts
- Master of Arts in Philosophy - MAPh
- Master of Arts in Religious Studies - MARS
- Master of Arts in Teaching English as a Second Language - MATESL
- Master of Arts in Teacher Education - MATE?

Graduate School of Business
- Master of Business Administration - MBA
- Master of Science in International Business - MScIB
- Master of Science in Financial Management - MScFM
- Master of Management in Organization Management - MM
- Master of Science in Human Resources - MSchHR

Graduate School of Computer Information Systems
- Master of Science in Computer Information Systems - MSCIS

Graduate School of Computer and Engineering Management
- Master of Science in Computer and Engineering Management - MSCEM

Graduate School of Counseling Psychology
- Master of Science in Counseling Psychology - MSCP

Graduate School of Education
- Master of Education in Curriculum and Instruction - MEd
- Master of Education in Educational Administration - MEd

Graduate School of Engineering
- Master of Engineering in Broadband Telecommunications - MEng
- Master of Engineering in Power Electronics - MEng
- Master of Science in Telecommunications Management - MSTM

Graduate School of English Language Teaching
- Master of Arts in English Language Teaching - MAELT

Graduate School of Internet and E-Commerce Technology
- Master of Science in Internet and E-Commerce Technology - MSIEC

Graduate School of Philosophy and Religious Studies
- Master of Arts (Philosophy) - MA (Philosophy)
- Master of Arts (Religious Studies) - MA (Religious Studies)

Graduate School of Tourism Management
- Master of Arts in Tourism Management - MATRM

Doctoral Degree Programs
- Doctor of Philosophy in Computer Information Systems - PhDCIS
- Doctor of Philosophy in Computer Science - PhDCS
- Doctor of Philosophy in Computer and Engineering Management - PhDCEM
- Doctor of Philosophy in Food Biotechnology - PhDFBT
- Doctor of Philosophy in Information Technology - PhDIT
- Doctor of Philosophy in Philosophy - PhDPhilo
- Doctor of Philosophy in Telecommunications and Computer Network Engineering - PhD TeCNE
Assumption University of Thailand

Motto: Labor Omnia Vincit

Philosophy:

In loyalty to its Christian mission, Assumption University stands for:
- the inculcation of respect for the three institutions of the Nation: Religion, Country, the King and a democratic way of life.
- the belief that a man justifies himself and his existence by the nobility of his work.
- the commitment to be a light that leads men towards the true source of all knowledge and life.

Accreditation:

The University is fully accredited by the Ministry of University Affairs. Its graduates enjoy the privileges accorded to State University graduates. Its academic standards are accepted by the Civil Service Commission of Thailand. Assumption University is recognized in the USA and other countries and the transfer of credits from the University are accepted abroad. Graduates from the University can pursue advanced degrees anywhere in the world. Assumption University is listed in the Handbook of Universities and other Institutions of the International Association Of Universities in Paris, France.

The University is recognized by:
- The Association of Christian Universities and Colleges in Asia (ACUCA)
- The Association of Southeast Asian Institutions of Higher Learning (ASAIHL)
- The International Federation of Catholic Universities (IFCU).

Objectives and Policies:

Assumption University exists for the main purpose of serving the nation by providing scientific and humanistic knowledge, particularly in the fields of business education and management science through research and interdisciplinary approaches. To this end it aims at forming intellectual competent graduates who:
- are morally sound, committed to acting justly, and open to further growth.
- appreciate freedom of expression, imbibe right attitudes and ideologies through a careful integrated curriculum of Ethics, Science, Languages and Business Management.
- achieve academic excellence through hard work, critical thinking, and effective decision-making.