Proposal

RMIT Vietnam and AusAID

January 2010

Table of Contents

Attachments

1 Executive summary

RMIT University is establishing capacity to deliver Vietnam's first internationally recognised professional engineering education at master level through its Vietnam-based campus in Ho Chi Minh City. To support this initiative the University is seeking to collaborate with AusAID to boost the capacity of Vietnam's engineering workforce through a pilot program of in-country scholarship provision.

Funding is sought for a limited number of in-country scholarships to support the establishment of the new Master of Engineering program. The two year program to commence in 2010 is designed to help remediate skill deficiencies in graduates from local universities and address critical skills shortages in industry. Seed funding to the value of $1.5 million over a three-year period is sought for the start-up phase of the program. This represents one component of the total scholarship program with co-funding, as well as in-kind support, from industry partners (Intel and Renesas) and RMIT Vietnam contributing to the remainder of the program.

A key feature of this proposal is the opportunity for AusAID to pilot a new model of in-country scholarships in partnership with an Australian university as an extension of its international aid program. An in-country approach offers a number of advantages not least of which is the significant value for money to AusAID as total program fees are substantially less than out-of-country models. Scholarship recipients will also benefit from remaining in country by enabling them to remain socially integrated within their own cultures and providing opportunities for students who wish to stay with their families for the duration of their studies. A successful pilot will also enable AusAID to consider extending this model into other countries of strategic priority in which an Australian university campus is located.

Building capacity in the engineering workforce is a key priority for the government of Vietnam with engineering highlighted in the Vietnam Education Strategy as a major area for development. Central to this proposal is the recognition that if the gap in workforce capacity is not addressed urgently, economic and infrastructure development could be impeded in the engineering sector as organisations struggle to identify and source an appropriately skilled labour force. As the country strives to grow its economy, skill deficiencies in the workforce are increasingly apparent. Several companies that have a significant presence in Vietnam have noted the increasing challenge faced by the lack of availability of appropriately skilled graduates. While it is not claimed that a small quantum of scholarships will solve the substantial workforce gap in itself, it will enable rapid start-up of a high quality program that will serve as both a pilot scheme and a benchmark for professional engineering education, and a catalyst for professional engineering associations and activities in Vietnam. Such groups may in time have the status and capability to influence policy and regional events in the future.

Specifically, this proposal will help address the skills shortage by offering a niche higher education program at master level, not to compete with, but to build upon and enhance capabilities developed from programs offered by Vietnamese universities. In addition to the technical component of this program, the primary focus will be to develop enhanced skills in the areas of problem-solving, communication, teamwork, lateral thinking and critical appraisal to enable a more fluid integration into the workforce. With the strong integration of study and industry placements, graduates will already be attuned to the Vietnamese context, will adapt more readily to the extant technological issues, and the brain drain will be less than for overseas trained graduates. The new program has received initial endorsement from Engineers Australia which is the first step towards achieving international professional recognition as part of the Washington Accord. As a result it is anticipated that this program will serve as a benchmark for local universities to raise their programs to international standards with flow on benefits to the engineering sector as a whole, and lead to the introduction of allied engineering programs.

As the first fully foreign-owned university in Vietnam and with over ten years experience delivering education through its Hanoi and Ho Chi Minh City campuses, RMIT University is in a unique

position to partner with both the Australian and Vietnam governments to respond to these workforce and economic imperatives. The Government of Vietnam has expressed its support for the masters proposal to both build capacity and to establish the benchmark for professional engineering in Vietnam. RMIT University also has extensive experience partnering with the Australian Government to deliver programs in Vietnam in the areas of English language, law enforcement and border control, including pilot programs that have subsequently expanded to regions beyond Vietnam. This proposal presents an opportunity to expand this partnership and for the University to continue to support the Australian Government's development goals for this region.

The proposal has received the support of the Australian Ambassador to Vietnam who states that:

> "A rapid increase in international standard technical and engineering skills is vital for Vietnam to achieve its goals of economic development as a modern industrialised nation. The development of national infrastructure, energy supply and efficient communications links will all be essential to create a competitive, productive economy able to generate sustained increases in income, growth and welfare for the Vietnamese people … I believe that the developmental, practical and presentational benefits of contributing to RMIT Vietnam's proposal through Australian scholarship funding would be significant and I would encourage close and positive consideration of the proposal."

Further, it directly addresses the development priorities of government as recently expressed by the Australian Minister for Trade:

> "Australia's development assistance is targeted to the drivers of Vietnam's sustainable growth – skills, innovation and infrastructure. It is one thing to open markets, but it is another to ensure that businesses are competitive enough to take advantage of market openings. We accept that, as part of the dynamic strengthening of the bilateral relationship, it is important to ensure that our aid programs are responsive to the capacity building needs identified in Vietnam."
>
> The Honourable Simon Crean MP – 3 January 2010

2 Context

2.1 Current economic development

In line with the Millennium Development Goals to 2015, the Australian and Vietnamese Governments have been working together over recent years to reduce poverty and achieve sustainable development within Vietnam. Much of this development involves large-scale engineering and public infrastructure works, such as:

- Southern Coastal Corridor project
- Mekong transport infrastructure development
- Rural electrification distribution
- Central Mekong region connectivity
- My Thuan Bridge.

Additional projects are concentrating on the key areas of public health, sanitation and the environment.

Plant and capacity for the construction for the recently completed My Thuan span bridge – the first to be constructed over the Mekong River – was sourced largely from outside the country, as the resources required for this type of engineering construction work were not readily available within Vietnam.

Private companies are also investing heavily in infrastructure and engineering projects in Vietnam. Intel has made a USD 1 billion investment to build a semiconductor factory along the Hanoi Highway in HCMC. Other companies such as Hewlett-Packard, IBM and Sun Microsystems have rushed to open up operations in the nation that has been off limits to US business until just a few years ago. In southern Vietnam construction has begun on two large factories worth USD 50 million for Japan's Nidec Corporation. These plants will manufacture computer fan motors, desktops, step motors and optical pickup devices. Nidec President Shigenobu Nagamori has stated that this represents the first phase of its plans to build ten factories in the Saigon Hi-tech Park (SHTP). These factories will cover 33 hectares, employ 33,000 workers and will be worth a total of USD 1 billion.

There has also been significant investment by Australian companies including Worley Parsons and Strategic Marine. Strategic Marine's massive 136,500 square metre facility at the Dong Xuyen Industrial Zone in southern Vietnam was purchased in 2007. The facility now employs more than 1,100 staff and its full operating capacity will be approximately 1,500 to 2,000 staff including fabricators, welders, production supervisors and management staff.

2.2 Workforce needs

A recent quarterly review of labour trends for late 2009 in Vietnam[1] showed an upward trend in labour demand and signs of recovery in the labour market. In the second quarter of 2009 the top five industries with strong labour demand were accounting and finance, administrative and clerical, engineering, sales, and IT software. The Department of Labour, Invalids and Social Affairs (DoLISA) in HCMC, has stated that the demand for a highly skilled workforce, such as in the electricity and electronics sectors, will increase significantly over the coming years. The local government plans to develop five key industries including mechanics, electricity, electronics, information technology and chemical manufacturing.

Standing Deputy of the Ministry of Education and Trade, Mr Banh Tien Long, has acknowledged that the decision by large multinational companies to invest billions of US dollars in Vietnam for the design and manufacture of chips, computers, mobile phones and telecommunications equipment has opened the door to a new wave of investment into Vietnam for the production and export of high technology products. According to the Vietnamese government's development

[1] Signs of Recovery on the Labor Market.
http://www.navigosgroup.com/index.php/press/detail/id/57%20Thu%20August%206

targets, over the next 10 years industry workforce needs will require 500,000 highly skilled workers and nearly 20,000 engineers and technicians for the anticipated growth in the electronics industry.[2]

2.3 Current gap in workforce capacity

From 2001 to 2005, it was projected that there would be 10,000 graduates working in engineering in Vietnam. However, Vietnamese universities are not producing the educated workforce that Vietnam's economy and society demand.

Two established multinational companies within Vietnam, Intel and Renesas, are currently pursuing different models to meet this skills shortfall:

- Offshore study option – Intel has invested USD 2.4 million to send 28 candidates to Portland State University, Oregon.
- In-house training programs – Renesas has established a significant in-house program including the appointment of a local Professor of Engineering to oversee the program.

Whilst these approaches indicate the strong need and commitment of industry, they are expensive and limited to benefiting only the workforce of the particular company involved.

3 Proposed model

To address the critical engineering skills shortages detailed above RMIT University is seeking Australian Government support through AusAID to fund a scholarship program in partnership with the University and selected Vietnam-based industry partners. It is proposed that as part of a pilot program AusAID make available a limited number of in-country scholarships for a new Master of Engineering to be delivered by RMIT Vietnam to support capacity building in the Vietnam professional engineering workforce. Seed funding is sought over three years to the value of $1.5

[2] Decision of the Prime Minister. No: 75/2007/QD-TTg. Approved Master Plan to develop industrial electronic Vietnam (2010 and Vision 2020) http://translate.google.com.vn/translate?u=http%3A//vbqppl.moj.gov.vn/law/vi/2001_to_2010/2007/200705/200705280006/lawdocument_view&hl=vi&langpair=auto|en&tbb=1&ie=utf-8

million for the start-up phase of the program. This funding will be matched by contributions (both financial and in-kind) from RMIT Vietnam and industry partners (Intel and Renesas) with the respective roles summarised below:

- RMIT University – delivery of a new higher education Master of Engineering program in Vietnam and provision of scholarships and learning and teaching facilities.
- AusAID – provision of in-country scholarships to provide seed funding to launch the engineering program.
- Industry – provision of scholarships, laboratory equipment and internships to fund a sustainable model.

3.1 Master of Engineering program

The new Master of Engineering to commence in 2010 at RMIT University's Saigon South campus is designed to address the current skills gap that has been identified in graduates from Vietnamese universities. It is proposed to commence with the discipline of Electronic and Computer Engineering and, over the next few years, to progressively introduce allied engineering disciplines. The long-term objective is to use some of the existing electronic and computer engineering courseware to introduce additional engineering degrees of relevance to Vietnam, such as electrical, mechanical, environmental and civil engineering.

By building the capacity of the existing engineering workforce and raising the standard of professional engineering education it will also directly contribute to the Vietnamese and Australian Government development goals for this region. RMIT University is making a significant financial contribution to the development and delivery of this program and the associated English preparation program (delivery costs approximately AUD$2.6m annually). This is in addition to the major capital infrastructure investment in the Saigon South campus that will provide state-of-the-art learning and teaching facilities.

The program will target graduates from Vietnamese university bachelor degrees in engineering, including female graduates and graduates from regional locations. Program content will focus on the skill areas identified by industry as critical for long-term and sustained employment. The key features of the program are:

- Provision of a pathway for graduates from Vietnamese universities to further their education in the field of engineering.
- Delivery in part-time or full-time mode according to the needs of candidates and employers.
- Initial endorsement by Engineers Australia (see Attachment 7), with full accreditation to be sought following commencement of the program. This will confer international professional recognition of graduates through the Washington Accord.
- Delivery onshore in Vietnam, thus substantially reducing the tuition cost to the student, and eliminating the extra cost associated with overseas living expenses. It also opens up opportunities to students who are unable to leave Vietnam for family reasons, particularly women who may not be able to study overseas due to family commitments.
- English language training of flexible duration determined by individual student need.
- Industry placements as a core requirement of the program to prepare students for the external work environment.
- The combination of technical education in the particular discipline area, with development of a range of management skills relevant to the role of professional engineers, through teamwork, problem-solving, presentations, and real world exemplars.

More information on the masters program is included in Attachment 2.

The timing for the launch of an internationally recognised postgraduate engineering program is an important consideration. Companies such as Intel are currently extending their activities in Vietnam as they consolidate production capacity from other facilities in higher cost markets. This shift is being accelerated by the global financial crisis. Demand for electrical, computer and electronic engineers in Vietnam remains strong whilst barriers to entry for other potential

educational suppliers are considerable. The successful implementation of the Master of Engineering (Electronic and Computer Engineering) will facilitate the roll out of additional programs in allied engineering disciplines in future years. A timeline of proposed activity is included at Attachment 3.

3.2 AusAID scholarships

The provision of a limited number of AusAID scholarships in-country will enable a faster and more secure start-up of high quality engineering professional education in Vietnam. The University requires a pipeline of at least 60 students per year to establish a suitably funded high quality program from the outset. It is proposed that the Australian Government contribute approximately one third of the total scholarship funding in this start up phase, with industry and RMIT University providing the remaining funding. Seed funding through AusAID scholarships over the first three years will assist the University, in partnership with industry, to successfully embed this program and attract additional industry support as well as full-fee paying Vietnamese and international students in future years to ensure its ongoing viability.

RMIT University can offer AusAID the security of a well-managed, high quality, and tested partner and can thereby assure that the funds committed will be used effectively and efficiently. RMIT University has successfully partnered with the Australian Government to deliver a number of aid initiatives in Vietnam and would seek to bring experience to this proposal. More information on these partnerships is detailed in section 4.3.

4 Benefits of the proposal

4.1 Advantages of an in-country model

The key benefit of an in-country model for scholarship funding is the significant cost saving that AusAID will realise by using an Australian training provider in Vietnam, and in other countries where scholarships may be provided following the success of this pilot program. As highlighted by Table 3 below, the same master program delivered in-country will cost approximately half the amount it would to fund the program within Australia.

The Vietnam campus of RMIT University runs three academic semesters per year based on the demand of the Vietnamese market. In some Asian cultures such as Vietnam there is significant emphasis placed on graduating quickly to secure a high paying job with good advancement opportunities. The trimester program structure at RMIT Vietnam allows Master of Engineering students to complete the program within two years. This includes one semester of English, one-semester exchange to the University's Melbourne campus, and one internship semester. The

in-country model offers AusAID a shorter study window which will save on the overall cost of scholarship provision.

Table 3 – Comparative cost per student for the Master of Engineering program delivered in Australia and Vietnam

University name	Duration	Annual tuition fee 2010 (AUD)	Living cost per year (AUD)	Healthcare (AUD)	Visa/airfare (AUD)	Total (AUD)
RMIT Vietnam*	2 years	20,529	5,280	N/A	N/A	51,618
RMIT Melbourne	1.5 years	16,960	23,497	Included	2,740	64,794
University of Adelaide	1 year	26,250	32,727	Included	2,740	61,717
University of Melbourne	2 years	29,650	34,731	353	2,740	134,946
University of Queensland	1.5 years	26,800	26,696	Included	2,740	84,353
University of Southern Queensland	2 years	21,600	18,276	Included	2,740	85,231
Monash University	1.5 years	28,800	26,502	Included	2,740	87,063

Note:

Exchange rate : 1AUD = 0.91USD

*At RMIT Vietnam
1. Annual tuition fee = (Engineering tuition: AUD 33,203 + Exchange: AUD 7,855)/2
2. Monthly living expenses: AUD 440

Social benefits will also accrue to the participants of the program. Under this model Vietnamese students will no longer have to leave their home country in order to obtain an internationally recognised professional engineering qualification. The introduction of this program will provide the opportunity to retain top quality graduates who would normally have to pursue higher level qualifications outside Vietnam.

The Master of Engineering includes a one semester optional study exchange with RMIT University, Melbourne, to give scholarship recipients the opportunity to experience living and studying in Australia. Scholarship recipients will therefore be able to experience the culture of the sponsoring country, which is an important aspect of the current AusAID scholarship program. Australian students studying the Master of Engineering program at RMIT University in Melbourne will also have the option to undertake a practical learning component through the RMIT Vietnam campus providing students with skills and competencies in global engineering settings.

4.2 Capacity building in Vietnam

The provision of an internationally recognized Master of Engineering will set a benchmark for professional engineers in Vietnam and is closely aligned with the objectives of the Millennium Development Goals, and the Vietnam Government's master plan to develop the electronics

industry.[3] The program will contribute to the skill base in Vietnam and facilitate long term economic development and growth.

A key challenge for Vietnam is the lack of suitably qualified (doctorate level and professional engineering status) engineering academics in Vietnamese universities. The master program will offer a pathway for these academics to gain professional engineering status, and the research component embedded in the program will be excellent preparation for further postgraduate research. The targeting of female engineers and graduates from regional locations will further diversify the professional engineering workforce and contribute to the social and economic outcomes of the region.

4.3 Australia and Vietnam Bilateral Relationship

A key objective of Australia's development cooperation with Vietnam is support for human resource development to help support the country to modernise and integrate into the world economy. Through its aid programs Australia aims to deliver high quality capacity building, technical assistance and new ideas, supported by appropriate capital investment. Australia has become one of the leading providers of development scholarships for Vietnam professionals to participate in study in Australia. These scholarships focus on a broad range of issues closely aligned with the Vietnam-Australia development cooperation priorities and Vietnam's human resource development needs. The extension of this model in the form of in-country scholarships in a priority skills area directly supports these objectives. Further, an increasingly skilled engineering workforce will attract increased foreign investment and allow Australia to expand its business activities in Vietnam.

RMIT University has been funded for a range of Australian Government aid-related programs in Vietnam in recent years.

The Asian Region Law Enforcement Management Training Program (or ARLEMP) is an Australian Federal Police (AFP) initiative. The first ARLEMP contract was signed in 2005 between the AFP and RMIT Vietnam in collaboration with the course host, the General Police Department of Vietnam. ARLEMP is a unique training program for senior police officers from around the Asian region. RMIT Vietnam designed the program to create a learning experience drawing on private enterprise and corporate skills in communications and management mixed in with specific policing management skills to forge strong personal and informal relationships among the participants in the Asia region.

Due to the success of the ARLEMP courses in Vietnam over the past four years, the AFP has decided to expand ARLEMP into Pakistan and eventually the Asia Pacific Rim region. RMIT Melbourne will run the first cohort of the south Asian ARLEMP in Melbourne in April 2010.

Border Control Asia Management Program (BCAMP) sponsored by the Australian Department of Immigration and Citizenship (DIAC) is another inter-cultural communications and management training program closely modelled on ARLEMP. The success of the ARLEMP program at forging strong relationships among the participants has encouraged DIAC to initiate this program for the Immigration Department of the Vietnam Ministry of Public Security and the Border Guard Division of the Ministry of Defence.

Under the delivery and management of RMIT Vietnam, BCAMP is designed initially for Vietnamese officials involved in dealing with people movement across local borders. The first two courses will take place in 2010 on the Hanoi campus of RMIT Vietnam, with the understanding that DIAC will be using them as a pilot program with the view of extending BCAMP to participants from the greater Asian region over the next few years.

[3] Decision of the Prime Minister. No: 75/2007/QD-TTg. Approved Master Plan to develop industrial electronic Vietnam (2010 and Vision 2020)
http://translate.google.com.vn/translate?u=http%3A//vbqppl.moj.gov.vn/law/vi/2001_to_2010/2007/200705/200705280006/lawdocument_view&hl=vi&langpair=auto|en&tbb=1&ie=utf-8

English language training for senior Vietnamese immigration officials, funded by the Department of Immigration and Citizenship (DIAC) and delivered by RMIT Vietnam, has been carried out over the last 5 years. Following the successful completion of the current agreement in 2009, the Ministry of Public Security has approached DIAC and RMIT Vietnam to continue the long-term English training relationship.

4.4 Australian and Vietnam Research Collaboration

The Australian Government is in the process of formalising arrangements governing bilateral research collaborations with Vietnam through the establishment of the Australia-Vietnam Scientific Cooperation Treaty. RMIT University is a leading research partner with Vietnam and has significant research collaborations with the Vietnam Academy of Science and Technology (VAST), Hanoi University of Technology and Vietnam National University in areas of national benefit including information technology, food safety, infectious diseases and water.
RMIT University has provided a number of opportunities for VAST (Institute of Biotechnology) staff to develop skills in Australia under short term exchange visits that have significantly enhanced the scientific skills of the staff and has opened the door to bilateral research collaborations between Australia and Vietnam.

RMIT University is actively expanding its research capability at its Vietnam campuses as it transitions from a primarily teaching-only university to a mature teaching and research institution. A key outcome of the new Master of Engineering will be the capacity for graduates to progress to PhD programs in Australia, and/or undertake industry-based PhD programs through RMIT Vietnam. Growing the engineering research capacity in Vietnam will have significant economic and social benefits and contribute to the development goals of both the Vietnam and Australian governments.

Attachment 1 – RMIT University Vietnam

RMIT International University Vietnam is Vietnam's first fully foreign-owned university delivering internationally recognised degrees from campuses in Hanoi and HCMC. RMIT Vietnam has grown rapidly since it opened its doors in 2001, today enrolling more than 4000 students into degree programs and 1000 into academic English classes.

RMIT University's Saigon South campus is one of the most modern educational facilities in the Asia-Pacific region and provides a purpose-built, contemporary educational facility of international standard. Recreational facilities include a football field, basketball courts and tennis courts. Various contemporary food outlets offer a variety of Vietnamese and Western cuisine. The campus is undergoing a USD 15 million expansion including a 1500 seat sports and multi-purpose centre, an accommodation complex for 212 students, and expanded teaching spaces for 4,000 additional students.

The new Master of Engineering program will be delivered through the Centre of Technology that currently offers a Bachelor of Design (Multimedia Systems) (284 enrolments) and Bachelor of Information Technology (95 enrolments).

Research activity at RMIT Vietnam is gaining pace with students and staff from the Melbourne and Vietnam campuses collaborating on practical research projects that directly benefit the Vietnamese community. There is a strong research focus on environmental issues with recent projects including:

- Evaluation of the capacity of local Vietnamese organisations to educate the workforce required for the environment goods and services sector.
- Analysis of the solid waste management strategies in HCMC in collaboration with the local Department of Natural Resources and Environment.
- Investigation of water resources management in the Hanoi region.

- Scoping of the environmental and social issues associated with urban development on sites within the Mekong Delta .
- The impacts of urban development on flooding frequency in Ho Chi Minh City.

A key outcome of this activity is the development of an incubator for emerging young research candidates in both Melbourne and Vietnam, as well as the establishment of relationships with a wide variety of organisations in Vietnam that can continue to identify research opportunities for Australian and Vietnamese researchers. The involvement of international consultancies in Vietnam has provided in-country support for the research teams and provided graduate recruitment opportunities for students seeking to contribute to Vietnam's environmental sustainability.

RMIT University and the Ministry of Education and Training Vietnam have an established scholarship arrangement for Vietnamese nationals to upgrade to a PhD using a 'sandwich arrangement' where students spend more than 50 per cent of their candidature working in Vietnam. To date this program has attracted ten master students and six PhD students. RMIT Vietnam has also sponsored three students in the Master by Research on Public Health.

Attachment 2 – Master of Engineering program details

Program scope

The Master of Engineering (Electronic and Computer Engineering) program will be the first of its kind offered in Vietnam by an international university. It is a specialised post-graduate program that has been developed to produce engineers who possess high-level technical skills and are effective in international business settings. Participants in the program will gain extensive state-of-the-art knowledge and skills in electronic and computer technologies, balanced with the development of advanced oral and written communication skills, teamwork and business acumen. Graduates from the program will find employment in the design, manufacture and supply of electronic products, computer systems and semiconductor fabrication. Their roles as professional engineers may extend from detailed design through to business managers and senior executives. Graduates could also establish their own businesses operating in the local and international electronic and computer market.

In the public sector, graduates can provide the community with essential services in areas such as telecommunications, transportation, security, defence, health, emergency services and the environment. Graduates can also undertake further studies in higher research and development.

Program structure

Once the program is established, RMIT University will seek Accreditation by Engineers Australia (EA) for the qualification to be recognised internationally by the Washington Accord. This will be the first program accredited by EA to be delivered in Vietnam.

Special features of this program include:

- Creative and systematic problem-solving skills using an innovative technique that has been strongly endorsed by industry.
- Significant emphasis on team and individual design project work.
- High level of international technical and business English skills.
- Work Integrated Learning (WIL) – support from industry will underpin the one semester full WIL that is an integral part of the program structure. The WIL component provides real world industry experience and allows students to build their confidence and skills in a work environment.
- Interactive studio-based teaching.
- Practical hands-on learning in well-equipped laboratories.

The program will have two intakes per year, in February and October, and comprise two years of full-time study (288 credit points) with a part-time study option available.

Embedded into the program is a one-semester exchange opportunity with RMIT Melbourne. This will enable students who wish to undertake some study at RMIT Melbourne to further develop their English language communication skills and give them the opportunity for greater cross-cultural exchange.

Teaching and assessment

Teaching into the program will be campus based and consist of a mixture of classes, laboratories and workshops with additional online support. There is a commitment to the recruitment of well-qualified and senior academic staff on-site at RMIT Vietnam. These staff will conduct both teaching and research activities with support and cooperation from College staff in Melbourne.

Assessment is ongoing throughout each year of the program and includes examinations, tutorials, reports, oral presentation, research projects, laboratory projects and assignments.

Semester 1

Course title	Credit points
English 1 – Report Writing, Research & Presentations	12
English 2 – Project Management for Engineers	12
Microcomputer Systems Design	12
Software Systems Engineering 4	12

(Suitably qualified candidates may claim exemption for Semester 1 courses)

Semester 2

Course title	Credit points
HDL and High Level Synthesis	12
Computer Robotics and Control	12
Advanced Digital Design II	12
Team Engineering Design 1	12

Semester 3

Course title	Credit points
Digital Design Automation	12
Electronic Devices; Physics, Design and Simulation	12
Circuit and System Simulation	12
Team Engineering Design 2	12

Semester 4

Course title	Credit points
Electronic Materials	12
Semiconductor Device Fabrication	12
"TRIZ" Systematic and Inventive Problem Solving - Level 1	12
Individual Research Project 1	12

Semester 5 (Exchange)

Course title	Credit points
English 3 - International Business writing, & presentations	12
English 4 - International Business Skills	12
“TRIZ" Systematic and Inventive Problem Solving - Level 2	12
Individual Research Project 2	12

Semester 6

Course title	Credit points
Work Integrated Learning 1, 2, 3, 4	48

Entrance requirements

Successful applicants will require the following:

- a recognised bachelor degree in an electrical, electronic, communication or computer engineering; or
- evidence of successful completion of a post-matriculation diploma program of at least three years duration; or
- A combination of academic qualifications and work experience equivalent to the above requirements. It is also a requirement that applicants to the program possess English language proficiency to the level of IELTS (Academic) 6.5+ (no band less than 6.0) or equivalent. Additional English language requirements before commencement of the engineering component of the program include:
- English for international business purposes: project management and engineering-business English.
- English language skills relating to Western English business cultures including the ability to question superiors respectfully, generate ideas, conduct independent research, resolve conflicts and contribute effectively to teams.

Applicants with sufficient industry experience and demonstrated competency in the additional English language components of the course may be eligible for exemptions. Any exemptions will be assessed on a case-by-case basis.

Pre-Program English

The experience of RMIT Vietnam and information from industry partners suggests that few graduates of engineering degrees from Vietnamese universities posses English language skills at the level of IELTS 6.5. In order to keep the opportunity available to the best and brightest of the engineering graduates, as opposed to only those with good English skills, the proposed scholarship program provides for students to enter pre-program English language training from RMIT Vietnam's Centre of Language and Learning, provided they have a minimum IELTS of 5.5 or equivalent.

An IELTS 5.5 would demand successful completion of a 10-week program to reach IELTS 6.0. IELTS 6.0 requires successful completion of a further 5-week program to enable them to achieve IELTS 6.5 and enter the full masters program.

Work Integrated Learning (WIL)

Producing work-ready graduates is an imperative for RMIT University and is reflected in the University's strategic focus. All RMIT University academic programs contain a WIL component. This component of the program enables students to experience a workplace environment where they receive direct feedback from their supervisors and provides work relevant learning prior to graduation.

All students in the Master of Engineering are required to complete an internship (a practical placement in the workforce) during Semester 6 of the program. During the internship, the engineering students are enrolled into specific industry-based courses that integrate the student's theoretical knowledge with workplace experience. Students take on a range of projects that employers can help identify, while RMIT Vietnam provides close academic supervision. This gives a richer educational experience and develops students that are work-ready upon graduation.

The internship must involve work that is related to the students' discipline area (electronic and computer engineering) and be supervised by a qualified engineer to meet the criteria of Engineers Australia.

Internships have proven highly beneficial for many local and multinational companies and often lead to employment opportunities for the student upon completion. Approximately 90% of RMIT Vietnam interns are offered full-time employment by their internship companies.

RMIT Vietnam through our WIL program will look for ways for our engineering students to engage the local community through formal courses like the Work Integrated Learning Project.

Exchange (Melbourne)

The Master of Engineering students have the opportunity to study in Australia at RMIT University, Melbourne, on a Student Exchange Program. Tuition costs for this exchange are built into the overall engineering program fee. The engineering program allows students to study for one semester (Semester 5) in Melbourne at the same tuition fee paid in Vietnam. Australian students studying the Master of Engineering program at RMIT University in Melbourne also have the option to complete a semester of study at the RMIT Vietnam campus. An international student exchange in Melbourne can be an exciting, life-changing experience that allows engineering students to engage academically, culturally and professionally.

Student selection

RMIT Vietnam provides a minimum of 28 full fee waiver scholarships per year across the university. Historically the scholarship program has allocated a set number of scholarships to new and recently established academic programs, to ensure their successful launch. It is the University's intention to offer one scholarship into the Master of Engineering program for every three AusAID scholarships provided. We will be seeking to allocate a number of the AusAID scholarships to female applicants in each intake to ensure gender equity in the program. From experience with our Bachelor of Information Technology program (3% female students), we understand the challenges of maintaining an equitable ratio of female to male students. In fact our Bachelor of Business (Information Systems) is a highly technical program yet nearly 30% of the students are female. We will make every effort during the promotion and selection of the AusAID scholarship campaign to encourage female applicants.

RMIT Vietnam recognises the importance of selecting the most appropriate scholarship recipients to ensure the maximum number of successful graduates from the program.

Proposed selection criteria

- Applicants must be Vietnamese nationals.
- Scholarships will be awarded based on academic excellence, extra-curricular activities, and recommendations from professors, lecturers and employers.
- To be eligible to apply for a scholarship, minimum English language requirements for entry to the pre-program English pathway to the Master of Engineering (Electronic and Computer Engineering) must be met.
- Applicants must successfully complete a brief engineering skills assessment to demonstrate competency in the basic engineering skills required for entry into postgraduate study. The assessment will be in a closed environment and will be marked and moderated by RMIT University academics. This will ensure that applicants possess the skills referred to in their application documentation. Skills tested will include digital logic, basic programming, electronic circuit theory and mathematics.
- An essay written in a closed environment must be produced in English on a series of topics that require a logical argument and conclusion.
- Short-listed candidates will be subject to interview with representatives from RMIT Vietnam before a final decision is made.

Proposed selection process

- From the designated launch date of the AusAID Scholarship Program, the RMIT Vietnam Scholarship Committee will preside over the scholarship campaign to capture as many applications from as many equity groups as possible.
- One week after the closing date, a shortlist will be completed through an evaluation process based on the selection criteria.
- A number of short-listed candidates will be required to undertake engineering skills assessment testing, and attend an interview with the selection panel made up of representatives from RMIT Vietnam, resulting in selection of the most appropriate candidate/s.
- A formal submission of the result will be presented to the President, RMIT Vietnam and AusAID for approval.
- The successful candidates and the AusAID Scholarship Program will be promoted through local media outlets.

Student support

Pastoral care

The University has well developed academic student support and pastoral care services. Services include a range of study skills support, career advice and workplace preparation, a Student Counsellor who is a trained psychologist, an on site medical clinic, new fully supported student accommodation, sports and recreation facilities, support for student clubs and societies, a community engagement liaison officer who assists student involvement in charitable and other external activities.

Finding balance

The University recognises that all other things in life do not suddenly stop when a student begins studying a postgraduate program. Some students find it difficult to strike an appropriate balance between their university life and their outside life with family and others. Advisement staff help students find ways to cope with balancing family and study responsibilities. They can also act as an advocate for students in situations where family issues may begin to interfere with studies in a detrimental way.

Performance Improvement Plans (PIP)

Engineering students having difficulty in the masters program will be offered specialised help. If a student is seen to be at substantial risk of failing in an academic course, Student Services will write to advise the student that he or she is “At Risk”. This “At Risk” status is seen as an opportunity to work closely with the student to develop better results. This often involves learning some study skills or time management skills that can help to make study time easier and more productive. Students who are placed “At Risk” are encouraged to participate in a Performance Improvement Planning (PIP) Program. The PIP Program helps students learn to assess their own strengths and weaknesses, plan their time better, and engage on a more active level with both their lecturers and the learning materials.

Student advocacy

The Academic Advisement office is part of Student Services. Advisement staff are able to act in support of a student and even be an advocate in cases of disciplinary hearings, exclusion hearings or at times when a student may want to request that some of their work be re-assessed. Advisement staff can also help understand their rights as a student, and what procedures and processes are in place to guarantee these rights.

Study skills and strategies

Even the best master's level student can learn new skills to study more effectively and efficiently. Along with general Academic Advisement staff, the University's Learning Skills Unit also helps students better understand how their time is being spent and provides materials to assist in organising time better. The Learning Skills Unit, the Academic Advisement staff and the University's counselling service all work together to help students cope with common problems such as fear of examinations, parental pressure and stress.

Coping with challenge

Master level students attending RMIT Vietnam typically need to deal with various challenges, including the need to study complicated subjects in a second language. They also have to adjust their learning style and strategies to cope with a model of learning and teaching that is quite different to traditional Vietnamese approaches. Students sometimes need help adjusting to this environment, and maintaining their commitment to studying, once they have been at RMIT for a period of time. Students are encouraged to seek out this help whenever they need it, as a means of better achieving the goals they have set for themselves. Advisement staff can be consulted by making a telephone or email booking, or visiting the service in person.

RMIT Vietnam is committed to helping its engineering students adjust to their new and sometimes challenging learning environment, and make the most of the opportunities it provides.

Alumni

RMIT University has more than 200,000 alumni located in Australia and around the world. In Vietnam, more than 2,000 alumni have graduated from RMIT Vietnam, with many more graduating from RMIT Melbourne.

As graduates of the Master of Engineering program the AusAID funded students automatically become members of the RMIT University Alumni Network. Through this network, members can participate in social and career networking activities and take on leadership roles. The RMIT Vietnam Alumni Relations Office works closely with the committee of the RMIT Vietnam Alumni Association to facilitate alumni in their careers and social life. RMIT Vietnam places almost 90% of graduates into industry or postgraduate study. Graduates have the qualifications, skills and confidence essential for leadership and management enabling them to contribute to and shape a sustainable dynamic future for Vietnam.

As part of the Master of Engineering, RMIT Vietnam will set up an Industry Engagement Committee for Engineering and will organize industry forums to share expertise among industry participants in the broader community. Additionally, it is anticipated that research in the engineering discipline will be initiated within a few years, which will benefit industry and the wider community in Vietnam.

In addition to assisting students and alumni in achieving career goals, RMIT Vietnam is increasing its emphasis on alumni engagement in the community. RMIT Vietnam's recently elected Alumni Committee board raised USD 5000 for Loreto Vietnam through an alumni photographic exhibition and auction. While the alumni community is relatively small, RMIT Vietnam will foster an environment that allows our alumni to follow the successes of RMIT Melbourne alumni such as Daniel Almagor, the founder and president of Engineers without Borders Australia. We are interested in establishing Engineers without Borders Vietnam that might be composed of some of our engineering graduates.

Quality assurance

RMIT University is a long-established dual sector university (vocational and higher education) with a history extending over 120-years. Owing to its status as a national university it is subject to annual quality and performance audits by the Australian University Quality Assurance agency

(AUQA), which over the next two years will be replaced by the Tertiary Education Quality and Standards Agency (TEQSA). At a minimum, this agency along with other internal and external statutory authorities ensures that the university maintains policies, procedures and processes to guarantee quality outcomes in teaching, research, consultancies and overseas projects. Consequently RMIT University is required to have a robust quality assurance (QA) system in place that is subject to review and audit by the TEQSA.

The Master of Engineering (Electronic and Computer Engineering) has been designed to meet the accreditation criteria of Engineers Australia. These criteria include the inclusion of sufficient, independent and team student research projects and the integration of a Work Integrated Learning component. With accreditation of the Master of Engineering program, Engineers Australia will become the first professionally recognised engineering accrediting body operating within Vietnam.

Attachment 3 – existing major projects in Vietnam with AusAID involvement

Sector	Project name	Project description	Duration	Australian Contribution	Key Counterpart
Infrastructure AusAID is working with the World Bank and the Asian Development Bank to help Vietnam improve the quality and accessibility of basic transport and energy	Southern Coastal Corridor	The project contributes towards economic diversification and development along the Southern Coastal Corridor through the reduction of transport costs and improved access for the movement of goods and people between Vietnam, Cambodia and Thailand.	2008 - 2013	$33 million	Ministry of Transport (Vietnam)

infrastructure.		In Vietnam, the project will improve a short section of National Highway 80 between the border at Xa Xia and Ha Tien; and completion of the transport corridor to Ca Mau on the Minh Luong to Ca Mau city section, a distance of 228 kms.			
	Mekong Transport Infrastructure Development	A total of approximately 315 km of secondary roads, including 118 bridges, will be upgraded to an all-weather standard over thirteen provinces. Two feeder canals with a total length of 58 km will also be upgraded. Physical improvements to provincial port facilities and rural landing stages will be implemented.	2007 - 2013	$33 million	Ministry of Transport (Vietnam) & The World Bank
	Rural Electrification Distribution	AusAID funding will be used to finance technical assistance aiming at developing the capacity of the power companies in financial management practices; investment and financing decisions; monitoring and reporting on performance; participation in further reform of the power sector; and completion of the government's program of universal electrification.	2008 - 2012	$3.5 million	Electricity of Vietnam (EVN)
	Central Mekong Region Connectivity	The Project comprises four components—a bridge over the Tien River at Cao Lanh, a bridge over the Hau River at Vam Cong, a connecting road between the two bridges and a bypass to Long Xuyen at the end of the Vam Cong bridge.	2008 - 2015	$350,000	Ministry of Transport (Vietnam) & The Asian Development Bank (ADB)
Water and Sanitation Australia will provide approximately $48 million to the program during the 2007 to 2011 period. In addition, AusAID support will help the GOV to adopt better planning and implementation approaches for providing rural water supplies and sanitation.	Sector Program Support to Water, Sanitation and Hygiene Promotion in Vietnam	The program provides support to Vietnam's National Target Program for Rural Water Supply and Sanitation Phase II (NTPII) based on the National Rural Clean Water Supply and Sanitation Strategy to improve health and living conditions of the rural poor including ethnic minorities through provision of clean water, sanitation, hygiene promotion and protection of the environment.	2006 - 2011	$48 million ($7 million for 2006 -2008)	Ministry of Agriculture and Rural Development (Vietnam) Ministry of Health (Vietnam) Ministry of Education and Training (Vietnam)

Climate Change Australia's advocacy efforts have been successful in influencing macro level policy for an integrated disaster risk management approach, which is reflected in the National Strategy for Disaster Mitigation and Management up to 2020 and through support to the Natural Disaster Risk Management Project.	Conservation and Development for Key Sites of the Man and the Biosphere Reserve of Kien Giang Province	The project will contribute to Vietnamese Government's development of policies and actions towards mitigating the effects of climate change, such as increased typhoons, sea level rise and forest fire	Jun 2008 - Dec 2010	$2.75 million	N/A

Attachment 4 – profile of RMIT industry partners for Master of Engineering

Intel Products Vietnam Co. Ltd.

Intel is the first major foreign investor in high technology in Vietnam. The country's Ministry of Investment and Planning has given Intel an investment license to build a $USD300 million assembly and test facility to produce chips and computer parts. When completed, this factory will be the largest computer equipment and manufacturing plant in Vietnam. Projected to employ approximately 4000 people, this site will be the seventh assembly site in Intel's global network.

Intel also has a sales and marketing office in Ho Chi Minh City, providing world-class sales and support at the original equipment manufacturer (OEM), developer and end-user levels. Operating since 1997, this office drives Intel's initiatives, technologies, products and services into the marketplace, creating demand and promoting Intel's role in the Internet.

Intel's planned $USD300 million assembly and test facility

Renesas Design Vietnam Co. Ltd.

Renesas Design Vietnam Co., Ltd. (RVC) was created in October 2004 as one of the main centres for developing sophisticated multifunction System-on-Chips (SoCs) with a high level of design capability. Currently approximately 400 engineers work at RVC, developing and designing SoC hardware and software for mobile, automotive, and digital consumer applications. Among the projects they have already completed is verification work on SuperH™ CPU cores, design of IP modules such as video I/O and USB modules, SH-Mobile product development, and the development of digital TV software. RVC is estimated to increase the number of its engineers to 1,000.

In Vietnam, the company is contributing to the advancement of LSI technology and the growth of the high-tech industry in many ways. These include employment of local engineers at RVC, ongoing technical training, the establishment of semiconductor design courses at universities, and activities to provide technology education for students.

Attachment 5 – Vietnam workforce needs identified by industry stakeholders

The table below provides a summary of estimated workforce needs of some key industry stakeholders in engineering disciplines across Vietnam for the next 10 years. Also noted is the projected dollar investment by multinational corporations into Vietnam through building and infrastructure works.

Company	Investment in Vietnam (USD)	Expected employee numbers	Engineers needed	Remarks
Intel	1 billion	4,000	1,000	electricity, electronic, IT, automation engineers
Renesas			1,000	semiconductor design engineers
Campal	500 mil		1,200	Vinh Phuc
Samsung		> 10,000	3,000	
Nissei Electric	40 mil	> 3,000	700	
Olympus	45 mil	> 3,000	800	
Samsung Electronics	47,2 mil	> 6,000	2,000	7 factories
Canon	110 mil	> 8,000	3,000	2nd stage: 40mil USD investment
Furukuwa Automotive Parts	52,4 mil	> 6,000	2,000	
Nidec Tosok	86 mil	> 33,000	>10,000	
Strategic Marine		1,500 – 2,000		Since 2007
Worley Parsons			600	