



8888 University Drive, Burnaby, BC  
Canada V5A 1S6


TEL: 778.782.3925  
FAX: 778.782.5876

vpacad@sfu.ca  
www.sfu.ca/vpacademic

**MEMORANDUM**

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**ATTENTION** Senate **DATE** December 14, 2011  
**FROM** Bill Krane, Acting Vice-President, Academic and Provost, and Acting Chair, SCUP **PAGES** 1/1  
**RE:** Faculty of Applied Sciences: Establish School of Mechatronic Systems Engineering (SCUP 11-57)



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At its December 7, 2011 meeting SCUP reviewed and approved the proposal to establish the School of Mechatronic Systems Engineering within the Faculty of Applied Sciences.

**Motion:**

That Senate approve and recommend to the Board of Governors the proposal to establish the School of Mechatronic Systems Engineering within the Faculty of Applied Sciences.

Encl.

c: N. Rajapakse  
J. Jones



OFFICE OF THE DEAN  
8888 University Drive, Burnaby, BC  
Canada V5A 1S6

TEL: 778.782.4724  
FAX: 778.782.5802

rajapakse@sfu.ca  
www.fas.sfu.ca

MEMORANDUM

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ATTENTION	Dr. Jon Driver, Chair Senate Committee on University Priorities	DATE	November 23, 2011
FROM	Dr. Nimal Rajapakse, Dean Faculty of Applied Sciences	PAGES	1/1
RE:	Mechatronic Systems Engineering Proposal		

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Please find attached a proposal to establish the School of Mechatronic Systems Engineering at SFU Surrey. I would appreciate it if you could consider this matter at the next meeting of SCUP.

Dr. Nimal Rajapakse  
Dean

cc: Dr. John Jones, Director, School of Engineering Science

Enclosures

# **A Proposal to Establish the School of Mechatronic Systems Engineering at SFU Surrey**

**Submitted by Dr. Nimal Rajapakse, Dean, Faculty of Applied Sciences  
November 23, 2011**

## **Preamble**

Planning for engineering education at SFU started in 1980. A proposal submitted in 1981 (Senate paper 81-2) envisaged the creation of a Faculty of Engineering with four academic departments to offer programs in Civil Engineering, Chemical Engineering, Mechanical Engineering, Electrical Engineering and Engineering Science. A subsequent proposal approved by the Province in 1982 established the School of Engineering Science (SES) under the Faculty of Applied Sciences. Since 1984 SES has been offering an undergraduate degree program in Engineering Science with five concentrations. SFU engineering was a relatively small but honours-only program that attracted top-notch students. The Double-the-Opportunity (DTO) initiative allowed SFU to expand its programs in computing and engineering. As a result enrollment in Engineering Science in Burnaby has more than doubled since 2002 and a majority of its students are now enrolled in a non-honours stream. A new program in Mechatronic Systems Engineering (MSE) was introduced in 2006 at SFU Surrey Campus. The MSE program is currently administered by the Director of the School of Engineering Science, based in Burnaby.

SES has nearly 1200 undergraduates, over 200 graduate students and 46 faculty members between Burnaby and Surrey Campuses. The MSE share includes nearly 400 undergraduate and over 80 graduate students (headcount) with 13 tenured/tenure-track faculty members, 4 office staff and 3 technicians. The MSE program is completely offered at Surrey. It was recently accredited by the Canadian Engineering Accreditation Board and the first degrees were awarded in October 2011.

The Director of the School of Engineering Science stepped down in July 2011 and as part of the search for a new Director an extensive consultation of faculty, staff and student leadership was conducted by the Dean. Five meetings for faculty and staff were held in Surrey and Burnaby in July. An important issue raised during these meetings was the administration of MSE. The Faculty strategic plan developed in 2010 proposes an expansion of engineering programs at SFU Surrey with the development of a new program in Energy Systems Engineering.

## **Process:**

The Dean had two school meetings to discuss the issue of administration of MSE. The meetings were very well attended. The faculty and staff members of MSE strongly recommended creation of a separate academic unit to administer MSE. The opinion of Burnaby faculty was divided, their main concerns being the division of resources, competition for students and potential duplication of certain research areas. The SES faculty members from Burnaby met separately several times to review the current status of Burnaby programs and define a new vision. Following these discussions, the Dean asked the School to vote on the question of a separate academic unit within FAS to administer MSE. The vote was 25-14 in favour of a new unit at Surrey.

**Rationale for a Separate Academic Unit:**

The growth of engineering in Burnaby over the past ten years, establishment of the MSE program in Surrey and our plan to introduce another engineering program at Surrey support the need to critically examine the branding of and optimum administrative structure for engineering education at SFU. The physical location of the MSE program is another important factor.

All engineering programs in Canada (and around the world) are offered under a Faculty of Engineering or a Faculty of Applied Sciences with multiple departments that provides a strong disciplinary identity and focus; clearly demonstrates teaching and research breadth; and allows more autonomy to set directions and seize opportunities based on disciplinary trends. The current structure of engineering at SFU places the Faculty in a disadvantageous position compared to our regional and national peers. The current label of 'Engineering Science' is not an accurate description of engineering activities at Surrey and our future plans. It also causes confusion during student recruitment and in industry relations. A review of student application and retention data confirms a clear need to re-examine the focus of the Burnaby engineering program to build a better identity and attract high-quality students. The creation of the School of Mechatronic Systems Engineering will provide a distinct and increased identity to the MSE program and demonstrate the breadth of engineering education and research at SFU to potential students and industry. It will therefore substantially help our efforts to recruit highly qualified students (undergraduate and graduate) and improve research competitiveness through enhanced visibility and interactions with industry.

The MSE program is now accredited and running at steady-state. Since its inception, MSE has experienced challenges with respect to various administrative, student, space and budgetary matters, due to its location and current administrative structure. All final decisions concerning the MSE program are currently made by the School Director and Committees operating from Burnaby. This has led to inefficiencies, delays, misunderstandings and duplication of committees and paperwork. The MSE program currently has a sufficient complement of faculty, staff and students to operate as an independent academic unit within FAS and handle its administrative operation and decision making more efficiently. The creation of a new school will allow the MSE faculty and staff to take the ownership of the program and support its growth and distinct identity.

It is therefore proposed to establish a new School of Mechatronic Systems Engineering at SFU Surrey effective July 1, 2012. The new school will be the third academic unit of FAS and will be administered according to Faculty and University policies and regulations. It should be noted that the recent external review of the School of Engineering Science recommended the creation of a separate academic unit for MSE.

**Administrative Matters:**

MSE already has adequate resources to function as an independent unit. Some of the redundancies in administration that exist now between Burnaby and Surrey will be eliminated, leading to improved efficiency and more effective use of resources. FAS has already centralized student affairs staff and is in the process of centralizing IT staff and potentially co-op; these centralized units can serve three Schools as easily as two. The Dean's Office will set enrollment targets for the three academic units and distribute resources according to a budget model. All

faculty and staff positions will remain at their current locations. This proposal has no space implications as engineering programs at the two campuses do not share space. The curriculum and graduate committees at the Faculty level will oversee to ensure policies, practices and academic standards are acceptable to the Faculty and consistent with the University's overall goals and standards. There is no duplication of courses between Burnaby and Surrey. Students will be allowed to draw from undergraduate elective and graduate courses available at both locations. The additional cost is expected to be less than \$20K to cover one administrative stipend and operating expenses.