



TRU Library Curriculum Consultation

For new courses or new programs, or substantial changes to existing ones, consultation with the Library is essential and required. Please check the appropriate box below:

- ☒ **New Program Proposal:** The Library will require six (6) weeks to complete this consultation form for new programs.
- ☐ **New Course Proposal OR Substantial Course Change (existing):** The Library requires three (3) weeks to complete this consultation form for new or substantially changed courses.

Please complete the top portion of the form and send it to the librarian consultant electronically. The name and contact information of your departmental librarian consultant may be found at:
http://www.tru.ca/library/about_us/liaisons.html.

FROM: (please print)

Name: Tom Dickinson

Dept./School: Science

Email: tdickinson@tru.ca

Phone: 7137

TO: (please print)

Name (Librarian): Penny Haggarty

Date: April 24, 2017

We are proposing curriculum changes for the following courses or programs:

Master of Engineering Science

This section to be completed by librarian:

Please indicate the effect in terms of library support, appending additional pages if necessary. To be completed in consultation with other branches/libraries/librarians, TRU or external, if an interdisciplinary program or otherwise necessary.

Library Service or Resource	Description of Effect (cost, etc.)
Collections – strengths and gaps in the current collection in relevant areas	A Library curriculum consultation was recently prepared for the Bachelors' in Computer Engineering, Electrical Engineering and Software Engineering. The information regarding the currently held books and e-books is the same. The Library owns very few relevant titles.

	<p>Appendix 1 describes some of the options for building a graduate engineering collection in the modern era. Links to lists of appropriate publishers and materials are also provided.</p>
Databases and Journals - Current	<p>It is essential that the Library have the funds to renew the annual subscriptions for these products, which support multiple disciplines. The Library receives the maximum discount because of consortial memberships.</p> <p>Science Citation Index – citation and abstracting database; includes Conference Proceedings Citation Index (Science)</p> <p>ACM Digital Library – Full text journals, conference proceedings and magazines http://dl.acm.org/contents_dl.cfm?coll=portal&dl=ACM&CFID=764322708&CFTOKEN=65530789</p> <p>SpringerLink – Full text journal package</p> <p>Wiley - Full text journal package</p> <p>ScienceDirect (Elsevier) - Full text journal package</p> <p>Journal Holdings Lists: See Appendices 2-4. There is duplication of titles in these lists.</p>
Databases - Required	<p>Required for Master's Program:</p> <ol style="list-style-type: none"> Resources listed in Appendix 5. Proquest PQDT – \$20,200.00 per year. The most comprehensive of dissertations and theses in the world. Students need to be able to access what others have researched and written.
Estimated annual budget needed for the Library to support program/course	<p>Should the \$124,200.00 budget for the Bachelor's degrees be approved, the estimated annual budget for resources to support the Master's is \$60,200.00. This exceeds by far the amounts listed in Projected Expenses – Net Surplus allocated to Library (p. 15) of the <i>Master of Engineering Science Program Sustainability Worksheet</i> (last revised July 5, 2016).</p> <p>A Full time tenure-track faculty librarian (\$75,000.00 to \$91,033.00 plus benefits) has already been recommended for the Bachelor's program. This person would be able to support both programs.</p>

<p>Librarian expertise to support the program (instruction, research and collection development support)</p>	<p>TRU librarians are engaged in building library collections to support teaching, learning, and research at TRU.</p> <p>Faculty should be encouraged to work collaboratively with librarians to ensure that graduate students are given instruction and orientation to TRU Library resources and services. International students may have a need for additional instruction and support, depending on resources and services available at their last place of study. As students take on theses or major projects, they will need in-depth and personalized research consultations with librarians.</p> <p>While the current TRU librarians are committed to providing the best possible service to current and future programs, the addition of a STEM librarian to the full-time tenure-track complement of TRU librarians would be a strong asset to the engineering and other science programs – especially in order to handle the increased number of specialized research consultations identified above.</p>
<p>Physical facilities and technology requirements for group and individual work</p>	<p>Current library student space is grossly inadequate for the number of FTE students at TRU; the library requires increased group and study space for all students.</p> <p>The additional student enrolment of graduate and undergraduate engineering students will put further demand on these very limited spaces: both quiet individual spaces for a study-intensive program, and flexible mixed-use spaces is needed to foster innovative learning and teaching practices. In particular, engineering students will require collaborative spaces to be working with librarians, faculty, and peers, and learning through hands-on engagement with new tools and technologies in spaces built to encourage access and experiential learning.</p>
<p>Other</p>	<p>New faculty hires may have resource recommendations that have not been anticipated; this could include journal subscriptions and databases. No new journals beyond those available via IEEE/IET Electronic Library have been recommended in this document. It is therefore possible that budget estimates to support the program need to be revised.</p> <p>The estimated annual budget to support this program is contingent upon the budget requests for the Bachelor's programs being approved.</p> <p>All prices are estimates in Canadian dollars, based on current quotes and the Canadian-US dollar exchange rate.</p> <p>An inflationary increase in the cost of subscriptions described in "Databases – Required" and currently held databases is normally in the range of 3-5% per year</p>

Based on the information provided:

- ☐ Proposal as presented will have little or no impact on the Library.
- ☐ Proposal as presented will impact the Library AND can be supported with existing resources.
- ☒ Proposal as presented will impact the Library AND **requires additional resources**; see details above or appended.

Signature: *Penny Haggarty*

Date: June 8, 2017

Print Name: Penny Haggarty, TRU Collection Services/Physical Sciences Liaison Librarian

phaggarty@tru.ca

(250) 828-5303

Appendix 1

Ebook/Book Collections for the Master of Engineering

The Access Engineering and Knovel ebook collections recommended for the undergraduate engineering degrees will not be adequate to support the graduate program. More advanced materials will be needed and ebooks should be the preferred format, though on occasion, print may be the only format available.

The Library no longer has to rely solely on title-by-title or “firm order” purchase of ebooks, nor on what is commonly referred to as a “just-in-case” purchasing model.

Vendors and publishers now offer:

- Subscriptions to subject collections – Library pays an annual fee to access ebooks.
- Demand-driven acquisitions (DDA) – Library makes ebooks discoverable by students and faculty prior to purchase, and defines what amount of usage will trigger a purchase, and the allowable expenditure
- Evidence-based acquisitions (EBA) – Library makes ebooks discoverable by students and faculty and pays an up-front fee for unlimited access for an agreed period of time. At the end of the period, the librarians and faculty decide which titles to purchase, based on the usage.

While there may be some key titles and reference books that the faculty will want to purchase at the outset, I recommend that \$40,000.00 be dedicated to EBA and DDA in each of the first 2 years of the program. After two years, the Library will need to assess the content and usage of the collections, consult with faculty and students and come to a mutually satisfactory plan for further collection development.

The vendors listed below offer one or more of the acquisitions methods described above. There are also DDA and subscription options via licenses with big library vendors such as Ebsco and Proquest.

ScienceDirect

Control & Systems Engineering

<https://www.elsevier.com/catalog?producttype=books&cat0=engineering&cat1=control-and-systems-engineering&cat2=&q=&imprintname=&author=&sortby=sortByDateDesc>

Electrical & Electronics Engineering

<https://www.elsevier.com/catalog?producttype=books&cat0=engineering&cat1=electrical-and-electronic-engineering&cat2=&q=&imprintname=&author=&sortby=sortByDateDesc>

Wiley

Electrical & Electronics Engineering Ebooks

<http://onlinelibrary.wiley.com/subject/code/000049/titles?type=book&activeLetter=>

Electrical & Electronics Engineering Reference Ebooks

<http://onlinelibrary.wiley.com/subject/code/000049/titles?type=mrw&activeLetter=>

CRC Press

Computer Science & Engineering

<https://www.crcpress.com/computer-science-engineering>

Electrical Engineering

<https://www.crcpress.com/engineering-electrical>

Springer

Control Engineering

<http://www.springer.com/engineering/control?SGWID=0-192-12-71197-0>

Electronics & Electrical Engineering

<http://www.springer.com/engineering/electronics?SGWID=0-191-12-71195-0>

Robotics

<http://www.springer.com/engineering/robotics?SGWID=0-166702-12-542099-0>

Signals & Communications

<http://www.springer.com/engineering/signals?SGWID=0-186-12-71198-0>

Book Series: Lecture Notes in Computer Science (LNCS)

<https://link.springer.com/bookseries/558>

This distinguished conference proceedings series publishes the latest research developments in all areas of computer science – quickly, informally and at a high level.

Morgan and Claypool

Synthesis Digital Library of Engineering and Computer Science

<http://www.morganclaypool.com/page/synthesis.jsp>

SYNTHESIS is an information service for engineering and computer science. The basic component of the collection is the Lecture, an electronic book that synthesizes an important research or development topic, and is authored by a prominent contributor to the field.

Appendix 2

Databases Required for Master's and Bachelors' programs (Recommended in Bachelors' Program Library Curriculum Consultation of May 19, 2017)

IEEE Explore/IET Electronic Library - \$30,000 per year

Unlimited, full-text access to all IEEE journals, transactions, and magazines; IEEE conference proceedings; IET journals and conference proceedings; and all active and historical IEEE standards. Quote is from 2016, based on Bachelor's degrees offered at TRU. The price is deeply discounted – list price in 2016 was \$164,995.00 US.

ASTM Standards (Premium) - \$10,200 per year

Compendex Database/Knovel ebook bundle - \$45,000 per year.

The premier database for engineering literature and subject-specific ebook collection.

Note:

Knovel is highly customizable by discipline. A separate quote could be requested for the undergraduate program, as the product is most suitable for undergraduate programs.

APPENDIX 3. Software Engineering Journals Available at TRU

Title	Package Name	Start Date	End Date
Advances in engineering software	ScienceDirect (CRKN)	1/1/1995	Present
Advances in Software Engineering	DOAJ: Directory of Open Access Journals	1/1/2009	Present
Algorithms	DOAJ: Directory of Open Access Journals	1/1/2008	Present
Annals of Software Engineering	SpringerLINK Archive (CRKN)	12/1/1995	12/31/1996
Automated Software Engineering	SpringerLINK (CRKN)	3/1/1994	Present
Baltic Journal of Modern Computing	DOAJ: Directory of Open Access Journals	1/1/2008	Present
Concepts in magnetic resonance	Wiley Online Library (CRKN)	1/1/1996	12/31/2002
Concepts in Magnetic Resonance: Part B, Magnetic Resonance Engineering	Wiley Online Library (CRKN)	1/1/2003	Present
CrossTalk: The Journal of Defense Software Engineering	EBSCO Open Access Computer Science Collection	1/1/1998	Present
e-Informatica Software Engineering Journal (ISEJ)	DOAJ: Directory of Open Access Journals	1/1/2007	Present
Empirical Software Engineering	SpringerLINK (CRKN)	1/1/1996	Present
Evolutionary Intelligence	SpringerLINK (CRKN)	1/1/2008	Present
Genetic Programming and Evolvable Machines	SpringerLINK (CRKN)	1/1/2000	Present
Innovations in Systems and Software Engineering	SpringerLINK (CRKN)	1/1/2005	Present
International Journal on Electrical Engineering and Informatics	DOAJ: Directory of Open Access Journals	1/1/2009	Present
International Journal on Software Tools for Technology Transfer	SpringerLINK (CRKN)	1/1/1997	Present
ISRN Software Engineering	DOAJ: Directory of Open Access Journals	1/1/2012	Present
Journal of Software Engineering Research and Development	SpringerOpen	10/1/2013	Present
Journal of Systems and Software	ScienceDirect (CRKN)	1/1/1995	Present
Peer-to-Peer Networking and Applications	SpringerLINK (CRKN)	1/1/2008	Present
Requirements Engineering	SpringerLINK (CRKN)	3/1/1996	Present
Software and Systems Modeling (SoSyM)	SpringerLINK (CRKN)	1/1/2002	Present

APPENDIX 4. Electrical Engineering Journals Available at TRU Library

Title	Package Name	Start Date	End Date
Advances in Electrical and Electronic Engineering	DOAJ: Directory of Open Access Journals	1/1/2002	Present
Advances in Electrical Engineering	DOAJ: Directory of Open Access Journals	1/1/2014	Present
Archives of Electrical Engineering	De Gruyter Open	10/6/2010	Present
Australasian Physical & Engineering Sciences in Medicine	SpringerLINK (CRKN)	1/1/2001	Present
Carpathian Journal of Electrical Engineering	DOAJ: Directory of Open Access Journals	1/1/2010	Present
Computer Science	DOAJ: Directory of Open Access Journals	1/1/2004	Present
Computers & electrical engineering	ScienceDirect (CRKN)	1/1/1995	Present
Electrical Engineering	SpringerLINK (CRKN)	1/1/1912	Present
Electrical Engineering in Japan	Wiley Online Library (CRKN)	1/1/1997	Present
Electrical, Control and Communication Engineering	De Gruyter Open	12/1/2009	Present
Electronics & Communications in Japan. Part 1, Communications	Wiley Online Library (CRKN)	1/1/1997	12/31/2007
Electronics & Communications in Japan. Part 2, Electronics	Wiley Online Library (CRKN)	1/1/1997	12/31/2007
Electronics and Communications in Japan. Part 3, Fundamental Electronic Science	Wiley Online Library (CRKN)	1/1/1997	12/31/2007
IEEE Spectrum	Publisher's Site	1/1/2016	Present
IEEJ Transactions on Electrical and Electronic Engineering	Wiley Online Library (CRKN)	1/1/2006	Present
Indonesian Journal of Electrical Engineering and Informatics	DOAJ: Directory of Open Access Journals	1/1/2013	Present
International Journal of Electrical Engineering Education	SAGE Premier (CRKN)	1/1/1999	Present
International journal of electrical power & energy systems	ScienceDirect (CRKN)	2/1/1995	Present
International Journal of Robotics Research	SAGE Premier (CRKN)	1/1/1982	Present
International Journal on Electrical Engineering and Informatics	DOAJ: Directory of Open Access Journals	1/1/2009	Present
Journal of Electrical and Computer Engineering	DOAJ: Directory of Open Access Journals	1/1/2007	Present
Journal of Electrical and Electronics Engineering	DOAJ: Directory of Open Access Journals	1/1/2012	Present
Journal of Electrical Engineering	De Gruyter Open	6/7/2011	Present
Journal of Electrical Systems and Information Technology	DOAJ: Directory of Open Access Journals	1/1/2014	Present
Journal of International Council on Electrical Engineering	Taylor & Francis Open	1/1/2011	Present
Journal of Optimization Theory and Applications	SpringerLINK (CRKN)	7/1/1967	Present
Journal of power sources	ScienceDirect (CRKN)	1/1/1995	Present
Research in Engineering Design	SpringerLINK (CRKN)	3./1/1989	Present
Russian Electrical Engineering	SpringerLINK (CRKN)	1/1/2007	Present
Serbian Journal of Electrical Engineering	DOAJ: Directory of Open Access Journals	1/1/2003	Present

APPENDIX 5. Computer Engineering Journals at TRU

Title	Package Name	Start Date	End Date
Advances in Electrical and Computer Engineering	DOAJ: Directory of Open Access Journals	1/1/2007	Present
Advances in engineering software	ScienceDirect (CRKN)	1/1/1995	Present
Applicable Algebra in Engineering, Communication and Computing	SpringerLINK (CRKN)	3/1/1009	Present
Baltic Journal of Modern Computing	DOAJ: Directory of Open Access Journals	1/1/2008	Present
Computer Applications in Engineering Education	Wiley Online Library (CRKN)	1/1/1996	Present
Computer methods in applied mechanics and engineering	ScienceDirect (CRKN)	1/1/1995	Present
Computer Science	DOAJ: Directory of Open Access Journals	1/1/2004	Present
Computer-aided civil and infrastructure engineering	Wiley Online Library (CRKN)	1/1/1997	Present
Computers & electrical engineering	ScienceDirect (CRKN)	1/1/1995	Present
Computers & industrial engineering	ScienceDirect (CRKN)	1/1/1995	Present
Computers & Structures	ScienceDirect (CRKN)	1/3/1995	Present
Computers and geotechnics	ScienceDirect (CRKN)	1/1/1995	Present
Concurrent Engineering: Research and Applications	Sage Premier (CRKN)	3/1/1993	Present
e-Informatica Software Engineering Journal (ISEJ)	DOAJ: Directory of Open Access Journals	1/1/2007	Present
Engineering with Computers	SpringerLINK Archive (CRKN)	3/1/1985	Present
International Journal Bioautomation	DOAJ: Directory of Open Access Journals	1/1/2010	Present
International Journal of Computer Science and Engineering Survey	DOAJ: Directory of Open Access Journals	1/1/2010	Present
International journal of human-computer studies	ScienceDirect (CRKN)	1/1/1994	Present
International Journal of Microwave and Millimeter-Wave Computer-Aided Engineering	Wiley Online Library (CRKN)	1/1/1996	12/31/1997
International Journal of RF and Microwave Computer-Aided Engineering	Wiley Online Library (CRKN)	1/1/1998	Present
International Journal of Robotics Research	Sage Premier (CRKN)	3/1/1982	Present
International Journal on Electrical Engineering and Informatics	DOAJ: Directory of Open Access Journals	1/1/2009	Present
International Journal on Software Tools for Technology Transfer	SpringerLINK (CRKN)	1/1/1997	Present
Journal of Electrical and Computer Engineering	DOAJ: Directory of Open Access Journals	1/1/2007	Present
Journal of Scheduling	SpringerLINK (CRKN)	1/1/2003	Present
Journal of Systems and Software	ScienceDirect (CRKN)	1/1/1995	Present
Medical & Biological Engineering & Computing	SpringerLINK (CRKN)	1/1/1997	Present
Pattern Analysis and Applications (PAA)	SpringerLINK (CRKN)	1/1/1998	Present
Peer-to-Peer Networking and Applications	SpringerLINK (CRKN)	1/1/2008	Present
Photonics and Nanostructures - Fundamentals and Applications	ScienceDirect (CRKN)	12/1/2003	Present
Research in Engineering Design	SpringerLINK (CRKN)	3/1/1989	Present
Scientific Programming	DOAJ: Directory of Open Access Journals	1/1/1992	Present
Serbian Journal of Electrical Engineering	DOAJ: Directory of Open Access Journals	1/1/2003	Present
Surveys in Mathematics and its Applications	DOAJ: Directory of Open Access Journals	1/1/2006	Present
Theory and decision	SpringerLINK (CRKN)	10/1/1970	Present
Transportation Research Part C: Emerging Technologies	ScienceDirect (CRKN)	2/1/1995	Present