FACULTY SENATE
8 Clarkson Avenue
Potsdam, New York 13699

MEMO

TO: Faculty Senate
FROM: Steve Wojtkiewicz, Senator & Faculty Senate Secretary
SUBJECT: Agenda for Monday, May 18, 2020
LOCATION: 4 PM on Zoom (https://clarkson.zoom.us/j/759755486)
DATE: May 14, 2020
Faculty Senate: https://intranet.clarkson.edu/administrative/faculty-senate/

I. Approval of Agenda
II. Approval of Meeting Minutes from May 4, 2020 (Sen. Doc. #2020-76)
III. Communications

a. Backus concurrence with CAP recommendation (Sen. Doc. #2020-64b)
b. Revision of Incomplete Grade Policy (Sen. Doc. #2020-65)
c. Revised Synopsis of Arch. and Fac. Engineering Minor (Sen. Doc. #2020-66)
d. Final Version of Materials Engineering Minor (Sen. Doc. #2020-67)
e. Clarkson University Common Experience Task Force Report AY 2019-20 (Sen. Doc. #2020-68)
f. Common Experience Task Force High-Impact or Other Practice Summary (Sen. Doc. #2020-69)
g. SLO Assessment Handbook (Sen. Doc. #2020-70)
h. Annual SLO Assessment Report Template(Sen. Doc. #2020-71)
i. Memo to Senate_re: SLOAC AY 20-21 Membership (Sen. Doc. #2020-72)
j. Memo to Senate_re: Common Experience Committee AY 20-21 Membership (Sen. Doc. #2020-73)
k. Memo to Senate_re: Common Book Committee AY 20-21 Membership (Sen. Doc. #2020-74)
l. Memo to Senate re: Facilities and Continuance and Readmission Committees Membership (Sen. Doc. #2020-75)

IV. Old Business
a. None
V. New Business
a. Results of Elections for Faculty Senate, Tenure Committee, and Promotions Committee
b. Revision to Incomplete Grade Policy (Jen Stokes and Provost Hannigan) (Sen. Doc. #2020-65)
c. Materials Engineering Minor (Sen. Docs. #2020-24 And #2020-67)
d. Update on Clarkson Common Experience Task Force (Prof. Alan Christian)
e. SLOAC Membership (Sen. Doc #2020-72)
f. Common Experience Committee Membership (Sen. Doc. #2020-73)
g. Common Book Committee Membership (Sen. Doc. #2020-74)

Clarkson

FACULTY SENATE
8 Clarkson Avenue
Potsdam, New York 13699

MEMO

TO: Faculty Senate

FROM: Steve Wojtkiewicz, Senator & Faculty Senate Secretary

SUBJECT: Minutes of Senate Meeting held on Monday May 4, 2020

LOCATION: Zoom

DATE: May 13, 2020

Faculty Senate: https://intranet.clarkson.edu/administrative/faculty-senate/

Attendees: Cohen, Fite, Prof. Gravander (ex-officio), Provost Hannigan (ex-officio), Hou, MacKinnon, Mahapatra, Ormsbee, Scrimgeour, Wallace, Wojtkiewicz, Wulandari, and Zeigler

Guests: E Backus, M. Banavar, K.Chezum, R. Cree, C. Darie, J. Dempsey, P. Fernández-Cabán , K. Janoyan, W. Jemison, J. Knack, V. LaFay, T. Langen, A. Lee, A. McGaheran, L. Perry, A. Pickering, S. Powers, C. Robinson, S. Robinson, A. Rossner, C. Sajna, C. Snyder, R. Thomas, C.Thorpe, and M. Walsh.

4:01 pm Meeting called to order by chair Kevin Fite.

I. Approval of Agenda
Approved by unanimous consent.

II. Approval of Meeting Minutes from April 20, 2020 (Sen. Doc. #2020-62)
Approved by unanimous consent.

III. Communications
Chair Fite reviewed communications.

a. Joint Bio-Pharmacy Programs CAP approval memo (Sen. Doc. #2020-55)
b. Literature Degree Name Change CAP approval memo (Sen. Doc. #2020-56)
c. Moving Expenses Policy_042720 (Sen. Doc. #2020-57)
d. Communication on One Year MSEM Program (Sen. Doc. #2020-58)
e. Change Proposal to the Engineering & Management (E&M) Curriculum(Sen. Doc. #2020-59)
f. Change Proposal for Product Development & Marketing Minor(Sen. Doc. #2020-60)
g. Provost's memo Academic Standing Spring 2020 (Sen. Doc. #2020-61)
h. Digital Arts Minor CAP approval memo (Sen. Doc. #2020-63)
i. Arch. And Facilities Engineering Minor CAP approval memo (Sen. Doc. #2020-64)
j. Faculty Senate Nominations (Oral Communication by Chair Fite)
k. Tenure Committee Nominations(Oral Communication by Chair Fite)
l. Promotions Committee Nominations (Oral Communication by Chair Fite)

IV. Old Business

V. New Business

a. Tenure Committee Nominations

Chair Fite announced that Mario Wriedt and Natasha Banerjee were nominated to stand for election from the school of Arts and Sciences. He also announced that Byron Erath and Selma Mededovic were nominated to stand for election from the Coulter School of Engineering. Motion to approve by Ormsbee (Scrimgeour). Motion CARRIED.

b. Promotions Committee Nominations

Chair Fite announced that Suresh Dhaniyala was nominated to stand for election for the at-large position on the Promotions Committee. There was some discussion of the current lack of a mechanism of clinical and teaching faculty to serve on the promotions committee. This will be investigated in the future.
Motion to approve by MacKinnon (Hou). Motion CARRIED.

c. Joint Bio-Pharmacy Programs (Sen. Docs. #2020-20 and #2020-55)

Question was raised concerning advising when they are at University of Albany; it was stated that they would keep their same advisor until their BS is granted. The waiver of the usual last year residency requirement was also discussed. Motion to approve by Wallace (Gravander). Motion CARRIED.

d. Name change to Literature Degree (Sen. Doc. #2020-48 & #2020-56)

Motion to approve Scrimgeour (Wulandari). Motion CARRIED.

e. Digital Arts Minor (Sen. Doc. #2020-50 & #2020-63)

Motion to approve by Gravander (Ormsbee). Motion CARRIED.

f. Arch. And Facilities Engineering Minor (Sen. Doc. #2020-52 & #2020-64)

There was discussion of the requirement of one course in art history, art appreciation, or related course of study. It is proposed that this course could possibly be taken at SUNY Potsdam. Relatedly, Dean Langen in his memo of Jan. 22 states: "The Chairs of CM&D, HuSS, and I do agree it would be beneficial to have a, art history or appreciation course (or related) taught at CU - it would complement CMD and would increase our Humanities offerings. We would need some resources to teach such a course, though, and need to be sure that it attracted at least eight students." Additionally, it was mentioned the Clarkson course DA 212, "Art in Context" could be an option to fulfill this requirement. Motion to approve by Gravander (Wojtkiewicz). Motion CARRIED.

g. Moving Expenses Policy (Sen. Doc. #2020-57) (Presentation by CFO Cree)

This is an effort to create a uniform, equitable policy to reimburse new employees for their moving expenses. There was discussion of placement and publicity of the policy, once instituted, so all relevant parties would be aware of its existence and its details. There was discussion of why the policy set a cap based solely on salary. Significant concerns that inequities would be created by such a criterion were raised. It was decided that the policy would continue to be developed to help alleviate the concerns raised.

h. One Year MSEM Program (Sen. Doc. #2020-58)

This consists of a format change to allow for the completion of the program in one-year full-time mode rather than the current two-year part-time model. Motion to endorse by Ziegler (Ormsbee). Motion Carried.

i. **Academic Standing Spring 2020 (Sen. Doc. #2020-61)**
This concerns the granting of a temporary exception to the academic standing procedures due to COVID-19 which eliminates the possibility of a student being academically separated after Spring 2020 semester. Motion to endorse by Gravander (Ormsbee).

j. **HR Update (Presentation by Chief Human Resources & Deputy Chief Inclusion Officer McGaheran)**

Chief Human Resources Officer McGaheran gave an update discussing topics including turnover rate, hiring and retention rate, HR related lawsuits (to the extent they can be discussed), other HR benchmarks from the past 10 years, and current and future trends in HR matters. A shortened version of that presentation will be posted as a Senate document in the near future.

5:41 pm Regular Meeting Adjourned to enter executive session to consider honorary degree nominee.

From: **Erik C. Backus, PE, LEED AP BD+C** ebackus@clarkson.edu
Subject: Re: CAP communications
Date: April 30, 2020 at 2:57 PM
To: Stefan Grimberg sgrimber@clarkson.edu, Steven Wojtkiewicz swojtkie@clarkson.edu, Kevin Fite kfite@clarkson.edu
Cc: Cecelia Martinez cmartinez@clarkson.edu, Ellen Caldwell ecaldwel@clarkson.edu, Hossein Nouri Alavijeh nouriah@clarkson.edu, James Carroll jcarroll@clarkson.edu, Jay Carlson jcarlson@clarkson.edu, Kenneth Wallace kwallace@clarkson.edu, Tim Lucid lucidt@clarkson.edu, Vicki LaFay vlafay@clarkson.edu, John P. Dempsey - jdempsey jdempsey@clarkson.edu, Steven Pedersen spederse@clarkson.edu

Stefan and the CAP Committee,

Thank you for your review and partial approval. I concur with your modification indicated in your memo of today's date as it pertains to the Architectural and Facilities Engineering minor (Option 1 as indicated in my email response of Monday, 27 April 2020).

Steve,

Please advise if the above concurrence with the CAP modification is sufficient so as to be finalized through action at the senate (assuming it concurs). Thank you.

Yours,

Erik C. Backus, P.E., LEED AP BD+C, ENV SP, FMP
Howard E. Lechler '48, MS '52, HD '78 Endowed Director
Construction Engineering Management Program
Professor of Practice and Executive Officer

Clarkson University
Department of Civil and Environmental Engineering
Wallace H. Coulter School of Engineering

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CEM Instagram: clarksonconstengrmgmt
CEM LinkedIn: https://www.linkedin.com/groups/8198478/

During this time, Clarkson is practicing "social distancing" and I am working from home. To that end, please understand potential delays in response.

On 30-Apr-20 13:59, Stefan Grimberg wrote:

> Steve
>
> please find enclosed two (one tentative) approvals of programs discussed by CAP. We approve the minor in digital art and tentatively approve the minor in architectural and facilities. This approval is contingent on the removal of one of the 10 minor requirements as proposed by Professor Backus to allow a broader cohort of students to enroll in the minor without the need to overload.
>
> While we approved the revised minor in material engineering apparently the course listing was still not complete and I requested the Chair of Chemical Engineering to obtain all endorsements of the minor course list before the CAP committee formally will approve the minor.
>
> Stefan

--
During this time, Clarkson is practicing social distancing and I am working from home **from 8:30 a.m. to 5:00 p.m.** Phone messages to my office phone will be e-mailed to me.

Stefan Grimberg, PhD, P.E., BCEE
Professor
Co-Director, Center of Excellence in Healthy Water Solutions

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MEMO

Senate Document: #2020-65

TO: Faculty Senate

FROM: Robyn Hannigan, Provost
Jennifer Stokes, Registrar

SUBJECT: Proposed revision to the Incomplete Grade policy

DATE: May 1, 2020

The attached revision to the incomplete grade policy is being brought to the Faculty Senate for consideration.

The revised policy clarifies the situations in which the assignment of an incomplete grade is appropriate, and aligns Clarkson's policy with industry best practices.

Pending approval, the revised policy would be in place beginning in the Fall 2020 term.

III-I Grading System

Undergrad regs – page 17

Graduate regs – page 18

Current Policy

2. Incomplete Grades

i. A student who is unable to complete the requirements of a course because of extenuating circumstances may seek an incomplete grade (I) for the course. Whether or not an "I" grade is given is entirely at the discretion of the faculty member for the course, although the faculty member may ask the Dean of Students Office if it has relevant information regarding students' requests. The conferring of an "I" grade carries the presumption that it is possible for the course to be

ii. completed with a passing grade; in cases where the missing work is such that it cannot be completed after the end of the semester, or where completion of the missing work could not possibly result in a passing grade for the course, an "I" grade should not be given.

iii. Requests for an "I" grade shall be made on a form available from Student Administrative Services. Faculty members indicate on the form whether they approve or disapprove the "I" grade request for their course(s) and return the completed form to Student Administrative Services. If the faculty member approves the request, they list on the form the work that must be completed to remove the "I" grade and the due date for this work and submits an "I" for the student on the course grade roster. If the faculty member disapproves the request, they submit a letter grade for the student on the course grade sheet. Unless otherwise stated on the form, or if no form is received, the work required to remove an "I" grade must be completed no later than the end of the 7th week of classes of the next semester in which the student registers at the University, otherwise a grade of "F" is recorded. All requests for "I" grades by a student in the same semester shall be made on a single form, and students seeking more than two "I" grades in the same semester must consult with the Dean of Students prior to seeking faculty approval for their requests.

iv. To remove an "I" grade, the instructor shall submit a completed Change of Grade form to the instructor's department chair (or comparable administrative officer), and upon approval, it is sent to Student Administrative Services. Then the specified grade shall replace the "I" grade in the semester(s) in which the student registered for the course.

Proposed revision

2. Incomplete Grades

i. The grade of incomplete (I) is a temporary grade given when a student is unable to complete a course by the end of the academic term due to circumstances that are considered extenuating and beyond the student's control, and can be documented. Incomplete grades can only be given if the following conditions have been met:

   a. The student has documented extenuating circumstances;

   b. The student has completed at least 75% of the course, and has no academic integrity violations for the current term;

   c. The student's academic performance to date indicates an ability to pass the course; and

   d. The student has submitted their request for an incomplete grade no later than the last day of the academic term in which they wish to take an incomplete.

ii. Incomplete grades are contingent upon instructor approval, and instructors are under no obligation to grant them. In cases where an incomplete grade is to be considered, the following provisions apply:

   a. The student must submit a request for an incomplete (I) grade to the course instructor no later than the last day of the term on an *Incomplete Grade Request* form.

   b. Instructors who approve of the request for an incomplete grade must outline the work required to successfully complete the course, as well as designate a deadline for the work to be completed. Whenever possible, the deadline should be no later than two weeks into the following term.

      (1) If the faculty member disapproves the request, they shall submit the grade earned for the student at the end of the term.

   c. All students seeking more than two incomplete (I) grades in the same semester must consult with the Dean of Students and, if directed to do so, with the Director of University Advising and/or their SAS Rep, prior to seeking faculty approval for their requests.

   d. The assignment of an incomplete (I) grade will be made by the Registrar's office upon receipt of a complete and approved *Incomplete Grade Request* form. The form must be received by the Registrar's office before the grading due date, otherwise the course instructor shall submit the grade earned by the student.

iii. To remove an incomplete (I) grade, the instructor shall submit a completed *Change of Grade* form to their department chair (or comparable administrative officer), and upon approval, it is sent to Student Administrative Services. Then the specified grade shall replace the "I" grade in the term in which the student registered for the course.

   a. If a *Change of Grade* form is not received within five (5) business days from the deadline specified on the *Incomplete Grade Request* form, then a grade of "F" is recorded.

iv. If the student does not complete the work required to resolve the incomplete grade by the deadline specified on the *Incomplete Grade Request* form, then a grade of "F" is recorded.

Clarkson™
CIVIL & ENVIRONMENTAL ENGINEERING

Erik C. Backus, PE, LEED AP
XO, Civil and Env. Engr..
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TO: Faculty Senate, Clarkson University

FROM: Erik C. Backus, Executive Officer, Department of Civil and Environmental Engineering

SUBJECT: Minor in Architectural and Facilities Engineering, Final Synopsis

DATE: 6 May 2020

Pursuant to the request of the Faculty Senate Chair, Dr. Kevin Fite, the following memo is provided as a cover to synopsize the revisions and modifications from the original proposal for the subject minor. The original proposal was initially forwarded on or about 24 September 2019 (Faculty SenDoc #2020-52) and this synopsis includes response to the notes and modifications indicated herein, especially resulting from the approval by the Curriculum and Academic Policy Committee of the Faculty Senate (Faculty SenDoc #2020-64). This memo, therefore, provides the final requirements and catalog entry for the minor as approved by the Faculty Senate, as well as the foregoing approving parties, should it be approved by the administrative council of the University.

Final Requirements of the Minor

In order to gain the specific domain knowledge in the area of Architectural and Facilities Engineering, students will complete the following four (4) core technical courses, 12 credit hours (substitutions may be granted with the approval of the CEE Department Chair):

Courses	Rationale
CE305 (Construction Planning and Management); Pre-req: Soph/Jr/Sr Status; offered Spring Semesters	Providing domain knowledge in the area of Construction Management
CE408 (Building Information Modeling/Integrated Project Delivery); Pre-req: Jr/Sr Status; offered All Semesters	Providing domain knowledge in integrated systems and technical coordination/design documentation
CE409 (Fundamentals of Building Systems), Pre-req: Jr/Sr Status; offered Spring Semesters	Providing domain knowledge in passive design, mechanical, electrical, plumbing systems in buildings/facilities
CE448 (Introduction to Architectural Engineering); Pre-Req: ES220 & Introductory Design/Innovation course, or consent; offered Fall Semesters	Providing domain knowledge background in architecture

Additionally, in order to further explore in further depth the various areas of Architectural and Facilities Engineering, students will take two (2) more courses, 6 credit hours, within the following list of courses (or others as designated and/or approved by the CEE Department Chair or designee):

- CE407 (Introduction to Scheduling and Estimating) - Construction
- CE410/510 (Sustainable Infrastructure and Building) - Sustainability
- CE411 (Construction Materials Engineering) – Construction/Materials
- CE415/515 (Foundations and Retaining Structures) - Building Structural Design
- CE441 (Reinforced Concrete Design) or CE442 (Steel Design) – Building Structural Design
- ME310 (Thermodynamic Systems Engineering) – Thermal Design
- ME411 (Introduction to Heat Transfer) – Thermal Flow
- ME444 (Computer Aided Engineering) – Design Documentation
- EE221 (Linear Circuits) – Electrical Engineering
- EE331 (Energy Conversion) – Electro-Mechanical Engineering
- EE333 (Power System Engineering) – Power Engineering
- EE/ME450 (Control Systems) – Building Automation
- EHS330 – Safety Analysis – Environment, Health, and Safety Assessment – Safety/IEQ
- ES238 (Introduction to Energy Systems) - Energy
- EV305 (Sustainability and the Environment) - Sustainability

(Note: this is inclusive of their subsequent course formulations, if modified later)

Further, in order to execute the necessary data processing and analytics involved within the field of Architectural and Facilities Engineering, students will take as their last math course (beyond Calculus 1, 2, and 3 and Differential Equations) one (1) of the following courses, 3 credit hours:

- DS241 (Introduction to Data Science)
- MA330 (Advanced Engineering Math)
- STAT383 (Probability and Statistics)
- STAT389 (Probability and Statistics with Multivariate Analysis)

Next, in order to have the needed cultural, management and other related skills for operating in the field of Architectural and Facilities Engineering, students will be required to take the following:

- A course in art history, architectural history, art appreciation, applied art, or related study (as a knowledge area/university course), 3 credit hours.
- One (1) of the following courses, 3 credit hours: EM/OM380 (Project Management), FN361 (Financial Management), OS286 (Organizational Behavior 1), or LW270 (Law and Society 1).

Finally, in order to round out the minor, the capstone experience (CE490/491, ME446, EE412, EM456, or equivalent) must have an Architectural and/or Facilities focus. Students are encouraged to seek out multi-disciplinary/inter-disciplinary capstone options (inclusive of courses related to Clarkson Ignite President's Challenge) for this purpose.

Total Credit Hours for this Minor: 27 credit hours (30 credit hours with the capstone, but that is not a unique requirement of the minor).

Further Clarifications and Notes

Through the process of review and approvals, the following items were noted as it pertains to the above, all of which have been agreed to.

CSOE Clarification

The Associate Dean of Engineering, clarified that "All engineering majors have a degree requirement that specifies an EC designated course, such as EC350, EC150, EC151. A course with an EC Knowledge Area (EC KA) course attribute is not sufficient. Engineering students automatically gain the EC KA by fulfilling the EC course requirement. EM/OM380, while it is a knowledge area course with the EC KA, will not fulfill this requirement. A student using EM/OM380 as one of five KA courses, will need to get three KAs in their three remaining KA courses."

School of Arts and Sciences Regarding Cultural Requirement

Interim Dean Langen provided this feedback as it pertains to this requirement: "The minor requires a one course in art history, art appreciation, applied art or related course of study. [The Department of Communication, Media & Design] does annually offer DA 110 – Drawing, which appears to be suitable for this minor. The proposal proposes that students take appropriate courses at SUNY Potsdam, or do a faculty exchange (which frankly I have never seen done), or hiring an adjunct. The Chairs of [Communication, Media & Design, Humanities and Social Science], and I do agree it would be beneficial to have a, art history or appreciation course (or related) taught at [Clarkson University] - it would complement [Communication, Media & Design] and would increase our Humanities offerings. We would need some resources to teach such a course, though, and need to be sure that it attracted at least eight students."

Modification as requested by Curriculum and Academic Policy (CAP) Committee

It is noted that the original proposal as provided by this office, had a requirement for two (2) Reh School of Business courses, instead of the one (1) indicated above. As shown in the record of the Faculty Senate approval of the CAP recommendation, this was outlined as "option 1" in my email of 27 April wherein I stated that my preference to reduce the requirements of the minor would be to:

"… recommend changing the proposal from requiring two (2) of the business/E&M courses to one (1) of them. This would make the selection of KA courses easier on the part of those pursuing the minor. The downside would be a loss of some key business and managerial content in the curriculum of the minor, which was part of the industry feedback as well as to dovetail with the E&M curriculum. This can be overcome through further study (Clarkson MBA) or other methods, of course, later. Also, as noted, there is a specific desire for a future course in "strategic facilities management" which could provide the needed survey of managerial and business content in potentially one (1) course. Thus, this is why I listed it as the first item to remove (e.g. the least required item in the original proposal)."

As the approval by CAP and the Senate was for this option to be included, it is modified as such in the above final requirements and catalog entry.

From: **Stefan Grimberg** sgrimber@clarkson.edu
Subject: Fwd: Materials Engineering Minor
Date: May 4, 2020 at 11:51 AM
To: Steven Wojtkiewicz swojtkie@clarkson.edu, Kevin Fite kfite@clarkson.edu
Cc: Cecelia Martinez cmartinez@clarkson.edu, Ellen Caldwell ecaldwel@clarkson.edu, Hossein Nouri Alavijeh nouriah@clarkson.edu, James Carroll jcarroll@clarkson.edu, Jay Carlson jcarlson@clarkson.edu, Kenneth Wallace kwallace@clarkson.edu, Tim Lucid lucidt@clarkson.edu, Vicki LaFay vlafay@clarkson.edu, Elizabeth Podlaha-Murphy epodlaha@clarkson.edu

SG

Steve and Kevin

please find attached the third version of the Materials Engineering Minor that was approved by CAP (via email) today and by all the engineering department chairs. The change between the various versions was the list of eligible classes that could be taken to fullfill the minor. The structure of the minor remained the same.

If needed I can send you a formal letter of approval if you need that for your deliberations. Please let me know

Stefan

---------- Forwarded message ---------
From: **Elizabeth Podlaha-Murphy** <epodlaha@clarkson.edu>
Date: Fri, May 1, 2020 at 6:31 PM
Subject: Materials Engineering Minor
To: Stefan Grimberg <sgrimber@clarkson.edu>

Stefan,
Attached, please find the proposed Materials Engineering Minor.
Best regards,
Lisa

--
Elizabeth (Lisa) J. Podlaha-Murphy
Professor and Chair
Department of Chemical & Biomolecular Engineering
Clarkson University
Potsdam, NY 13699
Tel 315 268-4167

--
During this time, Clarkson is practicing social distancing and I am working from home **from 8:30 a.m. to 5:00 p.m.** Phone messages to my office phone will be e-mailed to me.

Stefan Grimberg, PhD, P.E., BCEE
Professor
Co-Director, Center of Excellence in Healthy Water Solutions

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Materials Minor Applica...ate.pdf

DEPARTMENT OF CHEMICAL AND BIOMOLECULAR ENGINEERING
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May 1, 2020

Clarkson Faculty Senate
Clarkson University
Potsdam, NY 13676

Dear Faculty Senate:

Attached is a proposal for the Materials Engineering Minor, to be administered through the Department of Chemical & Biomolecular Engineering. It is of interest to undergraduate students in the School of Engineering and adds more flexibility to their curriculum choices.

This proposal was vetted by all the departments within the School of Engineering.

Please find attached,

1) Material Engineering Minor proposed courses,

and confirmed approvals by:

2) Dean of Engineering, Bill Jemison,
3) Associate Dean of Engineering, John Moosbrugger,
4) Chair of Civil and Environmental Engineering, John Dempsey,
5) Chair of Mechanical and Aeronautical Engineering, Brian Helenbrook, and
6) Chair of Electrical and Computing Engineering, Paul McGrath.

I also approve of the proposed Material Engineering Minor for the Department of Chemical & Biomolecular Engineering.

We look forward to your positive evaluation.

Sincerely,

Elizabeth Podlaha-Murphy
Professor and Department Chair

Materials Engineering Minor

Knowledge and intellectual growth of materials engineering is critical to many industrial, government and academic positions here in the State of New York, as well as to our nation and abroad. The need to understand materials engineering fundamentals are driven by current and emerging areas of infrastructure construction, materials for sensing, technological hazards, future manufacturing process (*e.g.*, cyber-, bio-, eco-manufacturing), micro and nanoelectronic device fabrication, polymer processing and 3D printing, energy materials (*e.g.*, batteries, solar, bio-fuels), metallurgical processes including corrosion protection, sustainable solutions to plastic waste, and a broad spectrum of ceramics for electronic components, and particles used in chemical mechanical planarization (CMP), cosmetics, and inks. Fundamentals presented within the course requirements and electives listed below include the governing behavior of structure, energetics, and bonding that underpin materials science, thermodynamic laws governing equilibrium properties, relating macroscopic behavior to atomistic and molecular models of materials, the role of electronic bonding in determining the energy, structure, and stability of materials, materials' properties, such as heat capacities, phase transformations, and multiphase equilibria to chemical reactions and magnetism, structure of complex, disordered, and amorphous materials and how to quantify, measure and predict them.

Clarkson University is offering a Materials Engineering Minor to prepare students for diverse employment opportunities that require knowledge of materials fundamentals and applications. Students seeking the minor must complete 2 required courses and 3 electives from the listed courses below for a minimum of 15 credit hours. Alternative elective courses can seek approval from the Materials Engineering Minor program director.*

Required courses (2)

ES260 Materials Science and Engineering I

ES360 Materials Science and Engineering II

Electives (3)

Course		*Pre-requisite or co-requisite*
Engineering Courses		
ES222	**Strength of Materials**	ES220 or permission of the instructor
ES241	**Solid-State Materials Systems for Advanced Technologies**	PH131, CM103 or CM131, MA131 and MA132
ES361	**Fine Particle Technology**	CM104 or CM132
ES365	**Polymer Materials**	CM104 or CM132
ES452	**Biomaterials and Biomedical Applications**	BY160, CM132 or CM104, MA132, and PH131

ES464	**Corrosion of Metals**	CM132 (or CM104) and ES260
MSE451	**Advanced Materials Characterization**	CM371, CH210, PH132, and ES260
CE411	**Construction Materials Engineering**	Co-requisite: CE441
CE453	**Properties and Performance of Concrete**	ES260
CH441	**Introduction of Nanophotonics**	PH132 and MA232
CH484	**Polymer Engineering**	CH301 or ES330 (either can be taken as a co-requisite)
EE341	**Microelectronics**	ES250
EE439	**Dielectrics**	none
EE443	**Semiconductor Material and Devices for Engineers**	Senior standing or permission by instructor
AE/ME457	**Composite Mechanics and Design**	ES222 and ES260
ME390	**Additive Manufacturing**	ES260 & ES222 or equivalent
ME457	**Composite Mechanics and Design**	ES222 and ES260
ME492	**Welding Metallurgy**	ES260 and ME411
Science courses		
CM221	**Spectroscopy**	CM104 or CM132
CM430	**Colloids and Interfaces**	None
CM435	**Better Materials through Chemistry**	CM241
CM475	**Sustainable Nanotechnology**	Junior standing or permission by instructor
CM483	**Introduction to Polymer Science**	Junior standing or permission by instructor
CM485	**Nanostructured materials**	Senior standing or permission by instructor
PH331	**Quantum Physics**	PH231 and MA232
PH341	**Solid State Physics I**	PH231, or ES260, or consent of the instructor
PH442	**Solid State Physics II**	PH341 or consent of the instructor

PH487	**Applications of Synchrotron and Electron Based Techniques**	PH132 or consent of the instructor; ES260 and/or PH231 are recommended pre-requisites

*Possible alternative courses include those at the graduate level, such as:

ME506	**Mechanical Behavior of Materials**	Permission by instructor
ME508	**Fracture Mechanics**	Permission by instructor

Clarkson

Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>

Approval by Chairs/Assoc Dean - Materials Minor

Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu> Fri, May 1, 2020 at 3:31 PM
To: John Moosbrugger <jmoosbru@clarkson.edu>, John Dempsey <jdempsey@clarkson.edu>, Brian Helenbrook <bhelenbr@clarkson.edu>, Paul McGrath <pmcgrath@clarkson.edu>, William Jemison <wjemison@clarkson.edu>

SoE Chairs and Assoc Dean,
If you approve of the final revision of the attached Materials Engineering Minor, please reply indicating "approve".
Thank you for your input.
--
Elizabeth (Lisa) J. Podlaha-Murphy
Professor and Chair
Department of Chemical & Biomolecular Engineering
Clarkson University
Potsdam, NY 13699
Tel 315 268-4167

FINAL Materials Engineering Minor - 050120.docx
33K

Clarkson

Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>

Approval by Chairs/Assoc Dean - Materials Minor

William Jemison <wjemison@clarkson.edu> Fri, May 1, 2020 at 4:40 PM
To: Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>
Cc: John Moosbrugger <jmoosbru@clarkson.edu>, John Dempsey <jdempsey@clarkson.edu>, Brian Helenbrook <bhelenbr@clarkson.edu>, Paul McGrath <pmcgrath@clarkson.edu>

I approve, too.

Bill

William D. Jemison, Ph.D.
Tony Collins Professor of Innovative Engineering Culture
Dean of Engineering
Fellow, IEEE

Clarkson
COULTER SCHOOL OF ENGINEERING

Box 5700
8 Clarkson Avenue
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315-268-6509 Office
610-217-1832 Cell
wjemison@clarkson.edu

On Fri, May 1, 2020 at 3:31 PM Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu> wrote:
[Quoted text hidden]

Clarkson

Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>

Approval by Chairs/Assoc Dean - Materials Minor

John Moosbrugger <jmoosbru@clarkson.edu> Fri, May 1, 2020 at 3:49 PM
To: Paul McGrath <pmcgrath@clarkson.edu>
Cc: Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>, John Dempsey <jdempsey@clarkson.edu>, Brian Helenbrook <bhelenbr@clarkson.edu>, William Jemison <wjemison@clarkson.edu>

I approve the attached Final Version of the Materials Engineering Minor.

On Fri, May 1, 2020 at 3:39 PM Paul McGrath <pmcgrath@clarkson.edu> wrote:
[Quoted text hidden]

--
Clarkson is practicing social distancing and I am working from home. If this is an urgent matter, please call my cell at 315-212-0781.

John C. Moosbrugger, Ph.D.
Professor, Associate Dean for Academic Programs
Wallace H. Coulter School of Engineering
Interim Director, Honors Program
Clarkson University
Potsdam, NY 13699-5700
moose@clarkson.edu
315-268-6532
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Clarkson

Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>

Approval by Chairs/Assoc Dean - Materials Minor

John Dempsey <jdempsey@clarkson.edu> Fri, May 1, 2020 at 4:06 PM
To: John Moosbrugger <jmoosbru@clarkson.edu>
Cc: Paul McGrath <pmcgrath@clarkson.edu>, Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>, Brian Helenbrook <bhelenbr@clarkson.edu>, William Jemison <wjemison@clarkson.edu>

I approve the attached Final Version of the Materials Engineering Minor.

CEE Chair

On Fri, May 1, 2020 at 3:43 PM John Moosbrugger <jmoosbru@clarkson.edu> wrote:
[Quoted text hidden]

Clarkson

Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>

Approval by Chairs/Assoc Dean - Materials Minor

Brian Helenbrook <bhelenbr@clarkson.edu> Fri, May 1, 2020 at 4:10 PM
To: John Dempsey <jdempsey@clarkson.edu>
Cc: John Moosbrugger <jmoosbru@clarkson.edu>, Paul McGrath <pmcgrath@clarkson.edu>, Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>, "William D. Jemison Ph.D." <wjemison@clarkson.edu>

I approve as well.

Brian
[Quoted text hidden]

Clarkson

Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>

Approval by Chairs/Assoc Dean - Materials Minor

Paul McGrath <pmcgrath@clarkson.edu> Fri, May 1, 2020 at 3:39 PM
To: Elizabeth Podlaha-Murphy <epodlaha@clarkson.edu>
Cc: John Moosbrugger <jmoosbru@clarkson.edu>, John Dempsey <jdempsey@clarkson.edu>, Brian Helenbrook <bhelenbr@clarkson.edu>, William Jemison <wjemison@clarkson.edu>

Hi Lisa
I approve of the attached Final version of the Materials Engineering Minor.
Thanks
Paul

[Quoted text hidden]

Review of the Clarkson University Common Experience General Education Curriculum and Program

Submitted by

2019-2020 Common Experience Task Force

Submitted to

Robyn Hannigan, Provost

Clarkson University

Potsdam, New York

Spring 2020
(9 May 2020)

ACADEMIC YEAR 2019-2020 TASK FORCE MEMBERSHIP (ALPHABETICAL ORDER BY LAST NAME)

Name	Unit	Role
Goodarz Ahmadi	Mechanical and Aeronautical Engineering	Member
Jennifer Ball	Chief Inclusion Office	Member
Christine Campbell	Academic Skills	Member
Tess Casler*	International Students and Scholars	Member
Alan Christian	Biology	Chair, Ex-Officio
Erin Draper	Clarkson Ignite	Member
Mason Elle-Gelernter**	Clarkson University Student Association	Member
Andrea Ferro	Civil and Environmental Engineering	Member
Alex French	Institute of Sustainability and the Environment	Member
Benjamin Galluzzo	Institute for STEM Education	Member
Michael Garcia	Humanities and Social Sciences	Member
Jerry Gravander	School of Arts and Sciences	Member
Martin Heintzelman	Reh School of Business	Member
Claudia Hoffmann	Humanities and Social Sciences	Member
Lisa Hoover	University Libraries	Member
Margo Jenkins	Career Center	Member
James Peploski*	Chemistry and Biomolecular Sciences	Member
Amanda Pickering	Provost Office	Ex-officio
Jefry Lopez Rincon**	Clarkson University Student Association	Member
JoAnn Rogers	Humanities and Social Sciences	Member
Catherine Sajna	Excellence in Communication	Member
Jen Stokes	Registrar, Student Administrative Services	Member
Allan Zebedee	Reh School of Business	Member

*Voluntarily asked to be removed from the Task Force after spring break due to time commitments. Therefore, they did not get an opportunity to review the final report and should not be held accountable to the contents.

** Invited and included in all communications, but were not present at any meetings and may or may not have participated in any surveys.

EXECUTIVE SUMMARY

The Clarkson Common Experience general education/liberal arts curriculum was adopted in 2006 and revised in 2012. While the current Common Experience is reasonably good, robust, and has many of the components of an effective general/liberal education program, it is perceived to be outdated in many areas, is only assessed directly for one component (Communications/UNIV 190) and indirectly (FY 100 First Year Seminar) for another component of the program, lacks effective programmatic shared governance administration and oversight, and is perceived to lack resources. Concerning the direct measures assessment of the communications requirement, while assessment artifacts and rubric scoring is collected every semester, the actual assessment analysis of the communications has not been conducted since 2014.

The goal of this Task Force was to convene a group of general education stakeholders, conduct a SWOT analysis of the Common Experience general education program, hold workshops and information gathering activities on emerging high impact and other practices, instructional and non-instructional topics, rate the SWOT analysis responses, and write, review, and submit a SWOT analysis report to be submitted to the Provost and shared with the faculty senate and the university community at large.

While the Task Force lacked traditional assessment materials to evaluate the Common Experience, we were able to learn about the Common Experience and high impact and other practices on and off campus and use the SWOT analysis to derive some take away points. The Task Force finds the Common Experience to be an aspirational effort, and that there are good components of the existing program, especially the communication and professional experience expectation. However, the Task Force recognizes that the program needs to be somewhat revised by updating that aspirational message and simplifying or re-imagining the categories of the Knowledge Areas, ensuring Global Issues & Cultures and Societies and Sustainability components, and incorporating instructional and non-instructional Skills, Perspectives, and High Impact Practices into the program as part of the formal requirements. The Task Force found that the Common Experience program would benefit by a better and more transparent shared governance process for managing, assessing, revising, and promoting the program that has been in place or practiced. This is especially true of identifying, evaluating, approving, and assessing knowledge, skills, and perspective components of the program. Furthermore, the Task Force recognizes the need for additional resources or investments for the program to be more successful. Finally, the Task Force finds that by revising and updating what it means to be a Clarkson Student through the Common Experience, we have the opportunity to create learning outcomes that are consistent with the mission, vision, and values of the University, while tying in major requirements, co-curricular activities, and accreditation standards.

In the spirit of Middle States Association of Colleges and Schools “Continuous Improvement” expectation, the Task Force puts forward some considerations to be discussed, developed, and executed in Academic Year 2020-2021 by the Common Experience Committee of the Faculty Senate: 1) Define what a Clarkson University student should look like, in terms of

values and skills, over the next 10 years, and create a revised Common Experience with goals and objectives to support that vision; 2) Revise the Common Experience while meeting majors, accreditation, and governing body requirements by:

- Simplifying the Knowledge Areas to Arts, Humanities, Social Sciences, Natural Sciences, Mathematics, and Global Issues and Cultures and Societies. (becomes a common experience of exploring Knowledge Areas);
- Keep, but evaluate, UNIV 190 as a Critical Thinking (Reading, Writing, and Analysis Course) requirement (a common experience);
- Rework the Mathematics requirement to split out a Quantitative Reasoning requirement by leveraging the existing Mathematics requirement (a common experience);
- Rework the Freshmen Seminar (FY 100) into a four-year 1 credit seminar series that builds students skills and perspectives (aka attitudes) areas (SA and PA) through instructional and non-instructional experiences and includes high impact and other practices (Majors may be responsible for years 2-4, but modules plugged in from across campus);
- Majors become responsible for, but included in Common Experience a) Communication across the curriculum and b) Capstone experience (e.g. independent study, internship, study abroad, capstone course, etc; the professional experience revised);
- Use of ePortfolios for integrative learning to illustrate and archive knowledge, skills, and perspectives in major and Common Experience and major artifacts;
- Establishment a sub committee to oversee by developing, reviewing, approving, assessing, and evaluating courses and outcomes of a) Knowledge Areas (KA content) and b) four year seminars (Skills (SA) and Perspective (PA) areas content)

Approval of the final report and its findings as a fair and transparent representation of the 2019-2019 Common Experience Task Force activities and findings was voted on by a measure of 10 “Yea”, 2 “Nay”, and 1 “Abstain” votes from the 19 (17 if students removed due to lack of participation) remaining voting members.

BACKGROUND

THE CLARKSON COMMON EXPERIENCE

The Clarkson Common Experience general education/liberal arts curriculum was adopted in 2006 and revised in 2012. Below is a copy of the academic requirements taken from the Undergraduate Catalog (Clarkson University 2019).

ACADEMIC REQUIREMENTS

A Clarkson education prepares each student for today's world and tomorrow's challenges. All Clarkson students are required to meet the learning expectations of the Clarkson Common Experience. The Clarkson Common Experience integrates each student's learning in a major field of study with learning expectations that broaden the student's understanding of our modern world. Each Clarkson graduate achieves objectives in fundamental academic abilities, in personal and social development, and in prescribed areas of knowledge.

Learning Expectations

Each Clarkson graduate will achieve academic abilities that include: mastery of a major field of study, effective communication in oral, written, and technological forms, critical and imaginative thinking, and problem solving skills using both quantitative and qualitative reasoning where appropriate. Each graduate is also expected to experience personal and social development that includes: an increased understanding of and insight into his or her own behavior, an appreciation of the need for self-motivated life-long learning, an increased social awareness and interpersonal competence, including an appreciation for the value of experiencing diversity, and an understanding of and recognition of the need for personal, societal, and professional ethics. Knowledge is the essence of a university education, and each Clarkson graduate is expected to become knowledgeable beyond his or her major field in these areas: the nature of cultures and societies, contemporary and global issues, the imaginative arts and their role in society, science and technology, including their relationship to society and their impact on the environment, economic and organizational concepts and decision-making, and methods for studying and explaining individual and group behavior.

The Clarkson Common Experience.

The Clarkson Common Experience provides a common set of learning expectations and outcomes for all Clarkson students. To achieve these outcomes, each student is required to complete a set of courses and a professional experience. Course work consists of required and elective courses both from within a student's major field and from across the spectrum of all disciplines in the university. Embodied in the Common Experience are four components that serve as common threads through multiple courses: learning to communicate effectively, developing an appreciation for diversity in both working and living environments, recognizing the importance of personal, societal, and professional ethics, and understanding how technology can be used to serve humanity. Each of these components is introduced early in the curriculum, reinforced in subsequent courses, and included in upper division courses.

The Communication Component. To develop excellent communication skills, Clarkson requires communication-intensive coursework, first in UNIV190, The Clarkson Seminar, then across the curriculum and in the major. Courses designated as writing intensive are assigned communication points on a scale of one or two (C1 or C2) to indicate the extent of

communication experience in that course. Beyond UNIV190, The Clarkson Seminar (which meets the criteria for a C2 course), students must obtain six more "communication points," at least two of them within the major at the 300/400 level. Communication points can be obtained by taking designated courses, or, with approval, through co-curricular experiences. Depending on initial abilities and background, students may also be required to enroll in a course that provides writing instruction and support for UNIV190, The Clarkson Seminar. Students for whom English is a second language must also meet the ESL requirements as described below.

The Diversity Component. From the moment they arrive on campus, Clarkson students prepare for the culturally diverse environments they will inevitably experience in their future careers. FY100, First-Year Seminar, helps students "respect and learn from Clarkson's diverse community." In UNIV190, The Clarkson Seminar, students will be urged to question their own assumptions and to consider different worldviews. Later in their academic coursework, students will gain a deeper understanding of cultural diversity within and among societies, recognizing how it influences their own actions and affects the lives of those around them. The Professional Requirement in the major area of study will prepare students to enter the global workforce by helping them understand the importance of diversity in the workplace.

The Ethics and Values Component. Through a repeated emphasis on ethics and values, Clarkson promotes in its students the profound reflection necessary to sustain personal, academic, professional, and civic integrity. Students are expected to view this process not just as an academic issue, but as critical for all aspects of their lives, including community activities, sports, student organizations, and work. Issues of personal ethics and values are addressed beginning with FY100, First-Year Seminar. Social and cultural values are discussed as part of UNIV190, The Clarkson Seminar. Several courses in the knowledge sequence emphasize social and cultural values or philosophical and ethical issues. In the Professional Requirement, students identify ethical problems in situations typically encountered within their professions and analyze these issues from different ethical perspectives.

The Technology Component. All Clarkson students are expected to understand the basis of our modern technological society and to gain an appreciation for both the potential benefits and limitations of technology. Students will be introduced to the basic knowledge necessary for understanding technology through two courses in mathematics and two courses in the natural sciences, including at least one with a laboratory component. A Technology Course is required that reinforces this knowledge in the context of demonstrating how technology may be used to serve humanity. The interrelation of science, technology and society is studied in one of the knowledge area courses.

Requirements of the Clarkson Common Experience

FY100, First-Year Seminar. First Year Seminar treats personal and social adjustment topics as well as Clarkson values, ethics and diversity. [Fall semester] [Required only for first-year students.]

UNIV190, The Clarkson Seminar. The Clarkson Seminar creates learning communities which focus on questioning received wisdom. The seminar introduces students to the role of values and ethics in culture and society. The objectives are to develop students' reasoning abilities through critical analysis of the received beliefs and assumptions of their own societies and cultural traditions, and to develop students' communication abilities through writing and discussion. [Fall semester]

Knowledge Areas and University Courses. Students achieve learning outcomes in six broad areas of knowledge. Students are required to take at least five courses that have Knowledge Area designators, and the five courses must cover at least four of the six Knowledge Areas listed below: 1) Cultures and Societies (CSO), 2) Contemporary and Global Issues (CGI), 3) Imaginative Arts (IA), 4) Science, Technology, and Society (STS), 5) Economics and Organizations (EC), and 6) Individual and Group Behavior (IG). Additionally, at least one of these five courses must be a University Course that has two Knowledge Area designators. University Courses are multidisciplinary and address learning outcomes in two of the six areas of knowledge, and students observe and participate in the interaction of disciplines.

Mathematics, Science and Technology Courses. Students must achieve learning outcomes in basic mathematics, science and technology by completing five courses in these areas. Students develop quantitative literacy through the study of mathematics, including probability and statistics. Students must take two courses in mathematics as specified by the major. Students develop an understanding of the principles of science and technology through two natural science courses, at least one of which must have an integrated laboratory component. Students gain an understanding of how technology is developed through a Technology Course that addresses the theme of technology serving humanity.

Communications. Clarkson places a strong emphasis on developing students' abilities to communicate effectively in a variety of contexts using diverse forms of communication. Students must select coursework and possibly extra-curricular activities that carry a total of at least six communications points. Courses and activities with a communications component will be identified as carrying either one or two points. At least two points must come from within the student's major discipline in a course at the 300 or 400 level.

Major Field of Study. A significant characteristic of the Common Experience is the integration of requirements from both outside and within a major field of study. Each student pursues a degree program in a major field and must complete a set of prescribed courses to demonstrate mastery of that field. As part of these courses, students achieve outcomes to meet requirements of the Common Experience as described below.

- *Information Technology.* Expertise Students will gain expertise in using information technology and computational software appropriate to their major field of study.
- *Communications.* Students must complete course work in the major field at the 300 or 400 level that includes discipline- specific communication for a total of at least two communications points.
- *Professional Requirement.* The Professional Requirement incorporates learning outcomes involving professionalism, ethics, and diversity. These outcomes include understanding the concepts of professionalism, professional responsibility, and professional ethics, and knowing how the student's professional community promotes, supports, and enforces these concepts. Students should develop an appreciation for the value of diversity in the workplace.
- *Professional Experience.* All students participate in a project-based professional experience following the first-year such as co- op, internship, directed research, or community project clearly related to the student’s professional goals.

STATEMENT OF THE PROBLEM

As stated above, the Clarkson University Common Experience program was adopted in 2006 and revised in 2012. While the curriculum has many of the components of an effective general/liberal education program, it is perceived to be outdated in many areas, is only assessed directly for one component (Communications/UNIV 190) and indirectly (FY 100) for another component of the program, lacks effective programmatic shared governance administration and oversight, and is perceived to lack resources. Concerning the direct measures assessment of the communications requirement, while assessment artifacts and rubric scoring is collected every semester, the actual assessment analysis of the communications has not been conducted since 2014 (Christian, personal communication).

GOALS AND GENERAL APPROACH

The goal of this Task Force was to convene a group of general education stakeholders, conduct a SWOT analysis of the Common Experience general education program, hold workshops and information gathering activities on emerging high impact and other practices, instructional and non-instructional topics, rate the SWOT analysis responses, and write, review, and submit a SWOT analysis report to be submitted to the Provost and shared with the faculty senate and the university community at large. The activities of the Task Force will be transparent and advisory to the Provost.

METHODOLOGY

MEMBERSHIP

The Provost Office's AY 2019-20 Common Experience Task Force is an advisory group consisting of broad instructional and non-instructional stakeholders. Membership spans across campus and members are ambassadors/representatives of their home units (See the membership table on Page 3).

GENERAL TIMELINE

Topics, outcomes/projects, and dates of the AY 2019-20 General Education Task Force includes, but was not limited to:

- Introductory Meeting, Charge, and Introductions (Nov)
- SWOT Analysis of Common Experience General Education (Dec)
- ePortfolio demonstration by DIGIcation (Jan)
- Targeted informational workshops/information gathering based on SWOT analysis (Jan/Feb)
- Drafting summaries of High Impact and other practices (Jan/Feb)
- Task Force Member Ranking of SWOT items (Feb)
- SWOT Break-out group reporting (March)
- Draft a SWOT Analysis Findings Report (March)
- Review Report (April)
- Submit SWOT Report to Provost and Faculty Senate and post online to broader CU community (May)

Common Experience Strengths, Weaknesses, Opportunities, and Threats Analysis

A SWOT analysis is a strategic planning technique used to help organizations identify Strengths, Weaknesses, Opportunities, and Threats related to business competition or project planning (Dyson et al 2004). In the business setting, Strengths and Weakness are internal factors and Opportunities and Threats are considered external factors; however, for projects Opportunities and Threats can be considered internal factors/components or factors for making changes. By definition: Strengths are components of the project that give the project an advantage; Weaknesses are components of the project that are negatives or take away from the effectiveness of the project; Opportunities are components that could be added that improve the effectiveness of the project; and Threats are components that take away from the effectiveness of the project.

On 8 November 2019, Provost Hannigan charged the Common Experience Task Force to conduct a SWOT analysis of the Common Experience program. The SWOT analysis was developed as a survey to the Task Force Membership in which the members, and their constituents (if so wished), responded to the Strengths, Weaknesses, Opportunities, and Threats of 9 areas associated with the current Common Experience: 1) Common Experience Required Courses, 2) Specific Learning Experiences, 3) Associated major/Accreditation requirements, 4) High Impact Practices, 5) Other Skills or experiences, 6) Operations and Governance, 7) Instructional and non-Instructional Assessment, 8) Finances and Resources, and 9) Other issues. This survey was expected to take about an hour and the Task Force was asked to respond by 4 December 2019. The survey was set up to be anonymous to encourage uninhibited responses and there were 14 individual responses to the survey.

At our 12 December 2019 Task Force meeting, we discussed enhancing the open ended SWOT survey results by adding an "Agreement" and "Importance" rating to the open ended responses so that we could better gauge the general support for each of the responses as being anonymous did not allow for folks to say they agreed or disagreed. There were 15 respondents to this second survey. During that meeting, we also discussed and assigned summaries and reports of existing and potential High Impact Practices and other practices to be shared with the group with the due date January (i.e. Workshops and Information Gathering Activities). As a final item of the December meeting, Alan Christian, Chair, provided and presented a presentation on General and Liberal Education including Knowledge Areas, Skills, and Attitudes/perspectives and general education capabilities, New York State Education Department General Education policy, and the American Association of Colleges and Universities High Impact practices.

At our 16 January 2020 meeting, we participated in a ZOOM webinar with the ePortfolio company, DIGIcation. The webinar went over the capabilities as an assignment or course activity, ePortfolios as showcases, ePortfolios as integrated and reflective learning, and ePortfolio use in assessment. ePortfolios are considered to be a High Impact Practice. At this time, we shared the Task Force membership and other invited participants High Impact and other Practices summaries (i.e. Information Gathering Activities) on a shared drive and asked the members to review.

At our 13 February 2020 meeting, we discussed the challenges of the "Agreement and Importance" survey and its validity due to the low response rate, instances of people not responding appropriately to the initial open ended response survey, and the inability of non-Task Force members to respond to the survey if the link was forwarded to them. Despite these problems with the survey, we agreed to create breakout groups to examine the results more

closely with either a qualitative approach (not use the ratings), use the quantitative responses and look for patterns of 1) agreement, 2) polarization, or 3) fragmentation, discuss the items within their group, or use a combination of these approaches. We then allowed members to self-organize into four break-out groups aligned with the categories of Strengths, Weaknesses, Opportunities, and Threats, assigned group leaders, scribes, and reporters. These groups used the qualitative and quantitative survey results and their own perspectives to generate a written summary.

At our 26 March 2020 meeting, each group had a 15-minute session to summarize their findings and to field questions from the rest of the group via a Zoom meeting. The meeting notes were taken and a portion of this report is based on the written and oral responses.

At our 27 April 2020 meeting, we met a Zoom meeting. We met for 50 minutes and had an open floor for questions, comments, and feedback.

Electronic copies of the meeting agenda and notes, the raw results of the two surveys, any presentations and reference documents of the chair's presentations, the high impact and other practice summaries, and the SWOT break-out group summaries are found on a shared google drive via links in the Appendix Session.

In terms of our process, we looked at each item from the original SWOT analysis. Where there was more than one variable, we isolated individual variables and then tallied those items which were noted multiple times. (See Doc "Notes on "Weaknesses" Breakout Group Methods and Results" and spreadsheet Weaknesses Summary-Sheet "Single Variable"). We looked at the survey results and ranked the items that were considered important and highly important. This did not sufficiently discriminate since 80% of the items were ranked at 50% or above in these two categories; therefore, we took the top 20%. (See spreadsheets Weaknesses-Working Doc and Weaknesses Summary-Sheet "Top 20% Multi-Variate"). We then compared the disaggregated data with multiple tallies and the top 20% of the survey data and found good agreement. (See spreadsheet Weaknesses Summary-Sheet "Combination"). We noticed that some items were mentioned in different categories, so we realized that there were problems in the categories themselves. For example 'diversity' was mentioned for almost each category. 'Confusion' was mentioned in multiple categories as were financial resources and assessment. Where practical we put the comment in the appropriate category."

It is important to note here in the SWOT methodology section that the Weakness breakout group made a comment on the SWOT survey methodology during their reporting out. This represents an opinion of the "Weakness Breakout Group" that may or may not be shared by all Task Force members but is memorialized here for transparency purposes.

> *"Although we are limiting our conclusions to the concerns that were raised most often in the 'survey,' we do not think that the 'survey' is a useful starting point for identifying weaknesses. We recommend that the starting point be 1) the MiddleStates Accreditation Requirements and 2) making a request for data from Institutional Research in order to get a picture of what is actually happening now as far as meeting or not meeting those requirements. Middle States Requirements: 5. at institutions that offer undergraduate education, a general education program, freestanding or integrated into academic disciplines, that: a. offers a sufficient scope to draw students into new areas of intellectual experience, expanding their cultural and global awareness and cultural sensitivity, and preparing them to make well-reasoned judgments outside as well as within their academic field;b. offers a curriculum designed so that students acquire and*

demonstrate essential skills including at least oral and written communication, scientific and quantitative reasoning, critical analysis and reasoning, technological competency, and information literacy. Consistent with mission, the general education program also includes the study of values, ethics, and diverse perspectives (https://www.msche.org/standards/).

We are concerned that highlighting only those responses with multiple tallies and a high percentage of responses will have eclipsed important insights made in a single entry by someone familiar with one particular problem in the system. We are also concerned that the MiddleStates Accreditation Requirements, which should be the foundation of any changes, may not be properly emphasized. We learned a lot in our discussion among ourselves in this break-out group. "

HIGH IMPACT AND OTHER PRACTICES

As part of the review process, we also explored high impact and other practices that existed on campus or that emerged from other discussions of relevant common experience activities. The Task Force came up with 18 high impact and other practices including reports on how the common experience impacts school majors. The following 18 Workshops and Information Gathering reports are found as an electronic appendix.

1. Topic Name: Business Majors and the Common Experience
2. Topic Name: Diversity and Inclusion
3. Topic Name: Engineering majors requirements, constraints, and considerations
4. Topic Name: ePortfolio
5. Topic Name: ESL/EAP Requirement
6. Topic Name: 4 Year Seminar
7. Topic Name: General Education Capabilities and KSR Areas
8. Topic Name: High Impact Practices
9. Topic Name: HSS Major and General Education in HSS
10. Topic Name: Clarkson Ignite
11. Topic Name: Common Experience & Information Literacy - LIB 201
12. Topic Name: Professional Experience - Internships and Co-ops
13. Topic Name: Living Learning Communities
14. Topic Name: Common Experiences and Natural Science Majors
15. Topic Name: Registrar and Scheduling
16. Topic Name: Sustainability
17. Topic Name: Univ 190
18. Topic Name: Student Wellness
19. Topic Name: First Year Experience

SWOT BREAKOUT GROUP FINDINGS AND SUGGESTIONS

STRENGTHS

Membership:

- Goodarz Ahmadi, Tess Casler, Michael Garcia, James Peploski

Narrative

- The current Common Experience structure is robust and effective. It needs only minor adjustments. Particular strengths include: the Professional Experience requirement, Communication Points (which assures that students will learn to write across the curriculum, including in their own fields), Global Experience (including study abroad and courses with a global or diverse focus, such as anthropology, history, and other liberal arts courses), Critical Thinking skills (across the curriculum), and UNIV 190 (aka the "Clarkson seminar," a reading- and writing-intensive first-year seminar).

Key Findings **(Breakdown by the 9 areas in the SWOT survey)**

- Q1: Strengths - Common Experience Required Courses (FYS/Knowledge areas)
    - Taking courses outside the major provides a more well-rounded experience
    - FYS (FY 100) includes option for sustainability-themed project or module
    - UNIV 190 - a writing-intensive, theme-based course that delivers the writing and communication skills that students will need later in their educational and professional careers
    - Overall - faculty / staff are used to it
    - Keep 5 external courses requirement for all majors
    - The current Gen Ed is strong - keep the current 11 courses
        - Suggestion - replace the knowledge areas with a more flexible structure. Namely 5 courses in humanities and social sciences (taking at least 2 of each, i.e. students would have two options: take 2 humanities and 3 social science courses; or take 3 humanities and 2 social science courses). (Schools can add their own restrictions.)
    - Global Issues & Cultures and Societies knowledge areas requirement
    - Note - ABET requires engineers to be exposed to Global Issues and Cultures and Societies.
- Q2: Strengths - Specific Learning Experiences
    - Professional Experience stands out as a vital and necessary component of the common experience
    - Communication Points system ensures students will gain communication skills across the curriculum
- Q3: Strengths - Associated Major/Accreditation Requirements

    - Strong academic & cultural programs create well rounded, culturally sensitive students
    - Strong CU brand provides student employability/marketability
    - Knowledge Areas match ABET requirement
- Q4: Strengths - High Impact Practices
    - Strong study abroad, co-op / internationship programs provide enhanced student development
    - Required professional experience is one of the strongest aspects of Clarkson's program
    - UNIV 190 is a HIP course. High Impact Practices (HIP) include: writing-intensive, writing across the disciplines, a first-year seminar format (not to be confused with FY100), and learning communities.
- Q5: Other skills or experiences
    - critical thinking skills are essential
    - Important that diversity & ethics are included as integrated experience
- Q6: Strength - Operations & Governance
    - CU has policy for professional experience across majors
- Q7: Strength - Instructional & non-instructional assessment
    - Metrics in place to show delivering on learning outcomes
    - Keep assessment minimally onerous and time-consuming
    - Co-curricular experiences add to the learning experience and creates a more well- rounded individual
- Q8: Strength - Finance & Resources
    - Student Affairs support services
- Q9: Strength - Other
    - Current Common Experience academic requirements are strong
    - Current Common Experience meets the learning outcomes outlined in the original common experience charge

Suggestions:

- Keep the current 11 required courses (UNIV 190, 5 Knowledge Areas or liberal arts courses, 2 science, 2 math, and possibly the tech requirement).
    - However, *replace the 5 Knowledge Area requirement with 5 Humanities and Social Science courses (2 of one and 3 of the other).*
        - This will make the Common Experience more flexible and less confusing, while satisfying the core objectives and high impact practices of the (ABET-certified) broad, liberal education that is the Clarkson brand.
- Clarification needed: what isn't working? Can Co-Curricular matters (the assessment of learning outcomes in Co-Curricular learning experiences/modules/seminars) be accomplished without having to redesign the Common Experience?
    - Perhaps fold some existing (and any newly-proposed) Co-Curricular learning experiences into FY100 as an additional module, project, or other assessable activity.

WEAKNESSES

Membership:

- Jerry Gravander, Claudia Hauffman, Martin Heintzelman, Lisa Hoover, Catherine Sajna

Narrative/ Broad Take-Away

- The problem is with implementation and not design. We need much more robust governance, assessment, scheduling, resources and training.
- The design of FYS and UNIV 190 need to be re-examined.
- There is a serious lack of development in foundational student skills like communication, information literacy and appreciation of diversity.
- There is a potential problem in students and faculty not buying into a broad education, despite Middle States requirements.
- The 'survey' categories (Q10 -18) need to be reconfigured as indicated by how respondents miscategorized some of their remarks. Respondents were not clear on the difference between GenEd and CE or between KA, HIP, Skills and Learning Experiences. They could have been made under the appropriate categories.

Key Findings

- Q10: Courses
  - There are problems in the FYS and UNIV 190 courses.
  - We are not doing a good job of 'convincing' students (and some faculty) of the value of a variety of Knowledge Areas.
  - Scheduling problems make choosing KA's a check box system.
  - Middle States' statement of accreditation criteria 5a opens the door for institutions to design a general education program that includes both dedicated free-standing general education courses and learning experiences that are embedded in their majors. The current CE design does this. KA courses are predominantly outside our students' majors and "draw [the] students onto new areas of intellectual experience." The KA courses also abandon the traditional way of doing this, which is to distribute these "broadening" courses by discipline in favor of distribution by student learning outcome. The criteria for the KA designators include mindset and skills elements that also are embedded in students' major curricula. We need a conversation about what content, for example, literary expression, social scientific analysis, philosophical inquiry, historical narrative, etc., and which mindsets and skills, e.g., diversity, sustainability, information literacy, oral and written communication, etc., belong where. What goes in dedicated free-standing gen ed courses? What is embedded elsewhere in students' overall Clarkson educational experience? Moreover, this

conversation has to start with the fact that the CE currently has exactly 12 free-standing courses, including FYS, UNIV 190, and the TECH course, and that four of these courses (2 math and 2 science) are part of virtually all Clarkson students' major curricula.

- Q11: Specific Learning Experience
    - The most noted weaknesses had to do with oversight and assessment, standards and rigor, which probably belongs in Q 16.
    - The most common concern was with lack of communication skills.
    - We believe that Q11 is not a coherent category.
        - Communication is a skill more like information literacy, quantitative reasoning and etc. See Middle States Requirements.
        - Professional Experience like internships could/should be classified as HIP, and field of study doesn't seem to fit here. c. ESL also does not fit in this category.
- Q12: Associated Major/Accreditation
    - The only comment noted according to our criteria was that there is not enough of a true "Common Experience" or shared experience. This may be due to problems with academic schedules belonging in Q12 & 17.
- Q13: HIP
    - The only comment noted according to our criteria seems to belong more in Q12 & 17; support is lacking both financially and with schedules.
- Q14: Other Skills
    - Diversity and communication skills were noted here. The fact that these items were here makes it clear that people were confused about where items belonged. Communication should be noted in Q11. However, it may be that here under Other is the best place for Diversity and other mindsets.
- Q15: Operations and Governance
    - Approval processes are weak.
    - Getting information to students and advisors is weak
- Q16: Assessment
    - Problems of assessing student learning particularly in co- and extra-curricular elements
    - Problems of assessing whether and how instructors are teaching communication
    - Problems of assessing whether and how instructors are teaching to their KA
    - Problems of assessing mastery and belonging
    - Need training for instructors in how to assess student learning
    - Using metrics
- Q17: Finance and Resources
    - Lack of financial resources for HIP both for design of innovative practices and for students
    - Lack of structural integration of various support services
    - Lack of financial resources for student tutors

- Lack of resources for diversity, ethics and values

Qualitative Conclusions

- Largest Take-A-Ways of the "Survey"
  - We need to be concerned with buy-in. Students and some faculty don't understand the point.
  - We are not doing a good job with operations. We need better scheduling, better training, more accessible information, better processes and better assessment.
  - There were no explicit concerns about the KA in general, but we need to re-examine FYS and UNIV 190.
  - There are concerns that we develop a way to include attitudes/experiences/mindsets like diversity, which was most often mentioned, but also other aspects that may have the Clarkson stamp like sustainability and entrepreneurship.
  - There are strong concerns about student skills particularly in communication and information literacy.
- Meta-analysis based on group discussion
  - While the 'survey' may be of some value, it is highly problematic because it was not initially designed as a survey. Therefore, the conclusions should not be considered useful, but merely of interest in setting the parameters of the Weaknesses to be considered by the next committee.
  - The initial inquiry into Weaknesses should start with whether or not we meet the Middle States requirements.
  - The categories of the 'survey' are problematic.
    - KA are GenEd courses and shouldn't be confused with CE as a common curriculum. Middle States demands that students take courses out of their comfort zones.
    - Communication, information literacy, etc are Middle States required skills. These are skills which may be developmental and part of WAC and so must be considered carefully. These skills are also essential foundational skills for effective learning and participation in students' fields of study.
    - Diversity, sustainability, entrepreneurship etc are the qualities or mindsets which may create the ideal Clarkson student and differentiate Clarkson from other schools, but currently they may best be listed under 'Other."
    - Professional Experience and HIP are not coherently categorized. Internships, co-ops and research seem to be fundamentally different, especially in regard to assessment, from innovative classroom practices such as active learning.
    - Comments were made on Assessment and Governance in other categories

OPPORTUNITIES

Membership:

- Erin Draper, Alex French, Ben Galluzzo, Jen Stokes, Allan Zebedee

Narrative

- Overarching Opportunities.
    - The current Clarkson Common Experience includes two different types of requirements - first, students are required to take courses in several core categories; and second, students are required to have specific learning experiences.
    - Clarkson University has a multitude of opportunities to create a vibrant and dynamic Common Experience that curates intellectual curiosity, empowers faculty to adopt innovative high impact practices across all disciplines, and recognizes the importance of informal education and co- curricular learning activities, while being the defining factor that sets Clarkson students apart from their peers at other institutions.
- By redefining what it means to be a Clarkson Student through the Common Experience, we have the opportunity to create learning outcomes that are consistent with the mission, vision, and values of the University, while tying in major requirements, co-curricular activities, and accreditation standards.

Key Findings: Opportunities by Theme

- Common Experience Required Courses, and Common Experience Required Specific Learning Experiences (Breadth, STEM)
    - Define/Establish a “Complete Clarkson Student”. Create intellectual curiosity.
    - Create learning outcomes and opportunities that are consistent with the mission, vision and values of the university.
    - Enhance inclusion of underserved and non-traditional students.
    - Create highly skilled communicators across disciplines.
    - Assess the evolution of the “Complete Clarkson Student”.
- Associated Major Accreditation
    - Better map the common experience requirements to accreditation standards.
    - Explore opportunities to fulfill common experience within the major requirements or extracurricular activities.
- High Impact Practices (HIP)
    - Ensure access to HIP across all disciplines.
    - Enhance the global reach of the Clarkson campus.
    - Create HIP consistent with the development of the “complete” Clarkson student in particular allowing faculty flexibility in developing supporting curriculum.
    - Develop student-led education.
- Other Skills or Experiences
    - Provide faculty with the flexibility to embed other skills into their curriculum as the need arises.

    - There's an opportunity to integrate the transition post-Clarkson into the Common Experience requirements.
    - Opportunity to value extra-curricular activities that contribute to the complete Clarkson student.
- Operations and Governance
    - Recognize the dynamic nature of the common experience program by creating a standing committee responsible for design, implementation, and assessment of the program in real time. Committee shall consist of faculty, staff, and students.
    - Improve the transparency/accessibility of the common experience requirements/structure to the Clarkson community.
    - Create flexibility in Common Experiences by blocking common times (curricular and extracurricular).
- Instructional and Non Instructional Assessment
    - Recognize the importance of informal education and non-instructional assessment.
    - Creation of a common experience assessment tool that can be used for all students.
    - See #5 (Standing Committee).
- Finance and Resources
    - Use the common experience as a market differentiator to promote Clarkson brand
    - Increase excitement for the Clarkson brand

THREATS

Membership:

- Jen Ball, Christine Campbell, Andrea Ferro, Margo Jenkins, JoAnn Rogers

Narrative

- did not provide a narrative, but instead summarized below

Key Findings of "Threats" Summarized:

- Our culture does not allow for self-evaluation and improvement:
    - Fear of change (failure), or lack of trust that substantial, intentional change will occur
    - General Education courses are well designed
        - There is a risk that nothing will change, only be reframed
    - Co-curricular needs to be carefully managed
        - Apathy is a problem - Concern that courses will be reworded, but not re-worked
    - Lack of mutual understanding of a common education's purpose (how to integrate, benefits)
        - Taking non STEM courses is not a benefit to Clarkson students
        - A broad education is vital for Clarkson Students

        - The curriculum as is, creates a liberal arts environment not a STEM one
        - A liberal education is important
        - Univ 190 – the Clarkson Seminar is an important core requirement
        - Students should not have to take KA courses and be able to replace them with what they want.
        - We should have a common experience that is also outside the required course.
        - Need to drop courses that do not fulfill common experiences or enhance the common experience
        - Lack of interest by the faculty and staff at integrating
        - Clarkson should have more gen ed requirement instead of specialized learning within the program of study
        - Need to drop low enrollment courses
    - Competition versus collaboration, lack of incorporation of University values including diversity
        - There needs to be a sustainability requirement in the common experience - Lack of languages is not in line with CU values
        - Experiential education is important
        - Entrepreneurial mindset is important for Clarkson students
        - Employers are looking for students with a broad education
    - Lack of a holistic and interdisciplinary approach to education, how to integrate and carry out
        - FYS is used to deliver all university initiatives because we don't have a better mechanism to communicate to all freshmen
        - A holistic approach to develop resiliency and greater mental health is necessary
        - Creating a "Wellness Director" to help develop curriculum will be beneficial for both faculty, staff & students
        - Extracurricular opportunities are effective ways of creating a well-rounded student.
        - Empathetic students are a drain on Clarkson's faculty
        - Students are less resilient
        - Students are not used to working hard
        - Students are not self motivated
        - Demographic shifts are changing and colleges are competing for the same students
    - Critical moment of change around pedagogy and curriculum
        - ABET requirements limit non-major course options
        - The five math – science courses takes away from more innovative courses
        - If the university wants to equip students with entrepreneurial mindset then it needs to be added into the general education requirements
        - Lack of universal accountability and assessment
        - There needs to be strong assessment for any change in the curriculum
        - Academic expectations vary greatly between UNIV 190 classes
        - Create exit competency tests
        - Requirements of professional programs and 120 credits in general

    - Faulty expertise should be used to develop and assess learning outcomes for HIP/extra curricular
    - Process for obtaining research experience needs to be developed formally
- Mandated High Impact Practices (Global Experience, Professional Experience): students require support (financial, advising, etc.) and employees lack capacity/resources to implement
    - Not integrating HIP will have a negative impact on student retention / satisfaction
    - There are not enough global opportunities to meet CU academic requirements
    - Global opportunities are expensive for students
    - Students who don't have culture competency can come back from study abroad experiences hostile to the host country
    - Research should be considered an HIP and integrated into curriculum in the same way as Global Exp and Prof Exp
- Lack of access and opportunity for all students: increasing need for support services, combined with a lack of funding/unfunded mandates
    - Knowledge areas are confusing to advisers (need for advising service improvements)
    - A strong advising model to help students navigate
    - Need more resources to create student centered, active learning courses
    - More resources necessary to accommodate any additions in Professional and International requirements
    - Additional faculty for any additions/changes in CE requirements - Transfer/commuter/international students are not receiving the same education
    - Lack of finances is hurting the university
- Competition - fear of not keeping up
    - Failure to implement a more rigorous literacy program will put our students behind
    - Others require multiple long-term co-op industry experiences
    - Not updating the gen. ed. first year program will allow other schools to tap into Clarkson Students

CONCLUSIONS

While the SWOT analysis participation did not work out perfectly, the process did result in an informative and productive evaluation of the current Common Experience. Considering this and that the Task Force lacked traditional direct and indirect assessment materials (i.e. Communication rubrics collected but not analyzed since 2014) to evaluate the Common Experience as a whole, through our activities, we were able to learn about the Common Experience and high impact and other practices on and off campus and use the SWOT analysis to derive some take away points.

- The Task Force finds the Common Experience to be an aspirational effort and that there are good components of the existing program, especially the communication and professional experience expectations.
- The current Common Experience structure is robust and has been effective.
- However, the Task Force recognizes that the program needs to be revised by updating the aspirational message and simplifying the categories of the Knowledge Areas, ensuring Global Issues & Cultures and Societies component, and incorporating instructional and non-instructional Skills, Perspectives, and High Impact Practices and other practices into the program as part of the formal requirements.

- The Task Force found that the Common Experience program would benefit by a better and more transparent shared governance process for managing, assessing, revising, and promoting the program than has been in place or practiced. This is especially true of identifying, evaluating, approving, and assessing Knowledge, Skills, and Perspective components of the program.

- The Task Force recognizes the need for additional resources or investments for the program to be more successful.

- The Task Force finds that by reevaluating what it means to be a "Clarkson Student through the Common Experience", we have the opportunity to create learning outcomes that are consistent with the mission, vision, and values of the University, while tying in major requirements, co-curricular activities, and accreditation standards.

CONSIDERATIONS

In the spirit of the Middle States Association of Colleges and Schools "Continuous Improvement" expectation, the Task Force puts forward some points for further considerations to be discussed, developed, and moved upon in Academic Year 2020-2021 by the Common Experience Committee of the Faculty Senate. Here are some examples of some starting items and structure that could be considered:

- Define what we want a Clarkson University student to "look like" for the next 10 years to match the goals and objectives of a revised Common Experience
- Review New York State Education Department and Middle States Commission on Higher Education (if we will still use them considering new federal guidelines) and other accreditation bodies policies and guidance to ensure we align those to aspirational and emerging general education practices such as those published by the American Association of Colleges & Universities and move towards continuous improvement.
    - Revise the Common Experience while meeting majors, accreditation, and governing body requirements by:
    - Simplifying the Knowledge Areas to Arts, Humanities, Social Sciences, Natural Sciences, Mathematics, and Global Issues and Cultures and Societies (Global Issues becomes a common experience of exploring Knowledge Areas)

        - Knowledge areas courses should have a certain percentage of content in the KA and should hit several general education capabilities as defined by organizations such as AAC&U
            - e.g. Critical reading, writing, analysis, critical and creative thinking, communication of all types, problem solving, teamwork, quantitative reasoning, sustainability/global learning, information literacy, etc
    - Keep, but evaluate, UNIV 190 as a Critical Thinking (Reading, Writing, and Analysis Course) requirement (a common experience)
    - Rework the Mathematics requirement to split out a Quantitative Reasoning requirement by leveraging the existing Mathematics requirement (a common experience)
    - Rework the Freshmen Seminar (FY 100) into a four-year 1 credit seminar series that builds students skills and perspectives (aka attitudes) areas (SA and PA) through instructional and non-instructional experiences and includes high impact and other practices (Majors may be responsible for years 2-4, but modules plugged in from across campus);
        - For example but not limited to: Responsible conduct and ethics, wellness, advising, leadership, teamwork, diversity, equity, access, and inclusion (DEAI; Intracultural Knowledge and Competency), information literacy, innovation and creativity, sustainability, service learning, civic engagement, living learning communities, lifelong learning and professional development
    - Majors become responsible for, but included in Common Experience a) Communication across the curriculum and b) Capstone experience (e.g. independent study, internship, study abroad, capstone course, etc; the professional experience revised);
    - Use of ePortfolios for integrative learning to illustrate and archive knowledge, skills, and perspectives in major and Common Experience and major artifacts;
    - Establishment a sub committee to oversee by developing, reviewing, approving, assessing, and evaluating courses and outcomes of a) Knowledge Areas (KA content) and b) four year seminars (Skills (SA) and Perspectives (PA) areas content).

REFERENCES

Dyson, R.G. 2004. Strategic development and SWOT analysis at the University of Warwick. European Journal of Operational Research 152 (2004): 631-640.

Clarkson University. 2019. Undergraduate Catalog 2019-2020. Clarkson University, Potsdam, NY. 301 pages.

APPENDICES

- Common Experience Task Force AY 2019-20 Shared Google Drive:
  - https://drive.google.com/open?id=1KwthBlNrIGmf1ztiZ7Bwe4zOrFAhWOWe
- Agenda and Meeting Notes
  - https://drive.google.com/open?id=1mFbx5yTXfP-WrGvir5KEFivgDeFtc9Gx
- SWOT Survey Monkey Responses
  - https://drive.google.com/open?id=1dqLZWuaaFiEihZ7wGgxRYdCWSdT10x33
- SWOT Agree-Importance Survey Monkey Responses
  - https://drive.google.com/open?id=14fIRRXCf7Idz6i0yMQacoUwUk52rVfnX
- SWOT Break-out Group Reporting Documents
  - https://drive.google.com/open?id=1pjl72yy2Qf51Eu7mM6O-CBXNvccBv5ys
- High Impact Practices
  - https://drive.google.com/open?id=1GVR7DayXfdQF3py5nqj3cX53nKfb7wPO
- Final Report Drafts
  - https://drive.google.com/open?id=1cgUM9UMWpizboAtDRVCcqhe5pOzy96fI

FINAL REPORT VOTE:

Approval of the final report and its findings as a fair and transparent representation of the 2019-2019 Common Experience Task Force activities and findings was voted on by a measure of 10 “Yea”, 2 “Nay”, and 1 “Abstain” votes from the 19 (17 if students removed due to lack of participation) remaining voting members.

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Appendix 1. High Impact or Other Practices Summary

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High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: Business Majors and the Common Experience

Your First and Last Name(s): Martin Heinzelman and Sandy Zuhlsdorf
Your Affiliation(s): School of Business

Summary (500 words max please; 12 pt font):

In general, the CE does not constrain students who enter as freshman business students, as CE courses are spread amongst the "business core" of required classes. However, transfer students are presented with various problems as their electives tend to get used up by classes they took as part of their original major, or classes that don't transfer smoothly from another institution, and they miss some of the core classes that are designated. The CUSB requirement for UNIV399 (International Study) or UNIV267 (Introduction to Canada) are a big help because they are UNIV courses, with the associated knowledge areas. Students, however, who choose instead for a semester abroad sometimes do struggle to find a UNIV course.

These challenges are sometimes created because of the course approval bottleneck. The fact that few courses are KA or C1/2 designated makes it so that when students miss a course that would help them meet requirements, they are forced to take a course that they are otherwise uninterested in because of its designations. This is problematic as it creates unhappy students. One example: for a few years, a course I teach, EC360, was designated C2. As a result, I had students in the class JUST for the C2 who weren't interested in the material. The rest of the students were in the class for the material and were angry about the writing requirements. This was a lose-lose for me. I had the class un-designated, which took a surprising amount of time to fully implement, again because of the CE approval process. If more (all) courses had KA designations, and more classes had communications designations, this problem would be alleviated.

In general, business students (not including Math Economics students who are not required to take the business core) have 14 required business core classes, which provide 3 c points and cover 2 or 3 KAs, plus the TECH requirement. In addition, most take an international experience course which covers two more KA, and the UNIV requirement. These core business majors have 6-8 required courses in addition to the core. This leaves them up to 12 elective slots to meet the rest of their CE requirements.

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: Diversity and Inclusion

Your First and Last Name(s): Jen Ball
Your Affiliation(s): Chief Inclusion Office, Humanities Social Science Dept., Cabinet, Admin Council, Climate and Engagement Committee

Summary (500 words max please; 12 pt font):

Our current high impact practices on Diversity, Equity, and Inclusion are limited and need to be greatly expanded. We do not have a current systematic way to provide or assess these practices in the common experience. We have a some DEI efforts based in academic opportunity programs targeted at underrepresented students,e.g. HEOP, CSTEP, LSAMP, REU, we have limited opportunities for majority students. We do have several professional societies for underrepresented student identities. We do some training at orientation and a few opportunities for self-selected projects in FYS. There is a current significant DEI programming scheduled aimed at all students, again self selected. We are beginning to offer more significant high impact initiatives, such as Ignite classes with a DEI lens.

Our current Knowledge areas offer a cultural appreciation lens but not attached to a wider frame of DEI. We have begun to work on a set of institutional learning outcomes around DEI to use to form up learning objectives and outcomes in individual courses and co-curricular activities. While we track some data on DEI it is not attached strongly to common education. We need to create meaningful assessment tools for DEI in educational outcomes.

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: Engineering majors requirements, constraints, and considerations

Your First and Last Name(s): Andrea Ferro and Goodarz Ahmadi

Your Affiliation(s): CEE (Ferro) and MAE (Ahmadi). Ahmadi was Dean of CSoE for 10 years.

Summary (500 words max please; 12 pt font):

Engineering programs are tightly constrained by requirements for Accreditation Board for Engineering and Technology (ABET) accreditation. However, ABET is not prescriptive on how an institution meets the requirements. During the last round of ABET accreditation, the ABET accrediting team was enthusiastic about the current Common Experience. The General ABET Criteria are provided below. Items that are relevant to the Common Experience Task Force are in bold with priority items underlined. The reminder of the criteria are covered within engineering.

When the Common Experience was first introduced, the engineering students were unable to meet the requirements because they could not find or get into the required courses due to their tight schedules. Changes were made to the Common Experience program that made meeting the requirements easier (e.g., holding seats for 1st year students in some KA classes; reducing the number of required Knowledge Areas from 6 to 4), which greatly reduced the number of graduation exception requests. The inflexibility of the engineering curricula remains a challenge.

For reference, curriculum sheets for Environmental Engineering and Civil Engineering are provided below (CEE Undergraduate Handbook, 2019 – 2020, Appendices D and F). From these sheets, one can see that currently, two of the five KA courses are already included in the curricula, ES110 and ECON350. There are three KA courses remaining (really, 2 KA and 1 UC) that can be selected by the students. The “professional electives” are mostly STEM, business, and communications courses that prepare students for their engineering careers.

References:

ABET Criteria for Accrediting Engineering Programs, 2019 – 2020 (https://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2019-2020/)

CEE Undergraduate Handbook, 2019 – 2020 (https://www.clarkson.edu/sites/default/files/2019-08/20190815-Clarkson-CEE-Undergrad-Handbook.pdf)

ABET Criteria:

I. General Criteria for Baccalaureate Level Programs

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

All programs seeking accreditation from the Engineering Accreditation Commission of ABET must demonstrate that they satisfy all of the following General Criteria for Baccalaureate Level Programs.

Criterion 1. Students

Student performance must be evaluated. Student progress must be monitored to foster success in attaining student outcomes, thereby enabling graduates to attain program educational objectives. Students must be advised regarding curriculum and career matters.

The program must have and enforce policies for accepting both new and transfer students, awarding appropriate academic credit for courses taken at other institutions, and awarding appropriate academic credit for work in lieu of courses taken at the institution. The program must have and enforce procedures to ensure and document that students who graduate meet all graduation requirements.

Criterion 2. Program Educational Objectives

The program must have published program educational objectives that are consistent with the mission of the institution, the needs of the program's various constituencies, and these criteria. **There must be a documented, systematically utilized, and effective process, involving program constituencies, for the periodic review of these program educational objectives that ensures they remain consistent with the institutional mission, the program's constituents' needs, and these criteria.**

Criterion 3. Student Outcomes

The program must have documented student outcomes that support the program's educational objectives. Attainment of these outcomes prepares graduates to enter the professional practice of engineering. Student outcomes are outcomes (1) through (7), plus any additional outcomes that may be articulated by the program.

an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

an ability to apply engineering design to produce solutions that meet specified needs with **consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors**

an ability to communicate effectively with a range of audiences

an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider **the impact of engineering solutions in global, economic, environmental, and societal contexts**

an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Criterion 4. Continuous Improvement

The program must regularly use appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained. The results of these evaluations must be systematically utilized as input for the continuous improvement of the program. Other available information may also be used to assist in the continuous improvement of the program.

Criterion 5. Curriculum

The curriculum requirements specify subject areas appropriate to engineering but do not prescribe specific courses. The program curriculum must provide adequate content for each area, consistent with the student outcomes and program educational objectives, to ensure that students are prepared to enter the practice of engineering. The curriculum must include:

a minimum of 30 semester credit hours (or equivalent) of a combination of college-level mathematics and basic sciences with experimental experience appropriate to the program.

a minimum of 45 semester credit hours (or equivalent) of engineering topics appropriate to the program, consisting of engineering and computer sciences and engineering design, and utilizing modern engineering tools.

a broad education component that complements the technical content of the curriculum and is consistent with the program educational objectives.

a culminating major engineering design experience that 1) incorporates appropriate engineering standards and multiple constraints, and 2) is based on the knowledge and skills acquired in earlier course work.

Criterion 6. Faculty

The program must demonstrate that the faculty members are of sufficient number and they have the competencies to cover all of the curricular areas of the program. There must be sufficient faculty to accommodate adequate levels of student-faculty interaction, student advising and counseling, university service activities, professional development, and interactions with industrial and professional practitioners, as well as employers of students.

The program faculty must have appropriate qualifications and must have and demonstrate sufficient authority to ensure the proper guidance of the program and to develop and implement processes for the evaluation, assessment, and continuing improvement of the program. The overall competence of the faculty may be judged by such factors as education, diversity of backgrounds, engineering experience, teaching effectiveness and experience, ability to communicate, enthusiasm for developing more effective programs, level of scholarship, participation in professional societies, and licensure as Professional Engineers.

Criterion 7. Facilities

Classrooms, offices, laboratories, and associated equipment must be adequate to support attainment of the student outcomes and to provide an atmosphere conducive to learning. Modern tools, equipment, computing resources, and laboratories appropriate to the program must be available, accessible, and systematically maintained and upgraded to enable students to attain the student outcomes and to support program needs. Students must be provided appropriate guidance regarding the use of the tools, equipment, computing resources, and laboratories available to the program. The library services and the computing and information infrastructure must be adequate to support the scholarly and professional activities of the students and faculty.

Criterion 8. Institutional Support

Institutional support and leadership must be adequate to ensure the quality and continuity of the program.

Resources including institutional services, financial support, and staff (both administrative and technical) provided to the program must be adequate to meet program needs. The resources available to the program must be sufficient to attract, retain, and provide for the continued professional development of a qualified faculty. The resources available to the program must be sufficient to acquire, maintain, and operate infrastructures, facilities, and equipment appropriate for the program, and to provide an environment in which student outcomes can be attained.

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Appendix D: Civil Engineering Curriculum Worksheet (Class of 2021 and thereafter)

CIVIL ENGINEERING CURRICULUM FOR CLASS OF 2021 [1]

Faculty Advisor		Student Name		Student Number		Class Year	

FRESHMAN – FALL	Design Credit[2]	Semester	Grade	FRESHMAN – SPRING	Design Credit[2]	Semester	Grade
CM131 General Chem. I (4 cr)				CM132 General Chem. II (4 cr)			
PH131 Fund. Physics I (4 cr)[3]				PH132 Fund. Physics II (4 cr)[3]			
UNIV190 Clarkson Seminar				ES110 Engineering & Society (TECH)	STS (C1)		
MA131 Calculus I				MA132 Calculus II			
FY/PE100 First Year Seminar (0 cr)				ES100 Intro Computer (2 cr)			
SOPHOMORE – FALL				**SOPHOMORE - SPRING**			
CE212 Intro. Eng. Des.	1.5			ES222 Strength of Materials			
ES220 Statics				CE305 Construction Planning and Management (S)	1.0		
Elective - KA or UC[3]				ES330 Fluid Mechanics			
MA231 Calculus III				MA232 Differential Equations			
CE301 Geospatial Analysis & Appl.				ES Elective[7] (ES223 RBD recommended) (S)			
JUNIOR AND SENIOR YEARS							
Elective - KA or UC[3]				CE310 Geotechnical Engineering I (S) (3 cr)	1 (C1)		
ES elective[7] (ES260 Materials Science recommended)				CE340 Intro. Environmental Eng. (S)	1		
ES Elective[7] (ES250 Elect. Sci. or ES340 Thermo. recommended)				University Course (UC) Elective			
CE320 Structural Analysis (F) (3cr)	1 (C1)			CE441 Reinforced Concrete Design (F) **OR** CE442 Steel Design (S)	3		
CE330 Water Resources I (F&S) (3 cr)	1 (C1)			Senior. Design (CE490 Str., Trans., Geo./Constr. OR CE491 Water Resources/Environmental OR CE492 Building/Construction) (S)	3 (C1)		
STAT383 Probability & Statistics				☑ **Checklist to monitor progress towards Professional Concentration**			
EC350 Econ. Principles / Engineering Economics[4]	EC			Construction Engineering Management	Structural Engineering	Water Resources Engineering	
Professional Elective				❑ CE411 (F) ❑ CE415 or CE515 (F) ❑ CE441 (F) ❑ CE442 (S) ❑ **One of the following:** [6] OS286, FN361, EM/OM380 (EC), EM/OM451, EHS330, LW270, LW466, COMM217/417 (C2) **AND** completion of at least one of these Tracks *Construction/Infrastructure Track:* ❑ ❑ **Two of the following:** [5] CE315, CE406, CE 453/553, CE407, CE408, CE410/510, and/or CE461 *Architectural Engineering & Building Construction Track:* ❑ ❑ **Two of the following:** [5] CE409, CE448, CE407, CE408, and/or CE410/510	❑ CE420 or CE520 ❑ CE415 or CE515 ❑ CE441 ❑ CE442 ❑ CE490 or CE492 ❑ ❑ **Two of the following:** [5] CE408, CE411, CE521, CE544, CE438 or CE538, CE401 or CE501, CE445, CE448, CE455 or CE555, CE453 or CE553, CE449, CE512	❑ CE430 ❑ CE470 ❑ CE479 ❑ CE490/1/2 Senior Design with Water Resources focus ❑ ❑ **Two of the following:** [5] CE315, CE340, CE380, CE434, CE435, CE478, CE481, CE482 ❑ **One of the following:** [5] BY/EV330, BY431, ES436, COMM428, EV305, POL/SOC470
Professional Elective							
Professional Elective							
Professional Elective							
Professional Elective							
Professional Elective							
Professional Elective							
Professional Elective							
ES499 (Prof. Experience) (0cr)							

Effective for 2018-2019

[1] **Courses are 3 credits unless otherwise noted.**
[2] **A Total of 16.5 Design Credits are required**
[3] **Depending on Mathematics placement**
[4] **Recommended for Fall semester immediately before graduation but before senior design**
[5] **Or other course designated by CEE Department Chair**
[6] **EM/OM380 is the preferred course in this group; students are encouraged to take more than one in this group using their KA/UC electives**
[7] **Eligible ES elective courses are ES223 Rigid Body Dynamics, ES260 Materials Science, ES340 Thermodynamics, and ES250 Electrical Science**

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Appendix E: Environmental Engineering Curriculum Worksheet (through Class of 2019)

ENVIRONMENTAL ENGINEERING CURRICULUM[1]

Faculty Advisor **Student Name** **Student Number** **Class Year**

FRESHMAN - FALL	Design Credit [2]	Semester	Grade	FRESHMAN – SPRING	Design Credit [2]	Semester	Grade
CM 131 General Chem. I (4 cr)				CM 132 General Chem. II (4 cr)			
ES110 or PH 131 Fund. Physics I				PH 132 Fund. Physics II (4 cr)			
UNIV 190 Clarkson Seminar				ES110 Engineering & Society			
MA 131 Calculus I				MA 132 Calculus II			
FY/PE 100 First Year Seminar (0 cr)				ES 100 Intro Computer (2 cr)			
SOPHOMORE - FALL				**SOPHOMORE - SPRING**			
CE 212 Intro. Eng. Des. (F)	1.5			CE 340 Intro to Environmental Eng (S)	1		
ES 220 Statics				BY 320 Microbiology			
CH210 Chemical Engineering Principles I				ES 330 Fluid Mechanics			
MA 231 Calculus III				MA 232 Differential Equations			
Elective – KA or UC				Elective – KA or UC			
JUNIOR AND SENIOR YEARS							
CH220 Chemical Engineering Principles II				Elective – KA or UC			
CM 241 Organic Chemistry (F)				EC 350 Econ. Principles & Engineering Economics			
CE 330 Water Resources I (F)	1			ES 340 Thermodynamics I			
CE 479 Water &Wastewater Treatment ***OR*** CE 480 Chemical Fate & Trans. in Envir't	3 1			STAT 383 Applied Statistics			
CE 313 Biogeochemical Earth Systems (F) ***OR*** CE435/535 Groundwater Hydrology and Geochemistry[3] (F)	0 1			CE 491 Sr. Design (Envir./ Wat. Res) (S)	3		
CE 301 Geospatial Analysis & Appl. (S)				**Checklist to monitor progress and options**			
Core Professional Course				Core Professional Courses	Thesis Option	Double Major Option	
Core Professional Course				Core Professional Courses **must** include three of these courses: ❑ CE 479 (3) or CE 480 (1) not previously counted ❑ CE 482/582 Systems (2) ❑ CE 486 Ind Ecology (1) ❑ ES 432 Risk Anals (1.5) ❑ CE 481 Haz Waste (2.5) () = design credits	Students are **encouraged** to work with a professor in their senior year to utilize CE 495 and CE 496 as two of the professional electives in order to prepare an undergraduate thesis. ❑ CE 495 ❑ CE 496	If a student desires a double major in both Civil and Environmental Engineering, the following courses should be selected as professional electives: ❑ ES 222 Strength ❑ ES 250 Electrical Sci. or ES223 Rigid Body D. ❑ ES 260 Material Sci. ❑ CE 310 Geotech I (1) ❑ CE 320 Str. Anal. (1) ❑ CE 441 Reinforced Concrete Design (3) or CE 442 Steel Design (3)
Core Professional Course							
Professional Elective							
Professional Elective							
Professional Elective							
Professional Elective							
Professional Elective							
Professional Elective							
ES499 (Prof. Experience) (0 cr.)							

High-Impact or Other Practice Summary
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Common Experience Task Force

Topic Name: ePortfolio

Your First and Last Name(s): Alan Christian
Your Affiliation(s): Chair, Common Experience Task Force

Summary (500 words max please; 12 pt font): Portfolios are traditionally associated with artists that includes sample of the work or the cased used to display their work. More recently, career portfolios have emerged in which the portfolio idea was used to plan, organize and document education, work samples and skills. People use career portfolios to apply for jobs, apply to college or training programs. They are more in-depth than a resume, which is used to summarize the above in one or two pages. Career portfolios serve as a proof of one's skills, abilities, and potential in the future. Currently, there is a growing effort to developed ePortfolio or online portfolios in which users can post online content including but not limited to tradition C.V. or resume, personal statements, video resume, infographic resume, as well as showcasing artifacts showcasing their skills, accomplishments, and experiences. Portfolios can be developed for a variety of purposes such as personal or working portfolio, an assignment or course portfolio, an academic career portfolio, and an assessment portfolio. Although the types are distinct in theory, it is important for educators to be clear about their goals, the reasons they are engaging in a portfolio project, and the intended audience for the portfolios (Wikipedia access 12/22/2019 https://en.wikipedia.org/wiki/Career_portfolio)

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: ESL/EAP Requirement

Your First and Last Name(s): Catherine Sajna and Tess Casler
Your Affiliation(s): Writing Center, ESL and Co-Writing Programs

Summary (500 words max please; 12 pt font):

All matriculating international students take a grammar and writing placement test the week before school starts. Exchange students are tested only if they are required to take a writing intensive course. Grad students with TA duties are given an additional speaking test; some of them will have taken the TA Bootcamp in August. The lowest level Writing Class and the speaking class 'must' be taken the students' first semester, as placement in those classes indicates that their English proficiency is not high enough to be successful in their regular classes and duties. The UG and GR are combined. Placement in these classes does not prevent them from taking any classes or from any duties. Rather the classes should be thought of as access to resources to support their success. Graduate students are graded Pass/No Credit; Undergraduates receive a grade. The advanced writing class for UG is meant to be equivalent to UNIV 190 (minus knowledge points) so should be taken as early as possible in the student's schedule. The advanced writing class for GR can be taken any year that student and advisee think appropriate. The course focuses on a primary research paper style.

SWOT

S: students get connected with the Writing Center, Snap&Read, relatively flexible scheduling including directed studies as needed, in-house curriculum

W: record keeping, competence is NOT assured by taking a class, graduate students feel frantically overworked; budget; placement test

O: Develop more supports for grad students, develop seminar in thesis writing, develop summer camp for international high schoolers as Potsdam is safe from gun violence and has nature and sustainability, research grant monies can pay for graduate student writing/editing support; English for Academic Purposes (EAP) courses could be used for developmental writers who are native speakers of English or who are non-native speakers of English but have graduated American high schools;

T: lack of time and money

Numbers in Fall 2019

22 undergraduates were tested: 2 were required to take Writing I, 7 were required to take Writing II and 6 were given a choice between Writing II/UNIV 190

46 graduates were tested: 24 were required to take Writing II, 8 were required to take Writing II, 3 were required to take Spoken Communication, of those not required to take writing 8 were borderline.

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: 4 Year Seminar

Your First and Last Name(s): Jeff Taylor
Your Affiliation(s): Division of Student Affairs

Summary (500 words max please: 12 pt font):

As institutions vie for undergraduate students, aim to increase graduate enrollments, and seek to prepare students for future pursuits, it is imperative that universities continuously improve their services and assess their student learning outcomes. In the national landscape, there is a call to action for colleges and universities to graduate professionals who are civil, who can thrive in challenging environments, and who can adapt to the changing needs of work.

What makes the Clarkson student experience different to prospective families? A four-year student seminar series that provides a clear strategy of student development in an intentional, scalable, and progressive model for a student experience that is backed by national and internal survey data can serve as a defining student practice that corresponds to Clarkson's ROI strategy and fully complements high impact practices.

Building upon the T-Shaped Professional concept, this series will accompany a focused academic experience with a construct for students to practice, apply, develop, and internalize skills around professional competencies, coping skills, inclusive practices, college navigation, and civil dialogue/awareness.

This series also provides an opportunity and a framework to partner with each School at Clarkson and to support academic advisors within the various models. The seminar can assist with transactional and transitional academic advisement during the first and second years of study by providing a platform for standardized/consistent communication delivery, delving further into early career exploration, introducing students to alumni mentorship, equipping students with a professional readiness mindset, and ensuring that everyone understands advisement processes (i.e. adding a course, changing majors, etc.).

Clarkson University has long-offered a First-Year Seminar (FYS) designed to ease the transition to college, positively impact retention, and introduce services that aid in student success. Why not add other seminars that continue helping students to learn and to develop during their academic journey in a similarly constructed and successful model?

In keeping with the format of FYS, a four-year seminar series (1) further defines a "Clarkson Student Experience," that aligns with goals of the Common Experience (2) scales student services and measures learning outcomes in a manner benefitting all students, (3) addresses stated concerns of students within academic advising and wellness, and (4) allows for more targeted support of "at risk" students. The latter is a strategic factor in a resource driven environment. By having students receive content in a scalable manner, it provides more resource time dedicated to students who may be most in need of certain services.

Each course syllabus is available that outlines the seminar, learning outcomes, and grading rubric. Below are the seminar titles.

- Freshmen (Fall only): First-Year Seminar
- Sophomore (Fall only): Professional Development, Wellness, & Academic Advisement*
- Junior (Fall or Spring): Dialogue, Inclusion & Civility
- Senior (Fall or Spring): Thriving after Clarkson: Post-college & in your community

**Transitional advising refers to having a structured platform by which students are introduced to the various academic advising models used in their school; such a model allows for complimentary support for early career advising, understanding of transactional processes, making the most of their time with faculty advisors, and introduction to high impact experiences.*

References (if needed):

Ad Hoc Advising Committee Findings

- Consistent and standardize communications across all schools
- Intentionally integrate student advisee training and programming into Clarkson culture

CIRP 2017 Data

- 94.6 percent of students select Clarkson to "get a better job," while only 29.3 percent chose Clarkson to "make me a more cultured person." *–job is an outcome not a competency*
- 74.1 percent chose Clarkson because of "financial assistance" vs. 59.1 percent at peer institutions *– seminar series ensures that families ascertain value beyond financial aid*

College Senior Survey

- Clarkson University students rate lower than the comparison group in both "Habits of Mind" and "Pluralistic Orientation" - *measurements of traits for academic success and living and working in a diverse society, respectively*
- Clarkson students rate higher in academic enhancement opportunities (i.e. internship, research, culminating project) and perception of leadership but lower for all civic awareness measurements - *students have "the experience" but not the understanding of the national and global landscape*
- 75 percent of categories within "satisfaction with services & community" were rated higher than the comparison group, yet only 47 percent of respondents would choose their institution "if they could do it over" - *therefore students may be failing to understand the overall value Clarkson has on their college experience*
- Emotional well-being: Over 90 percent of respondents "felt overwhelmed by all that I had to do" - *Are we preparing them with skills to cope after graduation?*

Other Data

- Professional Experience: Surveys completed by employers consistently show that while Clarkson students on average are rated positively for teamwork (90%) and willingness to learn (92%), they receive their lowest scores for oral communication (72%), creativity (79%), judgement (80%), and interpersonal skills (80%)
- Professional development seminar offered on a volunteer basis enrolled ~90 students

Tables (if needed):

- NSSE tables from 2019 can be added that further demonstrate need. For example, Clarkson students finished below the entire comparison cohort on classes that involve global affairs,

world cultures, and other international topics. The 3rd year seminar would directly address this need while further enhancing civil discourse amongst our students.

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Common Experience Task Force

Topic Name: General Education Capabilities and KSR Areas

Your First and Last Name(s): Alan Christian
Your Affiliation(s): Chair, Common Experience Task Force

Summary (500 words max please; 12 pt font):

Beginning in the first-year and continuing at successively higher levels across their college studies, students should prepare for twenty-first-century challenges by gaining (Association of American Colleges & Universities 2019). Typically these are seen in three domains of Knowledge Areas, Skills Areas, and Responsibilities/Perspectives (KSR Areas)

- Knowledge of Human Cultures and the Physical and Natural World (**Knowledge Are**a)
    - Through study in the sciences and mathematics, social sciences, humanities, and the arts
- *Focused* by engagement with big questions, both contemporary and enduring (**Skills Area**)
    - Intellectual and Practical Skills, Including
        - Inquiry and analysis
        - Critical and creative thinking
        - Written and oral communication
        - Quantitative literacy
        - Information literacy
        - Teamwork and problem solving
- *Practiced extensively*, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance (**Responsibilities Area**)
    - Personal and Social Responsibility, Including
        - Civic knowledge and engagement—local and global
        - Intercultural knowledge and competence
        - Ethical reasoning and action
        - Foundations and skills for lifelong learning

These three domains are then anchored and demonstrated across a student's career:

- *Anchored* through active involvement with diverse communities and real-world challenges
    - Integrative and Applied Learning, Including
        - Synthesis and advanced accomplishment across general and specialized studies
- *Demonstrated* through the application of knowledge, skills, and responsibilities to new settings and complex problems. General education requirements should be looked at through lens of Knowledge Areas, Skills Areas, and Responsibilities (e.g. attitudes, values, and perspectives) areas

One integrated approach to "general education" courses or integrated "liberal education "framework" are to include one, if not two or more, "capabilities" into each course or across the curriculum. For instance, often two or more capabilities are explicitly included and covered into knowledge areas, skills, or attitudes/values courses and often integrative or capstone artifacts have one or more stated capabilities. Furthermore, the following are capabilities are the command and often at least two must be incorporated as an integral part of the course: Verbal Reasoning (Critical

Thinking), Quantitative Reasoning, Critical Reading and Analysis, Effective Communication (Writing and/or Speaking), Use of Technology to Further Learning, Collaborative Work.

Below is a list and definition of 16 general education capabilities that may be considered in a comprehensive and integrated general education and liberal education framework (Association of American Colleges & Universities 2019).

1. Civic Engagement
    - Civic engagement is "working to make a difference in the civic life of our communities and developing the combination of knowledge, skills, values and motivation to make that difference. It means promoting the quality of life in a community, through both political and non-political processes."
2. Creative Thinking
    - Creative thinking is both the capacity to combine or synthesize existing ideas, images, or expertise in original ways and the experience of thinking, reacting, and working in an imaginative way characterized by a high degree of innovation, divergent thinking, and risk taking.
3. Critical Thinking
    - Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.
4. Ethical Reasoning
    - Ethical Reasoning is reasoning about right and wrong human conduct.
5. Global Learning
    - Effective and transformative global learning offers students meaningful opportunities to analyze and explore complex global challenges, collaborate respectfully with diverse others, apply learning to take responsible action in contemporary global contexts, and evaluate the goals, methods, and consequences of that action.
6. Information Literacy
    - The ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively and responsibly use and share that information for the problem at hand.
7. Inquiry and Analysis
    - Inquiry is a systematic process of exploring issues, objects or works through the collection and analysis of evidence that results in informed conclusions or judgments. Analysis is the process of breaking complex topics or issues into parts to gain a better understanding of them.
8. Integrative Analysis
    - Integrative learning is an understanding and a disposition that a student builds across the curriculum and co-curriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new, complex situations within and beyond the campus.
9. Intercultural Knowledge and Competence
    - Intercultural Knowledge and Competence is "a set of cognitive, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts.”
10. Foundation Skills for Lifelong Learning

- Lifelong learning is “all purposeful learning activity, undertaken on an ongoing basis with the aim of improving knowledge, skills and competence”. Includes curiosity, initiative, independence, transfer, and reflection

11. Oral Communication
    - Oral communication is a prepared, purposeful presentation designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs, or behaviors.
12. Problem Solving
    - Problem solving is the process of designing, evaluating, and implementing a strategy to answer an open-ended question or achieve a desired goal.
13. Quantitative Literacy
    - Quantitative Literacy (QL) – also known as Numeracy or Quantitative Reasoning (QR) – is a "habit of mind," competency, and comfort in working with numerical data. Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate).
14. Reading
    - Reading is "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language"
15. Teamwork
    - Teamwork is behaviors under the control of individual team members (effort they put into team tasks, their manner of interacting with others on team, and the quantity and quality of contributions they make to team discussions.)
16. Written Communication
    - Written communication is the development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies, and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum.

References (if needed):

Association of American Colleges & Universities. 2019. "Association of American Colleges & Universities. A Voice and Force for Liberal Education." Association of American Colleges & Universities, accessed 10/01/2019. https://www.aacu.org/.

High-Impact or Other Practice Summary
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Topic Name: High Impact Practices

Your First and Last Name(s): Alan Christian
Your Affiliation(s): Biology Department

Summary (500 words max please; 12 pt font):

- First-Year Seminars and Experiences
    - Many schools now build into the curriculum first-year seminars or other programs that bring small groups of students together with faculty or staff on a regular basis.
    - The highest-quality first-year experiences place a strong emphasis on critical inquiry, frequent writing, information literacy, collaborative learning, and other skills that develop students' intellectual and practical competencies.
    - First-year seminars can also involve students with cutting-edge questions in scholarship and with faculty members' own research.
- Writing-intensive courses
    - These courses emphasize writing at all levels of instruction and across the curriculum, including final-year projects.
    - Students are encouraged to produce and revise various forms of writing for different audiences in different disciplines.
    - The effectiveness of this repeated practice "across the curriculum" has led to parallel efforts in such areas as quantitative reasoning, oral communication, information literacy, and, on some campuses, ethical inquiry.
- Diversity / Global Learning
    - Many colleges and universities now emphasize courses and programs that help students explore cultures, life experiences, and worldviews different from their own.
    - These studies—which may address U.S. diversity, world cultures, or both—often explore "difficult differences" such as racial, ethnic, and gender inequality, or continuing struggles around the globe for human rights, freedom, and power.
    - Frequently, intercultural studies are augmented by experiential learning in the community and/or by study abroad.
- Learning Communities
    - The key goals for learning communities are to encourage integration of learning across courses and to involve students with "big questions" that matter beyond the classroom.
    - Students take two or more linked courses as a group and work closely with one another and with their professors.
    - Many learning communities explore a common topic and/or common readings through the lenses of different disciplines.
    - Some deliberately link "liberal arts" and "professional courses"; others feature service learning.
- Collaborative Assignments and Projects
    - Collaborative learning combines two key goals: learning to work and solve problems in the company of others, and sharpening one's own understanding by listening seriously to the insights of others, especially those with different backgrounds and life experiences.
    - Approaches range from study groups within a course, to team-based assignments and writing, to cooperative projects and research.

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- Common Intellectual Experiences
    - The older idea of a "core" curriculum has evolved into a variety of modern forms, such as a set of required common courses or a vertically organized general education program that includes advanced integrative studies and/or required participation in a learning community.
    - These programs often combine broad themes—e.g., technology and society, global interdependence—with a variety of curricular and co-curricular options for students.
- Service Learning, Community-Based Learning
    - In these programs, field-based "experiential learning" with community partners is an instructional strategy—and often a required part of the course.
    - The idea is to give students direct experience with issues they are studying in the curriculum and with ongoing efforts to analyze and solve problems in the community.
    - A key element in these programs is the opportunity students have to both *apply* what they are learning in real-world settings and *reflect* in a classroom setting on their service experiences.
    - These programs model the idea that giving something back to the community is an important college outcome, and that working with community partners is good preparation for citizenship, work, and life.
- Capstone Course and Projects
    - Whether they're called "senior capstones" or some other name, these culminating experiences require students nearing the end of their college years to create a project of some sort that integrates and applies what they've learned.
    - The project might be a research paper, a performance, a portfolio of "best work," or an exhibit of artwork.
    - Capstones are offered both in departmental programs and, increasingly, in general education as well.
- Undergraduate Research
    - Many colleges and universities are now providing research experiences for students in all disciplines. Undergraduate research, however, has been most prominently used in science disciplines.
    - With strong support from the National Science Foundation and the research community, scientists are reshaping their courses to connect key concepts and questions with students' early and active involvement in systematic investigation and research.
    - The goal is to involve students with actively contested questions, empirical observation, cutting-edge technologies, and the sense of excitement that comes from working to answer important questions.
- ePortfolios
    - ePortfolios are the latest addition to AAC&U's list of high-impact educational practices, and higher education has developed a range of ways to implement them for teaching and learning, programmatic assessment, and career development.
    - ePortfolios enable students to electronically collect their work over time, reflect upon their personal and academic growth, and then share selected items with others, such as professors, advisors, and potential employers.

- Because collection over time is a key element of the ePortfolio process, employing ePortfolios in collaboration with other high-impact practices provides opportunities for students to make connections between various educational experiences.

References (if needed):

AAC&U. 2013. Ensuring Quality & Taking High-Impact Practices to Scale by George D. Kuh and Ken O'Donnell, with Case Studies by Sally Reed. AAC&U, Washington, DC: . For information and more resources and research from LEAP, see www.aacu.org/leap.

High-Impact or Other Practice Summary
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Topic Name: HSS Major and General Education in HSS

Topic Name: **HSS and the Common Experience**

Your First and Last Name(s): **Michael Garcia**

Your Affiliation(s): Humanities and Social Sciences

Summary (500 words max please; 12 pt font):

About Humanities and Social Sciences:

The purpose of a broad liberal education is to educate the whole person, to prepare students for more than just their first job. One Dean put it this way, "teach students the art of being human." That is what we in HSS strive to do in the courses that we provide to all Clarkson students. Diversity, Inclusiveness, and Global-Learning is baked into our courses: our courses introduce students to cultures, races, the past, and points of view other than their own. We prepare our students to be globally-connected and aware citizens, something that is of increasing importance in the modern world. Our courses are reading and writing intensive, endowing students with essential, transferable, and life-changing knowledge and skills that will serve them well in any career, as well as teaching them to become lifelong learners.

Impact of the current Common Experience curriculum on our majors and nonmajors:

We teach primarily to NON majors. We have few of our own majors, and many of those are double majors. 80-90% of the students in any given HSS course are non-majors (with some exceptions, such as some History courses, perhaps, and our HSS 480 Research Seminar).

As for impact on the 50 or so MAJORS that we do have, the current Common Experience works well for them: students have no trouble fitting in Gen Ed (Common Experience) courses, and profit from the broad liberal education that the Common Experience requires—including the 5 STEM courses that constitute half of the Gen Ed core: 4 Science and Math courses plus the Tech requirement.

Note: The initial implementation under Dean Pratt assigned the STS designator to some science courses that give only superficial and brief exposure to STS material and do not meet the criteria for this designator at the intended level. This opened a path for students to avoid HSS courses that addressed the STS criteria with the depth intended by the Common Experience design.

The biggest negative impact of the current Common Experience was that our **enrollments dropped precipitously when new loopholes were created in 2012** (dropping the 6 knowledge area categories to only 4, and thus greatly narrowing the breadth of the Gen Ed requirements) to accommodate the highly structured and fully-packed engineering curriculum/schedule. We look forward to our mission of serving all Clarkson students with our course offerings, and doing our part to ensure that all Clarkson students get a broad, liberal education.

Note on ABET accreditation:

Middle States is equally clear about the purpose of general education. Quoting the Middle States criterion on general education:

> "5. at institutions that offer undergraduate education, a general education program, free standing or integrated into academic disciplines, that:
>
> "(a) offers a sufficient scope to draw students into new areas of intellectual experience, expanding their cultural and global awareness and cultural sensitivity, and preparing them to make well-reasoned judgments outside as well as within their academic field [and] [b] offers a curriculum designed so that students acquire and demonstrate essential skills including at least oral and written communication, scientific and quantitative reasoning, critical analysis and reasoning, technological competency, and information literacy. Consistent with mission, the general education program also includes the study of values, ethics, and diverse perspectives...."

Moreover, the current ability of Clarkson students to graduate without taking any humanities courses clearly would be seen as a "worst practice" by external national higher education associations if they were consulted, cf, the Association of American Colleges & Universities and the Association for General and Liberal Studies.

A Working Proposal:

One proposal we have been discussing internally is the idea of modifying the knowledge areas requirement to **2 humanities + 3 social sciences,** *along* ***with keeping UNIV 190 and*** *the existing 5 STEM courses* (2 math + 2 science + Tech or ES110). That is a **total of 11 Gen Ed** courses (**+ FY 100**), the same number as currently required. (Of course, if there is campus-wide interest in expanding that 11-course foundation to 12 or more courses we would be more than happy to see it.) This is the most flexible of the 3 proposals we have been discussing internally, and would be much easier for engineering students to schedule than the current Knowledge Areas structuring. We have an additional document we can share when needed.

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: Clarkson Ignite

Your First and Last Name(s): Erin Draper
Your Affiliation(s): Clarkson Ignite
Summary (500 words max please; 12 pt font):

Overview

Approximately two and a half years ago, the University committed to equipping every Clarkson graduate with an entrepreneurial mindset and an innovation skill set. Because great leadership is dependent on action, we are preparing our students to leave the world of theory for the world of application and to be leaders wherever they land. This requires investment in facilities, faculty, staff and programming — and it provides a truly differentiated educational experience.

Clarkson Ignite is a transformative new department empowered to develop this culture of inclusive innovation in five key areas: curriculum, extracurricular activities, research, making, and business incubation (Figure 1: Ecosystem Elements). *Clarkson Ignite* is delivering on the university's commitment to develop entrepreneurial mindset and innovation skillsets in every Clarkson graduate, regardless of major or entrepreneurial founding intent (Figure 2: Fall 2019 Sample Updates).

Capital Project - The Innovation Hub

The Innovation Hub, with strategically designed space and tools, brings to life the vision of a community continually engaged in collaborative inspiration and innovation. Access to information has been coupled with smart spaces, creative programming, and digital and physical prototyping tools to transform the ERC into an innovation space that has become a catalyst for collaboration, creativity, and innovation. The first major phase of the Innovation Hub was completed in May 2019 and has quickly become a major hub for collaboration and team based projects.

Programming

Curriculum:

The curriculum element within the *Ignite* ecosystem has been a driver for new minors, seminars, and workshops that have been integrated across all three of Clarkson's schools - in the 2019-2020 academic year over 80% of first year students will have an in-class innovation experience.

Extracurricular:

The extracurricular element provides opportunities for all students to engage in the innovation ecosystem at the university. Programs have low/no barriers to participation for students at any experience or education level. Participants in *Ignite* activities represented 53 programs of study during the 2018-2019 academic year; examples of programming can be provided as needed.

Research:

The donor funded *Ignite Graduate Research Fellows* program brings faculty together across disciplines to study a research question at the unique intersection of their fields. Successful faculty teams are funded with a new graduate student to pursue the project and to identify additional external funding.

Making:

A culture of making has been jump started by the student-managed Dorf and Digital Makerspaces. These resources are available to all students, faculty, and staff and support is provided through student maker mentors and workshops.

Business Incubation - Shipley Center for Innovation:
While entrepreneurial mindset is the overarching goal, the Shipley Center does support the commercialization and founding of firms created in the ecosystem. This includes economic development, incubation and acceleration of student, faculty, and community startups, and opportunities for entrepreneurship training and experience.

Figures

Figure 1: *Clarkson Ignite Ecosystem Elements*

Figure 2: *Clarkson Ignite Fall 2019 Sample Updates*

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: Common Experience & Information Literacy - LIB 201

Your First and Last Name(s): Lisa Hoover
Your Affiliation(s): Clarkson University Libraries

Summary:

Information literacy (IL), taught by librarians, is necessary to ensure students are well rounded and prepared for professional life or graduate school. IL "forms the basis for lifelong learning" in "all disciplines, learning environments, and levels of education. It enables learners to master content...and assume greater control over their own learning." (Willamette University Libraries) IL is key to "linking together and enhancing" information across disciplines, which allows students to "grapple...with the nature of inquiry." (Middle States, 2003)

IL instruction has been related to student success, particularly in the "first two semesters," (Catalano, et al. 2016, pg. 5) and students who take IL courses show "statistically significant" improvement in academic performance. (Daugherty, 2011, pg. 321)

The ideal approach to integrating IL into the Common Experience is a required three-credit course, an approach accepted by Middle States. (2003, pg. 14-15) Currently, "one-shot sessions" at faculty invitation lead to "repetition...so that only lower-level skills are developed." (Middle States, 2003, pg. 14) A course would allow us to address all aspects of IL (scholarly, media, data, statistical and visual) and challenge students to reach a "deeper understanding of information." (Middle States, 2003, pg. 3)

One literature review found a range of 19-42% of colleges offering for-credit courses. (Spencer, et al., 2018) In one study "neary one-third of … courses are assigned 3-4 credits, 46% are required courses," indicating that a 3 credit required course is viable. (Cohen, 2016, pg. 568).

LIB 201: Digital Citizenship and Information as Power (currently an elective) follows the Association of College & Research Libraries Framework for IL for Higher Education. LIB 201 would form the core of students' IL competencies, built upon by advanced instruction in major courses through faculty collaboration, ensuring that students develop critical thinking and

analytical skills reinforced with major-specific knowledge, as suggested by Middle States. (2003, pg. 15-16)

We believe the course needs to be required because all students require these skills and elective courses "inevitably suffer from low enrollment." (Cohen, 2016, pg. 568). Librarians have heard that students never would have taken a course if it had not met a general-education requirement, but they are grateful they did, (Spencer, 2018) or that the library's elective course should be "required for everyone." (Daugherty, 2011)

We also know that IL is more effective within the context of a specific assignment. In LIB 201, students can explore their own discipline's approach to information through a chosen project, as IL "skills vary across scholarly domains." (Cohen, 2016, pg. 574).

In "The Evolution of Academic Excellence" President Collins discusses the need for students to recognize changes in today's world. We believe a required IL course would do just that. Students would be shepherded through the research process in a scaffolded manner designed to facilitate reflection on research processes and use of information. Students would be exposed to the cultural context of information, ethical issues (including intellectual property), and the key role of freedom of information. This would make Clarkson's IL program "unique, for others to attempt to emulate." (President Collins, 2004)
References:

Catalano, A. & Phillips, S. (2016) Information literacy and retention: A case study of the value of the library. *Evidence Based Library and Information Practice*. 11 (4) DOI: https://doi.org/10.18438/B82K7W. Retrieved from https://journals.library.ualberta.ca/eblip/index.php/EBLIP/article/view/28006/21052

Cohen, N., Holdsworth, L., Prechtel, J., Newby. J, Mery, Y., Pfander, J. and Eagleson, L. (2016) A survey of information literacy credit courses in US academic libraries. *Reference Services Review*. 44 (4) pg. 564-582. DOI: 10.1108/RSR-03-2016-0021. Retrieved from https://search.proquest.com/docview/1844597238?accountid=37646

Daugherty, A. & Russo, M. (2011) An assessment of the lasting effects of a stand-alone information literacy course: The students' perspective. *The Journal of Academic Librarianship*. 37 (4) pgs. 319-326. DOI: https://doi.org/10.1016/j.acalib.2011.04.006. Retrieved from https://www.sciencedirect.com/science/article/pii/S0099133311000747

Middle States Commission on Higher Education. (2003) Developing Research & Communications Skills: Guidelines for Information Literacy in the Curriculum.

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Common Experience Task Force

Spencer, J., Shropshire, S. and Koury, R. (2018) Credit-Bearing Information Literacy Courses in Academic Libraries: Comparing Peers. *College & Research Libraries*. 79 (6). DOI: https://doi.org/10.5860/crl.79.6.768. Retrieved from https://crl.acrl.org/index.php/crl/article/view/16825

Tables (if needed):

See attached:

Demographics of enrollment for Spring 2020

Figures (if needed):

See attached:

A summary of the American Library Association's Association for College and Research Libraries Framework
A summary of how LIB 201 will meet the ACRL Framework

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: Professional Experience - Internships and Co-ops

Your First and Last Name(s): Margo Jenkins
Your Affiliation(s): Career Center

Summary (500 words max please; 12 pt font):
Internship and Co-op experiences are directly related to Clarkson's post graduation success. Our professional experience requirements play a significant role in encouraging students to participate in these experiences. Out of the Class of 2018, over 80% of students participated in either a co-op or an internship upon graduation. **(Figure 1).** Students who participated in co-ops and internships had significantly higher placement rates than those who did not **(Figure 2).** Additionally, students who participated in internships and co-ops reported higher starting salaries **(Figure 3).** Both placement rate and average starting salary are highly important statistics demonstrating the student's return on investment when considering Clarkson.

In addition to the admissions and marketing benefits, internships and co-ops give Clarkson students the competitive edge on the job market. According to the National Association for Colleges and Employers (NACE), over 90% of employers stated they prefer to hire students with work experience (**Employers Prefer Candidates With Work Experience**). In order to remain competitive, Clarkson will need to ensure that completing internships and co-ops continues to be the norm for students graduating from Clarkson undergraduate programs.

Currently, there are a few barriers to students completing internships and co-ops that could potentially be impacted by this Task Force. First, the Career Center struggles with creating buy-in and consistent messaging across campus. The Career Center advocates for students to start thinking about internships and co-ops as early as Freshman year. We know from our data that more internship or co-op experience leads to post-graduation success, and that the job search can sometimes be a lengthy process and they may not always be successful in their first year. Advisors have been known to give inconsistent messages across schools and departments regarding when to start looking for a co-op or internship. Some advisors have been known to discourage students from participating in internships or co-ops. Additionally, the student's desire to graduate "on time" means students have started to shy away from semester programs that would impact their academic schedule. This is especially problematic for students with rigid schedules filled with pre-requisites only offered in specific semesters.

In 2019, RIT, Cornell, Drexel and Carnegie Mellon were all listed on US News Top Colleges for Internships and Co-ops (**Top Colleges for Internships and Co-ops**). As employers located in the Northeast (the majority of our current employers) decide where to commit their recruiting efforts, this poses a major threat to Clarkson. At this moment, we have an opportunity to reshape the student's experience to make sure they are participating in internships and co-ops earlier and more often, which could take us to the top of the competitive employment marketplace.
For more information and FAQs about professional experience, visit our intranet site:

https://intranet.clarkson.edu/student-life/career-center/

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Common Experience Task Force

See our co-op eligibility policy here:
https://www.clarkson.edu/career-center/student-co-op-eligibility-policy

References (if needed):
Employers Prefer Candidates With Work Experience
Top Colleges for Internships and Co-ops

Figures (if needed):
FIGURE 1: Class of 2018 - Internship and Co-op Data

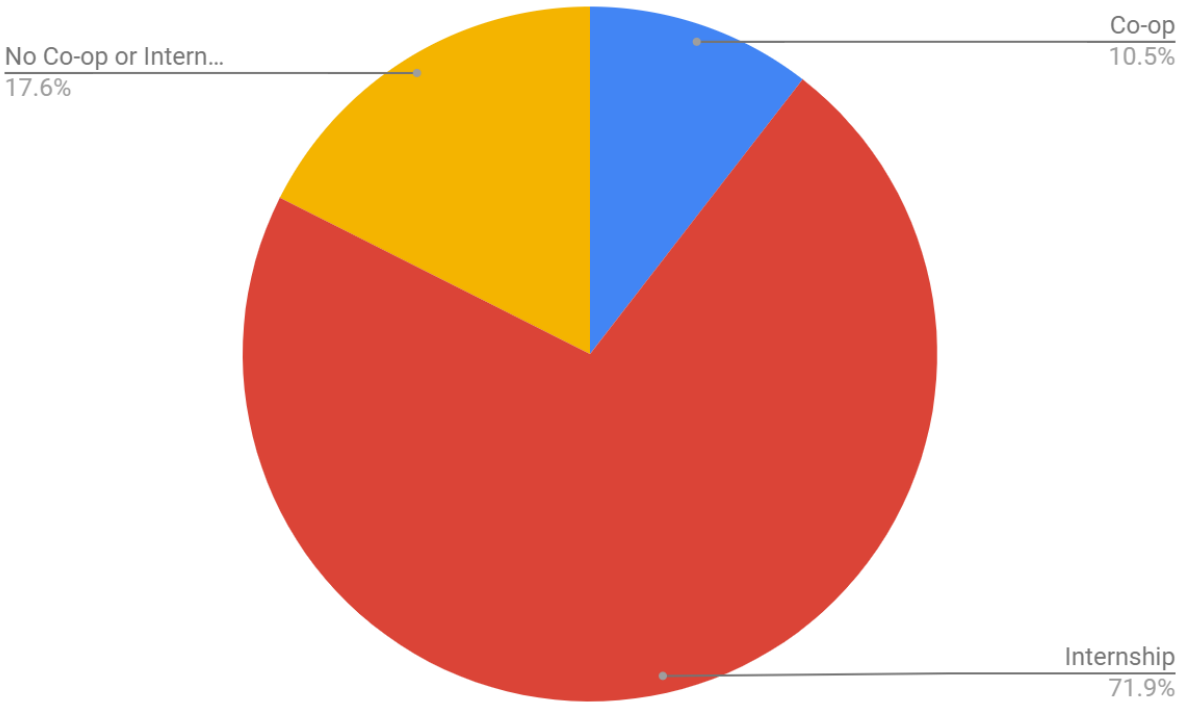


Figure 2: Class of 2018 Placement Rates by Experience

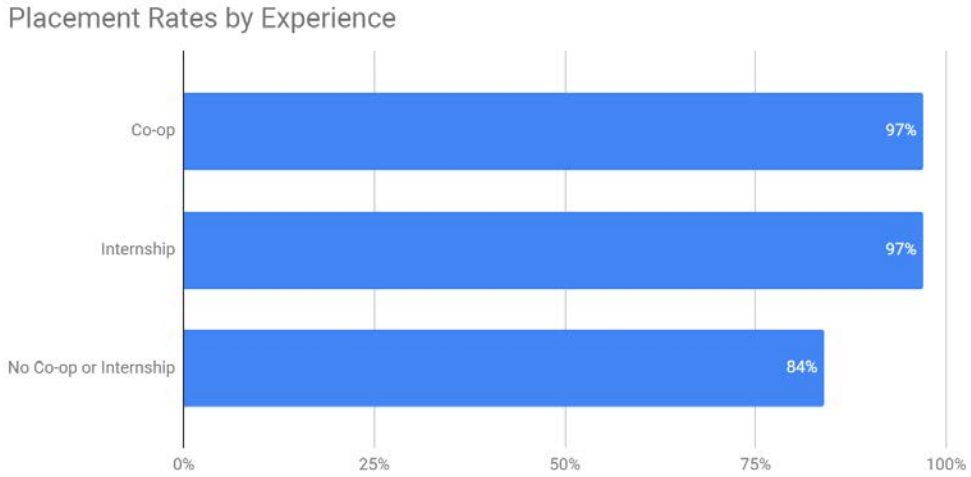
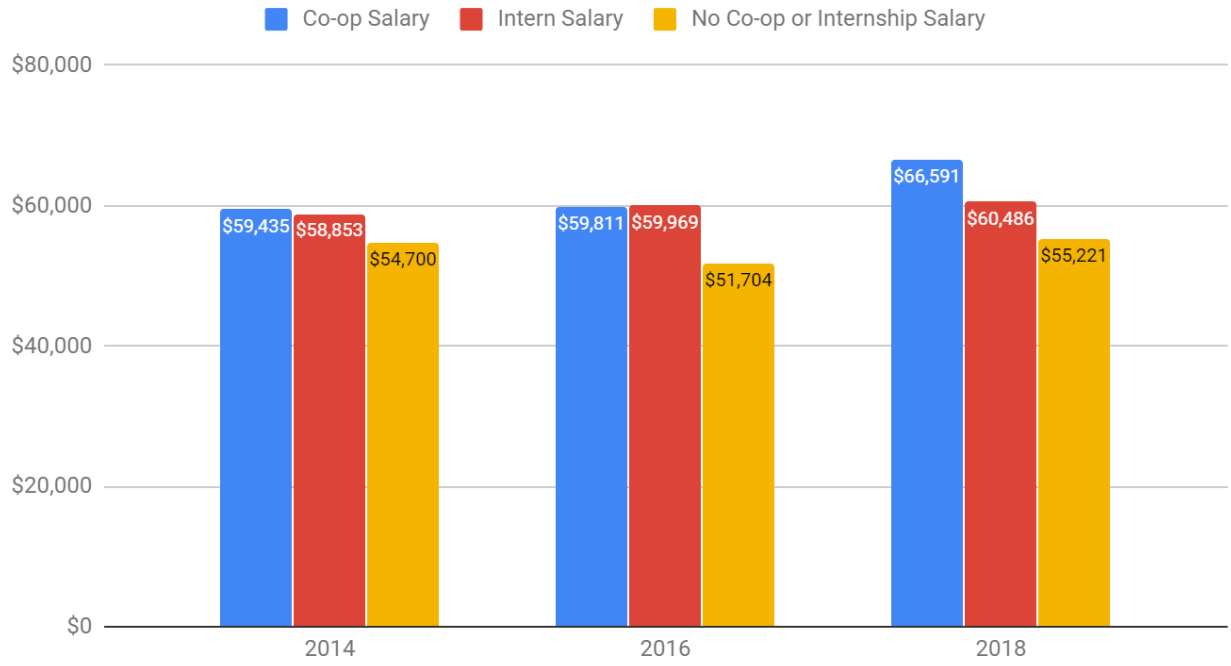


Figure 3: Class of 2018 Average Starting Salaries by Experience
FIGURE 1: Class of 2018 - Internship and Co-op Data



High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: Living Learning Communities

Your First and Last Name(s): Troy Lassial
Your Affiliation(s): Residence Life

Summary (500 words max please; 12 pt font):
Living Learning Communities are a residential environment where students with similar interests live together and participate in programs that cater to their academic, social, and personal needs. Students living in these communities have the opportunity to partake in experiences with their peers and interact with dedicated staff members who work to make the community a success, while enjoying the benefits of being part of a diverse community that shares personal, social and scholarly interests. Residence Life programming will be open to all students on any of the theme floors.

Living Learning Communities & First Year Seminar:
Currently each first year student sits at a table in FYS based on the theme of the their living learning community. The Residence Life Staff manually edits the section numbers in First Year Seminar to make this possible. The goal is that the students living together are learning together in First Year Seminar, and their final project topic is related to their theme in the living learning community.

First Year Cup is a contest between the floors in first year housing for the fall semester. The Residence Life Office collaborates with other offices on campus to decide on the events that are used for First Year Cup. Many of the events that are selected are not typically attended at a high rate by first year students. The students sign into each event, and the Residence Life staff tallies the points earned for each floor based on attendance at these events. The winning floor at the end of the semester wins a prize for the floor which has included: a trip to Destiny USA, floor "swag", and a dinner with President Collins. This fall we had 2,532 participation points given for first year students at the 20 events.

References (if needed):

Tables (if needed):

Figures (if needed):
2019
Total Responses: 386
LLC:
82.1% said that they agreed or strongly agreed that their LLC was relevant to them
83.2% said that they agreed or strongly agreed that their LLC allowed them to connect with other residents on their floor
80.3% said that they agreed or strongly agreed their LLC has made their transition to college easier
88.9% said they would recommend LLC's to other first-year students

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FY Cup:
88.6% had attended a FY cup event
35% said they would not have attended the event if it was not a first-year cup event
72.8% said First Year Cup helped build community on their floor

2018: (the survey was slightly different as there was an "other" and "neutral option" where the 2019 survey did not include those options. Neutral accounted for a good amount in each of the following categories)
Total Responses: 333

LLC:
78% said that they agreed, strongly agreed, or were neutral that their LLC was relevant to them
75.9% said that they agreed, strongly agreed, or were neutral that their LLC helped them connect to other residents on their floor
78.6% said that they agreed, strongly agreed, or were neutral that their LLC made their transition to college easier
84.6% said they agreed, strongly agreed, or were neutral that they would recommend LLC's for other first-year students

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AY 2019-2020
Common Experience Task Force

Topic Name: Common Experiences and Natural Science Majors

Your First and Last Name(s): James Peploski
Your Affiliation(s): Department of Chemistry

Summary (500 words max please; 12 pt font):
Course requirements for academic majors in the Natural Sciences of the School of Arts and Sciences were examined to determine how they have implemented the current Common Experience curriculum requirements. Details are given on page 2.

Summary:

- All majors in the Natural Sciences meet or exceed the Common Experience (CE) requirements for mathematics with courses required by the major. CE does not add to math requirements.
- Biology and Biomolecular Science majors meet one Knowledge Area (KA) requirement with a course also required by the major (BY214 Genetics, STS). Physics, Chemistry & Mathematics require the full complement of KA electives (5).
- The Technology Course requirement is met by required courses for the Chemistry & Biomolecular Science majors. In Biology, the Technology Course can be completed with designated elective within the department. In Physics, the technology requirement must be filled with an out of department elective.
- Communication points are filled to various degrees by courses required for each major. Chemistry & BMS have writing intensive upper level laboratory courses which fulfill most communication points. Other majors fill communication points with a combination of required (in department) courses and KA electives.
- Professional Experiences in all majors are typically completed through summer research internships, directed research at Clarkson, or undergraduate Teaching Assistance positions.
- Chemistry, Biomolecular Science, Physics, and Mathematics each have sufficient *free* electives to ensure that the CE requirements to not significantly limit students ability to explore areas of interest outside of their major (minors, concentrations, double majors).

Comments:

Opportunities: The natural sciences, especially biology and environmental science have tremendous opportunities for courses with Global Issue content. Courses from the Natural Sciences could be modified or developed that support current and emerging global issues.
Constraints: The common refrain from faculty and advisors is that changes to the CE curriculum should focus on *simplification.* Any changes should increase flexibility/options. Fulfillment of CE requirements is (currently) seen as an exercise in checking boxes. It is not difficult to complete, but does not lend itself to selecting courses of interest.

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School of Arts and Sciences Natural Sciences Departmental Integration with Common Experience

Chemistry

- Chemistry (43 credits)
- Math (12 Credits): Calc I, Calc II, DiffEq, Statistics
- Physics (8 credits): Physics I & II
- Biology Course
- Common Experience: FY100 + UNIV190 +5 KA courses
- Freshman Chemistry Seminar
- Free Electives/Chemistry Electives/Research (~33 credits)
- Technology Requirement met by major requirements (CM300 Instrumental Laboratory)
- Communication point requirement met by courses required by the major

Biomolecular Science

- Chemistry (26 credits)
- Biology (24 credits)
- Professional Electives (12 credits): Advanced chemistry or biology electives
- Math (9 credits): Calc I, Calc II, Statistics
- Physics (8 credits): Physics I & II , calculus based
- Common Experience: FY100 + UNIV190 + 4 KA courses (STS requirement met by major requirement BY214 Genetics)
- Free Electives (~21 credits)
- Technology Requirement met by major requirement (BY470 Biotechnology lab)
- Communication point requirement met by courses required by the major

Biology

- Biology (~42 credits)
- Chemistry (14 credits)
- Math (9 credits): MA180, 181, Biostatistics
- Physics (8 credits): Physics for Life Sciences I & II
- Common Experience: FY100 + UNIV190 + 4 KA courses (STS requirement met by major requirement BY214 Genetics)
- Free Electives (12 credits)
- Technology Requirement met by biology elective requirement (e.g. BY470 Biotechnology lab)
- Communication point requirement partially met by courses required by the major

Physics

- Physics (35 credits)
- Math (18 credits): Calc I, II, III, DiffEq, Statistics, Probability
- Biology (3 credits)
- Common Experience: FY100 + UNIV190 + 5 KA courses
- Free Electives (19 credits)

- Technology Requirement taken from outside of major requirements
- Communication point requirement partially met (3 pts.) by courses required by the major

Mathematics/Psychology (No information collected. Similar situations expected)

High Impact Practices: The following High Impact Educational Practices are employed within the Department of Chemistry & Biomolecular Science. The list is primarily specific to the Department of Chemistry & Biomolecular Science (CBMS), but the philosophy and practices employed extend throughout the other departments of the School of Science.

- *First Year Seminar Experiences*: CBMS students participate in a one cr. freshman seminar course that provides a forum for discussion of curriculum choices, career options and research opportunities. Each CBMS faculty member presents. Used to generate interest in undergraduate research. Faculty "recruit" early career students to work in their labs. Similar course in Physics
- *Writing Intensive Courses:* Communication intensive laboratory courses emphasize the cogent presentation of scientific information with written formal laboratory reports and presentations. Four consecutive semesters of laboratory work with significant communication requirement. Eight communication points.
- *Collaborative Projects and Assignments:* Freshman Chemistry Lab (Chem/ChemE/BMS) incorporate research based experiential laboratories and group projects. Top groups present their work at regional professional conferences (ACS/RAPS). Group research projects in Biotechnology laboratory.
- *Capstone Course and Projects*: (optional) Senior Thesis: 12 credits of directed research spanning two semesters. Final thesis eligible for departmental award (Brunauer Award). Considered the highest undergraduate award given by CBMS.
- *Internships*: Professional experience for CBMS students typically takes the form of summer research in industry or directed research at Clarkson University or teaching experience as an undergraduate TA.
- *Undergraduate Research*: Significant effort is made to actively recruit students into research laboratories. The majority of chemistry and biomolecular science students engage in directed research. Students often cite this as their most valuable leaning experience.
- *Undergraduate Teaching Assistant:* Undergraduates students are frequently hired as Teaching Assistants in first year (General Chemistry) courses. Undergraduates have the same duties and responsibilities as graduate TAs including, directing students in laboratory, conducting problem solving (Discussion), and grading homework, labs, and exams. Students can count this as their Professional Experience.

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Common Experience Task Force

Topic Name: Registrar and Scheduling

Your First and Last Name(s): Jennifer Stokes
Your Affiliation(s): Registrar's office, SAS

Summary (500 words max please; 12 pt font):

The Registrar's office gets involved with scheduling first year and incoming transfer students into their first semester courses. For first year students, we extend this "auto-enrollment" to the second semester (core courses only) for all engineering, E&M, Biology, Biomolecular Science and Chemistry majors. The Registrar's office (and the larger SAS office) are often called on to assist students with the course selection process during the enrollment period. This might include assisting students with navigating the system (technical help) or helping students connect with an advisor, department chair, or other academic-department personnel that can assist them with academic advising and/or course selection. While we are often asked questions regarding course selection, we do not advise students on which course(s) to take in order to meet degree requirements. We schedule 100% of incoming first year students into their fall semester courses, and we pre-schedule approximately 70% of first year students into their core spring semester courses – thus the majority of students are not required to build an entire schedule of classes individually until they are preparing for their sophomore year.

A few years ago, I was asked for some data regarding how our incoming class (first year students only) may have satisfied knowledge area requirements with high school courses (typically transferred in as AP Credit from the College Board). That data is shown in the "tables" section below, along with some updates from 2017-2019.

Other anecdotes from the SR staff:

- In general, course distribution at Clarkson follows a "prime time" pattern, which often makes creating a workable class schedule that includes both required courses, and desirable electives, difficult-to-impossible – especially for sophomores and freshmen.
- The students that come to SAS for assistance during the enrollment period tend to approach choosing a knowledge area course as a "box checking" exercise, failing to see these courses as meaningful parts of their curriculum.

References (if needed):

Tables (if needed):

Entering Term	**New FYRs**	**% of incoming class awarded *any* AP Credit**	**% of incoming class awarded Knowledge Area via AP credit**	**Percentage of total AP credit awarded that carried a Knowledge Area**
Fall 2010	712	65%	27%	41%
Fall 2011	851	60%	24%	40%
Fall 2012	778	65%	29%	44%
Fall 2013	757	75%	30%	41%
Fall 2014	767	86%	38%	45%
Fall 2015	792	90%	40%	45%
Fall 2016	797	80%	31%	39%

*Note "New FYRs" includes students who entered as first year students and Clarkson School students, but excludes students classified as "transfer students"

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Entering FYR Classes from 2010-2019

Knowledge Areas satisfied by AP Courses taken in High School	**% of incoming FYR Class**
1 KA	12%
2 KAs	16%
3 KAs	10%
4 KAs	2%
5 or more KAs	3%
Total % of Students with at least 1 KA requirement satisfied by a high school course	**43%**

High-Impact or Other Practice Summary
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Common Experience Task Force

Topic Name: Sustainability

Your First and Last Name(s): Alex French
Your Affiliation(s): Institute for a Sustainable Environment

Summary:
Sustainability is a way of thinking about systems. The ISE would like to propose including a sustainability requirement into the Common Experience. We can achieve goals for increasing sustainability literacy through courses, curriculum, and extracurricular activities. Our classes have already been reviewed and categorized with "sustainability focused" and "sustainability related" labels. The following are 5 key points justifying why sustainability should be included in the Clarkson Common Experience:

1. **It aligns with Clarkson's Mission** Statement: "*… we strive to attune ourselves and our programs to our global, pluralistic society. We share the belief that humane and environmentally sound economic and social development derive from the expansion, diffusion, and application of knowledge.*"
2. **It aligns with the Clarkson Values**: "*Having a vision of a sustainable future helps us prepare for it. Embracing the inevitable changes in our world as opportunities allows us to anticipate, promote and facilitate change*."
3. **It aligns with Clarkson's developing strategic plan**. Sustainability has emerged as one of the four key themes.
4. **We are already a leader** in this area. You can access our AASHE STARS[1] report to see how our academics align with sustainability. Among all of the universities that have completed STARS, our courses and curricula place us at the 84th percentile for the curriculum aggregate score. Currently:
    a. 2/3rds of our students graduate from programs that have adopted at least one sustainability learning outcome.
    b. 17% of our courses have some sustainability component (see Figure 1 for criteria)
    c. 80% of our academic departments offer at least one course with sustainability content
    d. Institution-wide learning outcomes already include aspects of sustainability through the knowledge areas:
        i. "…science and technology, including their relationship to society and their impact on the environment,"
        ii. "…developing an appreciation for diversity in both working and living environments," etc.
    e. Many of our clubs and other extra-curricular activities also contribute to our AASHE STARS gold rating
        i. Students clubs (Synergy, Bee Keepers, Garden, CUOC, NYWEA, Engrs for Int'l Sustainability, etc)
        ii. Student affairs – Sustainability living-learning floor, Community service
        iii. ISE Internships

[1] Association for the Advancement of Sustainability in Higher Education Sustainability Tracking and Rating System

iv. Research projects, including involvement with living-labs (digester, smart housing, ducted wind turbine, greenhouse, etc.)

5. **We won't be "breaking trail"** - Several other universities have aligned their common experience with sustainability. For example, at UVM there are multiple paths for fulfilling the sustainability requirement and meeting the sustainability learning objectives: courses, approved transfer courses, curriculum, or experiential learning experiences.

Example learning outcomes from AASHE:

- Sustainability-**focused**
  - Students will be able to define sustainability and identify major sustainability challenges.
  - Students will have an understanding of the carrying capacity of ecosystems as related to providing for human needs.
  - Students will be able to apply concepts of sustainable development to address sustainability challenges in a global context.
- Sustainability-**supportive**
  - Students will be able to demonstrate an understanding of the nature of systems.
  - Students will be able to analyze power, structures of inequality, and social systems that govern individual and communal life.
  - Students will be able to recognize the global implications of their actions.

References (if needed):

Association for the Advancement of Sustainability in Higher Education (AASHE). STARS 2.2 Technical Manual. AC 2: Learning outcomes.

UVM Sustainability General Education Requirement Overview

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: Univ 190

Your First and Last Name(s): JoAnn Rogers
Your Affiliation(s): Humanities and Social Sciences

Summary (500 words max please; 12 pt font):
The Clarkson Seminar welcomes first year students into a world of cultures, histories, and the global forces that will shape their personal and professional lives beyond their Clarkson education. Students will learn to define issues within a broad cultural context and gain experience in evaluating and interpreting texts. Seminar classes will be small and thematically structured, with an emphasis on discussion, critical reading and thinking, extensive writing, and collaborative work.

The instructors for this course come from a variety of disciplinary backgrounds. Therefore course content will be varied among the sections and instructors will draw on their diverse disciplinary backgrounds in order to instruct students in critical thinking, intellectual empathy and global perspectives. Thematic structure of course content, writing instruction and critical thought exercises will be at the discretion of the course instructor. What makes it a common experience is that all Clarkson students are asked to think about intellectually weighty topics. The common experience derives from students actively engaging and thinking critically about important questions, whether these are contemporary moral problems or questions about lived human experience in the past or in the present.

C2 courses must demonstrate the following characteristics.

1. Communication instruction is a part of the course pedagogy. Pedagogical support may include on-line components or an accompanying handbook or guide (e.g., a writing manual).
2. Communication assignments are frequent. At a minimum, communication assignments should be frequent (often one-third to one-half of the weeks) and distributed over the entire term during which the course meets. A majority of the communication assignments should be graded. While formal instruction may not be extensive, courses must demonstrate formative assessment of communication outcomes.
3. Communication assignments include regular feedback from peers and/or instructor, including the opportunity to use feedback to revise and resubmit one or more assignments. Responses from peers and/or instructor include critique of both content and mechanics for each assignment.
4. Communication assignments require sufficient volume of spoken or written work for the course to be deemed communication intensive. For example, assignments in a writing-intensive course commonly result in 5000-10,000 words of student writing (without revision, roughly 20-40 pages of double-spaced, typed work). Assignments in a course focusing on oral communication would commonly include five to eight assignments totaling 45-60 minutes of formal speaking. Courses with both oral and written communication or with web-based or multi-media communication should detail the amount of each kind of communication work expected.

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: Student Wellness

Your First and Last Name(s): Aleta Nims
Your Affiliation(s): Director of Counseling

Summary (500 words max please; 12 pt font):

Clarkson student wellness looks at the health and wellbeing of our students from a holistic perspective. Areas to evaluate are physical, emotional, social, intellectual, environmental, spiritual, financial, and occupational. In order for students to optimize wellness, these concepts should be woven into curriculum, support services, activities, and student facilities. For instance, if a student becomes hyper focused on academics (intellectual wellness) to the exclusion of personal care (perhaps physical and social wellness in this example), then they may find that they are not able to maintain the same level of wellness in their academics. A more balanced approach by prioritizing overall wellness rather than specific and targeted wellness only, will allow a student to be healthier and more successful overall.

Some definitions are as follows:

Physical Wellness: Proper care of our bodies for optimal health and functioning. Balance of physical activity, nutrition and mental well-being to keep your body in top condition.

Social Wellness: Building healthy, nurturing and supportive relationships as well as fostering a genuine connection with those around you. Balancing the unique needs of romantic relationships with other parts of your life. Conscious actions are important in learning how to balance your social life with your academic and professional lives.

Emotional Wellness: Inspires self-care, relaxation, stress reduction and the development of inner strength. How to handle both positive and negative feelings. Learn and grow from experiences. Encourages autonomy and proper decision-making skills.

Intellectual Wellness: Engaging in creative and mentally stimulating activities. Expand your knowledge and skills while allowing you to share with others. Developed through academics, cultural involvement, community involvement and personal hobbies.

Occupational Wellness: This dimension of wellness recognizes the importance of satisfaction, enrichment and meaning through work. Explore various career options and pursue the opportunities you enjoy the most.

Financial Wellness: Learning how to manage financial expenses successfully. Keeping track of expenses, making a budget, and sticking to it/following up. Learn it now- use it forever. Financial stress has been repeatedly found to be a common source of stress, anxiety and fear for college students.

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Environmental Wellness: Inspires us to live a lifestyle that is respectful of our surroundings. Encourages us to live in harmony with the Earth by taking action to protect it. Promotes interaction with nature and your personal environment. Everyone can have a strong environmental consciousness simply by raising their awareness.

Spiritual Wellness: Finding meaning in life events and defining our individual purpose. Defined through various factors including religious faith, values, ethics and morals. Regardless of whether you believe in a particular religious faith, there is always something to be learned about how you see yourself in the world.

References (if needed):

Professional Development, Wellness & Academic Advising Seminar (Sophomore Seminar): https://docs.google.com/presentation/d/1YoM9GFsPUG5RbQaR3HVEIkk7Up9j2Hap5WV5FA418FU/edit?usp=sharing

Health and Wellness Guide for Busy College Students: https://www.purdueglobal.edu/blog/student-life/health-and-wellness-guide-for-college-students/

What is Wellness? https://shcs.ucdavis.edu/wellness/what-is-wellness

High-Impact or Other Practice Summary
AY 2019-2020
Common Experience Task Force

Topic Name: First Year Seminar

Your First and Last Name(s): Christine Campbell
Your Affiliation(s): Student Success Center
Summary (500 words max please; 12 pt font):
Logistics:
Required course
Credit: 1 credit
Grading: Pass/No Credit
Class size: ~750 students, ~60/section
Class Sections: 12, 75 minute classes held Monday-Thursday
Staffing: 1 Professional Staff Coordinator, 2 Student Coordinators, 55 Student Peer Educators

Course Description:
First Year Seminar (FYS) is a required, extended orientation course designed to help freshmen transition to independent living and learning. Here they are introduced to the intellectual, cultural, and social community at Clarkson. Learning outcomes associated with weekly class discussions and presentations include, but are not limited to, wellness; academic, personal and professional development; and building awareness around financial literacy and high impact opportunities to support and supplement academics. Group discussions, as well as a group project, expose students to issues of academic integrity; relevant local, national, and global topics; as well as the opportunity to develop the social skills necessary to be a successful Clarkson student.
FYS partners with the following CU offices to continually innovate course curriculum and instruction delivery:
Clarkson Ignite
Institute of Sustainable Environment
Marketing and External Relations
International Relations
Diversity Initiatives
Undergraduate Advising Operations & Resources
Residence Life
Library
Career Center
Alumni Relations
Student Administrative Services
Student Success Center

CU Connect, our freshman mentoring program, staffs 70 volunteers including administrators, faculty, staff and some academic advisors. Each of our 750 first-year students are intentionally matched with a mentor. This program is administered through FYS. In class students are introduced to their mentor and are required to meet with him/her within the first 4 weeks of class to review their Ruffalo Noel Levitz College Student Inventory (CSI). A written reflection of this meeting is a required to pass the course.

Quantitative and qualitative data is obtained from the students, staff and CU partners to ensure learning outcomes are met. Quantitative data is obtained through the course evaluation; the Ruffalo Noel Levitz College Student Inventory; and the National Survey of Student Engagement (NSSE) and the Cooperative Institutional Research Program (CIRP) surveys. Qualitative data is collected through weekly and end of term staff meetings, pre and post planning meetings with CU partners, as well as the NSSE and CIRP. Again, this data is used to drive curriculum content, instructional delivery and student outreach.

Staffing:
FYS is staffed by a professional staff person who is responsible for curriculum development and instruction; collaboration with CU partners; and staff training and supervision. There are 2 student coordinators who provide curriculum, technological and staff support. The program retains a student staff of approximately 55. There is one master peer and, on average, 10 peer educators for each class section. Master peers are responsible for facilitating the class section and grading all class assignments. There is 1 peer educator at each of the 10 classroom tables and they are responsible for facilitating small group discussions and monitoring student performance. There are job descriptions and learning outcomes for each position. These are campus leadership opportunities and once hired, they are trained and expected to perform their duties as outlined. An employee self-assessment survey is used to determine the value of this leadership opportunity and how it can be improved.
Hiring for peer educators takes place in the spring semester. We traditionally hire about 30 new peer educators each year. Several faculty and staff from across the campus are invited to sit on interview panels. There is a spring training to introduce new peers to each other, the program, its value and place in the Clarkson Mission. A second training is held in August to teach peers to understand and manage group dynamics and learn effective facilitation strategies. Collaboration with CRC Education Program personnel ensures peers are taught appropriate classroom management skills. All peers receive a training manual and are FERPA certified to ensure they understand the confidential nature of the information with which they are entrusted. As necessary, they provide assistance with monitoring and outreach to students of concern.

References (if needed): NA

Tables (if needed): NA

Figures (if needed): NA

Handbook
For
Assessment of Student Learning Outcomes

Created by

the Student Learning Outcomes Assessment Committee

(SLOAC)

In collaboration with the

the Provost's Office

Clarkson University

Academic Year 2019-2020

Version 2

Approved (05/11/2020)

Contents

EXECUTIVE SUMMARY

The Student Learning Outcomes Assessment Committee is a standing committee of the Administrative Council (OM 2.10.2). The charge of the SLOAC is to: 1) lead the Clarkson University student learning outcomes assessment program by establishing, implementing, and managing the scope, policies, and procedures of the annual cycle of student learning outcomes by a) Developing an annual assessment cycle and timeline of collecting, evaluating, acting, and reporting, b) Reviewing and providing feedback on annual plans for student learning outcomes (assurance of learning) assessment, c) reviewing and providing feedback on annual reports of student learning outcomes, action plans, and continuous improvement; and 2) develop the capabilities of a University unit's instructional and non-instructional student learning outcomes assessment through a) creating and maintaining a Student Learning Outcomes Assessment Handbook, b) providing reporting software support and training, c) providing informational materials and training activities concerning designs, techniques, evaluating, and reporting.

Administratively, the SLOAC chair is an Ex-officio committee member chosen and appointed by the Provost from Clarkson's full-time continuing faculty and instructional staff to insure the charge of the committee is met and the Committee membership is broadly representative of University units with instructional and non-instructional programs that have explicit student learning outcomes. Committee members are appointed by the Provost, in consultation with the SLOAC chair, from faculty, staff, and administrators across the university involved in instructional and non-instructional student learning outcomes. All committee members are voting members.

This handbook, a charge of the SLOAC, represents a working document developed for providing information to and serving as a resource for instructional and non-instructional units on campus that may be undertaking assessment of student learning outcomes. The composition and order of the hand book is 1) an introduction to assessment of student learning outcomes (ASLO), 2) the general ASLO cycle, 3) the Student Learning Outcomes Assessment Committee and Charge, 4) Instructional and Non-Instructional Unit Assessment Report Outline, 5) the Clarkson University Assessment Calendar, 6) detailed steps and resources for creating and mapping student learning outcomes, and 7) web pages and software resources for ASLO. The “detailed steps” section was designed as an accessible resource for programmatic and classroom assessment beginners and a refresher for more experienced users. The appendices provide examples of assessment tables and a tutorial for the optional (training required) WEAVE reporting platform as well as an annual assessment report template.

This working handbook was approved by the 17 voting members of the SLOAC by the deadline of 10 am on 11 May 2020 by the count of 11 “yes”, 0 “No”, and 1 “abstain”.

INTRODUCTION TO ASSESSMENT OF LEARNING OUTCOMES (ASLO)

Assessment of Student Learning Outcomes (ASLO) by definition, is "the systematic collection of information about student learning, using the time, knowledge, expertise, and resources available, in order to inform decisions that affect student learning" (Walvoord 2010). Furthermore, ASLO should be viewed as "natural, scholarly act in higher education in which we follow an oversimplified but conceptually useful three-step natural and scholarly process (Walvoord 2010). Step 1 identifies what we want students to be able to do when they complete a course of study (Goals). Step 2 measures how well the students are achieving these goals and what factors influence their learning (Information/Measure/Evidence). Step 3 determines how we use the information to improve student learning (Action). Subsequently, the three common actions resulting from program (i.e. major, general education, initiative) assessment are "1) changes to curriculum, requirements, programmatic structure, or other aspects of student study, 2) changes to the policies, funding, and planning that support learning, and 3) faculty development." Therefore, ASLO is a scholarly activity and integrates student learning, pedagogy, and faculty development (Walvoord 2010).

Through the assessment process, we should be mindful that assessment of learning outcomes can be used to serve two different purposes of continuous improvement and accountability (Ewell 2009). In an ideal setting, faculty and staff gather evidence on how well students are attaining SLO and use this information to improve student performance by modifying pedagogical approaches and policies and procedures. Meanwhile, assessment is often used for accountability purposes in accreditation processes to ensure using appropriate institutional resources for student learning.

The goal of this handbook is to provide university faculty, staff, and administrators with a quick and accessible resource for assessment of student learning outcomes in both traditional and non-traditional academic settings and scales (e.g. programs, offices, departments, schools, academic affairs, university). The composition and order of the hand book is 1) an introduction to assessment of student learning outcomes (ASLO), 2) the general ASLO cycle, 3) the Student Learning Outcomes Assessment Committee and Charge, 4) Instructional and Non-Instructional

Unit Assessment Report Outline, 5) the Clarkson University Assessment Calendar, 6) detailed steps and resources for creating and mapping student learning outcomes, and 7) web pages and software resources for ASLO.

This handbook relies heavily on the content of two resources. The first resource is the second addition of "Assessment Clear and Simple: A Practical Guide for Institutions, Departments, and General Education" by Barbara E. Walvoord (Walvoord 2010). The second resource is Purdue University Fort Wayne's "Assessing Student Learning at Purdue Fort Wayne: An institutional guide for Integrating Assessment, Pedagogy, and Curriculum to Improve Student Learning" by Kent Johnson (Johnson 2018).

Assessment, Student Learning, and Pedagogy Statement

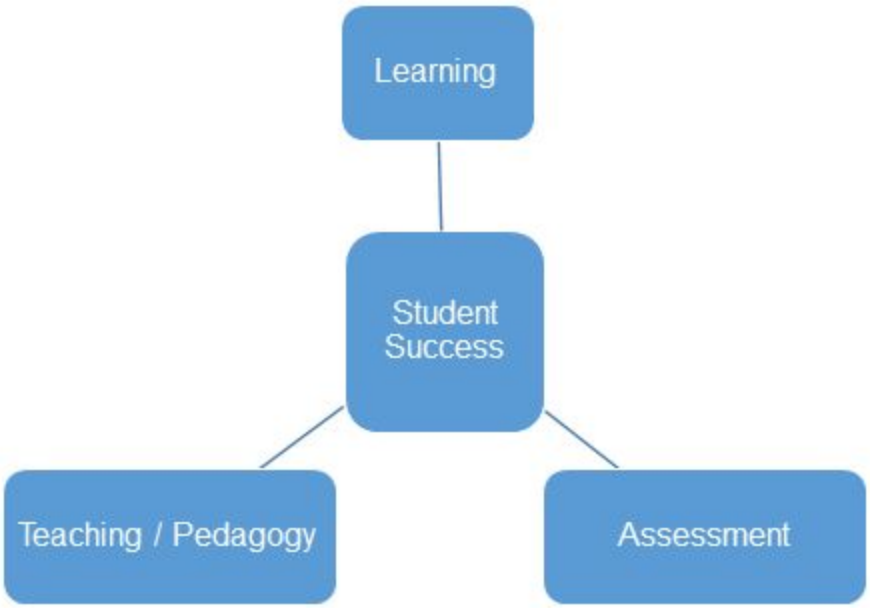

Figure 1. A simplified integrated teaching, learning, and assessment model (Johnson 2018).

As stated previously, ASLO is "the systematic collection of information about student learning, using the time, knowledge, expertise, and resources available, in order to inform decisions that affect student learning" and should be viewed as a "natural, scholarly act in higher education" (Walvoord 2010). Because of this, assessment, student learning, and pedagogy are

intertwined actions (**Fig. 1**) and when done, leads to improved student learning and effective pedagogical practices. While pedagogy is not covered in this handbook, it is implicit in its importance in the assessment process and for student learning, thus pedagogy can be improved through the assessment process.

THE ASLO CYCLE

The assessment of student learning outcomes is a continuous cycle starting with "Planning and Identifying Student Learning Outcomes" and finishes with "Assessing the Impact of Change" leading back to planning and identifying student learning outcomes (**Fig. 2**).

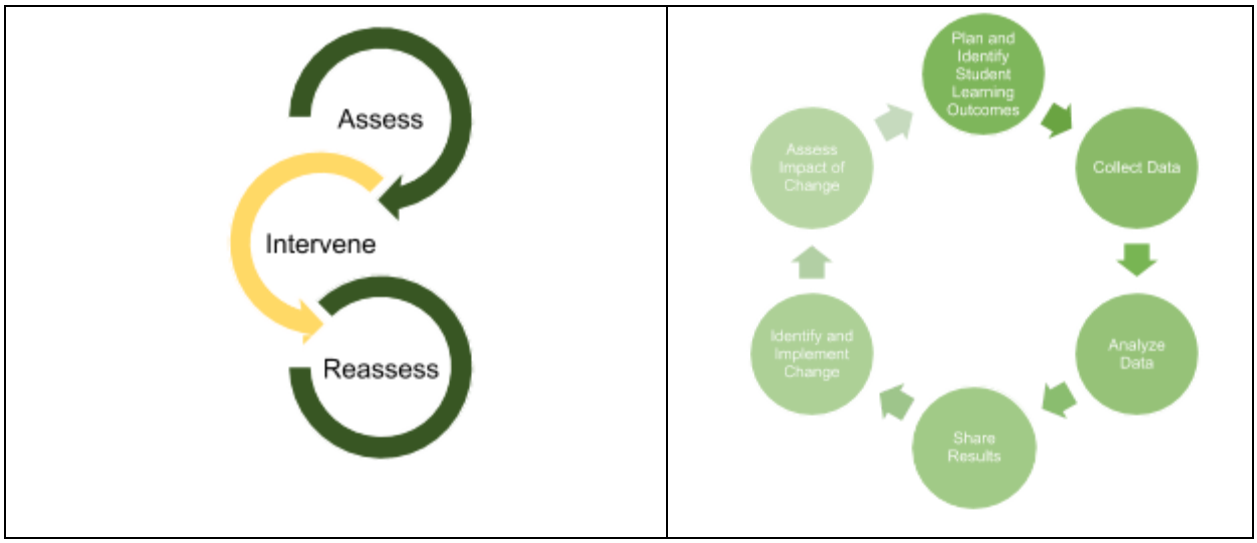

Figure 2. The overall assessment, intervene, and reassess cycle (left) associated with the Assessment of Student Learning Outcomes Cycle (Johnson 2018).

- The design of the ASLO model can be stated linearly as:
    - **identifying** common expectations for graduates of an academic program as measurable student learning outcomes;
    - **aligning** student learning outcomes at the programmatic level to institutional level student learning outcomes;
    - **defining** common specific curricular (core) and co-curricular points where student progress toward outcomes is measured through a curricular map;

- **developing** measures (embedded in learning activities within the curriculum and independent of the curriculum through departmentally determined activities);
- **analyzing** data gleaned through the measures to examine how and/or the extent to which current learning activities (e.g. specific learning strategies at the course level, sequencing, curricular coverage and expectations of courses at the programmatic level, etc.) are contributing to expected student learning gains **(assess)**;
- **applying** findings to propose changes in the curriculum or pedagogy to improve student learning **(intervene**);
- **evaluating** how the changes impact student learning to "close the loop" **(reassess).**

STUDENT LEARNING OUTCOMES ASSESSMENT COMMITTEE AND CHARGE

Assessment of student learning demonstrates that, at graduation, or other appropriate points, the institution's students have knowledge, skills, and competencies consistent with institutional and appropriate higher education goals. To help assure this assessment, the Administrative Council established the Student Learning Outcomes Assessment Committee (SLOAC) as a standing committee (OM 2.10.2).

Charge of Student Learning Outcomes Assessment Committee (SLOAC)

The charge of the SLOAC is to: 1) lead the Clarkson University student learning outcomes assessment program by establishing, implementing, and managing the scope, policies, and procedures of the annual cycle of student learning outcomes by a) developing an annual assessment cycle and timeline of collecting, evaluating, acting, and reporting, b) reviewing and providing feedback on annual plans for student learning outcomes (assurance of learning) assessment, c) reviewing and providing feedback on annual reports of student learning outcomes, action plans, and continuous improvement; and 2) develop the capabilities of a University unit's instructional and non-instructional student learning outcomes assessment through a) creating

and maintaining a Student Learning Outcomes Assessment Handbook, b) providing reporting software support and training, c) providing informational materials and training activities concerning designs, techniques, evaluating, and reporting.

Committee Composition and Administration

Chair: Ex-officio committee member chosen and appointed by the Provost from Clarkson's full-time continuing faculty and instructional staff to insure the charge of the committee is met.

Members: Committee membership is broadly representative of University units with instructional and non-instructional programs that have explicit student learning outcomes. Committee members are appointed by the Provost, in consultation with the SLOAC chair, from faculty, staff and administrators across the university involved in instructional and non-instructional student learning outcomes. All committee members are voting members.

AY 2019-20 Student Learning Outcomes Assessment Committee (SLOAC) Membership

Table 1. AY 2019-20 Student Learning Outcomes Assessment Committee

Name	Title	Unit
Catherine Avadikian	Director of Undergraduate Academic Advising	Provost's Office
Jen Ball	Chief Inclusion Officer	
Mehesh Banavar	Associate Professor	Coulter School of Engineering
Alan Christian (Ex-officio)	Chair SLOAC; Professor	Biology
Michael Conrad	MSEM Program Manager	Beacon Institute
Jan DeWaters	Associate Professor of Engineering & the Institute for STEM Education	Coulter School of Engineering

Luciana Echazu	Associate Dean of Undergraduate Programs and Operations	Reh School of Business
Benjamin Galluzzo	Associate Professor	STEM Institute
Michael Garcia	Associate Professor of Literature	Humanities and Social Sciences
Maria Gracheva	Associate Professor	Physics
Hugo Irizarry-Quinones	Associate Dean of Engineering	Coulter School of Engineering
Margo Jenkins	Director	Career Center
Laurel Kane	Associate Athletic Director	Athletics
Amir Mousavian	Associate Professor & Director of Assurance of Learning	Reh School of Business
John Moosebrugger	Associate Dean for Academic Programs	Coulter School of Engineering
Laura Perry	Manager of Academic Technology	Office of Information Technology
Amanda Pickering (Ex-officio)	Executive Director of Academic Affairs (*Ex-Officio*)	Academic Affairs/Provost's Office
Dennis Yu	Associate Dean of Graduate Programs and Research	Reh School of Business
Stacey Zeigler	Clinical Professor	Lewis School of Health Sciences

Clarkson's Assessment Components and Responsibilities

There are two fundamental components in Clarkson's plan to assess student learning. The first component deals with the general education requirements, referred to as the Common Experience.

The Clarkson Common Experience provides a common set of learning expectations and outcomes for all Clarkson students. To achieve these outcomes, each student is required to complete a set of courses and a professional experience. Course work consists of required and elective courses both from within a student's major field and from across the spectrum of all disciplines in the university. Embodied in the Common Experience are four components that serve as common threads through multiple courses:

- learning to communicate effectively,
- developing an appreciation for diversity in both working and living environments,
- recognizing the importance of personal, societal, and professional ethics,
- Understanding how technology can be used to serve humanity.

The second component in Clarkson's assessment plan is focused on student's specialized fields of study. At Clarkson, the major fields of study are distributed across the four Schools of Arts and Sciences, Business, Engineering, Health Sciences. Each of these Schools have academic disciplines which are subject to accreditation from subject area accreditors; however for the Schools of Engineering, Business, and Health Sciences there is a comprehensive subject accreditation for all majors within the School. To achieve assessment uniformity for all registered academic programs, each academic department is required to submit an annual summary of assessment activities for each instructional [i.e. degree (major)] and non-instructional program/unit with identified SLO.

These summaries are the basis of our certainty that educational objectives are being achieved. The SLOAC is charged with establishing, implementing, and managing the scope,

policies, and procedures of the annual cycle of student learning outcomes in these instructional settings and support assessment of student learning in non-instructional areas.

INSTRUCTIONAL AND NON-INSTRUCTIONAL UNIT ASSESSMENT REPORT OUTLINE

Below is an outline of the expected annual reporting for each instructional and non-instructional program. At the current time, the Provost's Office will be providing a text based template for each unit to fill out, however, in the future there may be an electorning platform (e.g. WEAVE) used for annual reporting to the Provost Office that will help in the Middle States accreditation process. The exact time commitment for writing the report will be variable depending on the size and number of programs for each unit, but once the data is collected and acted upon, the report writing is expected to be minimal. Further details on developing an assessment plan are found in section Detailed Steps and Resources for Creating and Mapping Student Learning Outcomes (SLO) and the Appendices.

A. Section 1: Student Learning Outcomes for the Program
B. Section 2: Curricular Maps
    a. Map of Programmatic
        i. SLO's to general education, major, or non-instructional program (programmatic/curriculum level) **OR**
        ii. SLO's to identified "core courses" in the curriculum (course level)
C. Section 3: Assessment Plan
    a. Description of Department's Assessment Model
        i. Minimum expectation of one direct measure and one indirect measure for each academic program (e.g. major)

ii. Minimum expectation of one indirect measure for each non-instructional program

b. Measures Used
c. Rubrics or Evaluation Metrics Descriptions
d. Description of Plan for Disseminating and Using Findings for Programmatic Learning Improvement

D. Section 4: Assessment Results
   a. Current Year Assessment Findings
   b. Proposed Changes to Address Findings
   c. Prior Year Assessment Findings and Description of Changes Made
   d. Assessment Findings for Curricular Changes Made
E. Section 5: Conclusions, Next Steps, and Communication

THE CLARKSON UNIVERSITY ASSESSMENT CYCLE CALENDAR

In September 2014, the Campus-Wide Integrated Outcomes Assessment Committee (now the SLOAC) developed an ASLO calendar. The following represents the university recommended timeline for general education and degree program level ASLO by the SLOAC or SLOAC chair.

- August:
  - Ongoing review of annual assessment reports submitted by reporting units (SLOAC)
  - Communication to Humanities & Social Sciences Chair regarding our ongoing freshman writing assessment program (SLOAC chair)
  - Update web-site for graduating senior data (SLOAC chair)
- September:
  - Ongoing review of annual assessment reports submitted by departments (SLOAC)
  - Request Institutional Research provide a stratified sample of new freshman (after the add-drop period) (SLOAC chair)

    - Schedule a meeting of the Assessment Committee (SLOAC) to discuss ongoing assessment initiatives, new initiatives (new Common Experience assessments) and to review accreditation information (SLOAC Chair)
- October:
    - Access appropriate stratified sample representing junior year students(SLOAC Chair)
    - Send student listing to the Registrar, requesting they identify all listed students who are currently enrolled in a Communications Point course(SLOAC Chair)
    - Based upon the Registrar's response, contact faculty who instruct these students requesting them to complete a writing assessment rubric for each student indicated(SLOAC Chair)
    - Meet with the Common Experience Committee to discuss assessing other elements within the Common Experience (SLOAC Chair)
- November:
    - Begin to meet with Department Chairs to discuss any new assessment initiatives related to the Common Experience as well as assessment initiatives within the department including examples of continuous improvement (SLOAC Chair)
    - As Advisory Committees meet on campus, request opportunities to meet with them to help promote assessment of student learning activities (SLOAC Chair)
- December:
    - Send reminder requests to faculty who were asked to assess student writing for the junior year cohort (SLOAC Chair)
    - Continue to meet with Department Chairs regarding assessment of student learning activities (SLOAC Chair)
- January:
    - Analysis of the Junior-Year writing assessment information (if needed contact Academic Deans to remind faculty who have yet to complete necessary assessments) (SLOAC)

    - Coordinate with the HU & SS Chair, meeting with faculty assessors who will assess new freshman writing (Pre & Post UNIV 190)(SLOAC Chair)
    - Continue to meet with Department Chairs, reminding them of the need to summarize department assessment activities as part of their annual report to the Provost (SLOAC Chair)
- February:
    - Access appropriate stratified sample representing senior year students(SLOAC Chair)
    - Send student listing to the Registrar, requesting they identify all listed students who are currently enrolled in a Communications Point course(SLOAC Chair)
    - Based upon the Registrar's response, contact faculty who instruct these students requesting them to complete a writing assessment rubric for each student indicated(SLOAC Chair)
    - Continue to meet with Department Chairs, reminding them of the need to summarize department assessment activities as part of their annual report to the Provost (SLOAC Chair)
- March:
    - Schedule a meeting of the SLOAC to discuss ongoing activities especially any new Common Experience initiatives.
    - Continue to meet with Department Chairs, reminding them of the need to summarize department assessment activities as part of their annual report to the Provost (SLOAC Chair)
    - Begin the analysis of freshman writing data from Pre & Post UNIV 190(SLOAC)
- April:
    - As appropriate, assist the Provost with their annual report requests to Department Chairs, in particular the request for assessment and continuous improvement information(SLOAC Chair)
    - Send reminder requests to faculty who were asked to assess student writing for the senior year cohort(SLOAC Chair)

- May:
    - Begin the analysis of senior year writing assessments; summarize data from freshman, junior and senior year assessments (SLOAC)
        - Compile in a graphic format and update web-site(SLOAC Chair)
- June:
    - Review Ability to Benefit report data (Clarkson School) to be filed annually with NY Higher Education in Albany (SLOAC Chair)
    - Update web-site information for all assessment information derived from the current year (SLOAC Chair)
- July:
    - Begin the analysis of annual reports on assessment and provide the Provost with appropriate summary information (SLOAC)

DETAILED STEPS AND RESOURCES FOR CREATING AND MAPPING STUDENT LEARNING OUTCOMES (SLO)

Overview

Student Learning Outcomes Statements provide a foundation for integrating teaching, learning and assessment to promote student success. Maki (2012) summarized characteristics of institutional and program level outcomes, stating a learning outcome statement:

- describes what students should be able to demonstrate, represent, or produce based on their learning histories;
- relies on active verbs that identify what students should be able to demonstrate, represent, or produce over time – verbs such as create, apply, construct, translate, identify, formulate, and, hypothesize;
- aligns with collective program-and institution-level educational intentions for student learning translated into the curriculum and co-curriculum;
- maps to the curriculum, co-curriculum, and educational practices that offer multiple and varied opportunities for students to learn;

- is collaboratively authored and collectively accepted;
- incorporates or adapts professional organizations' outcome statements when they exist;
- can be quantitatively and/or qualitatively assessed during students' undergraduate or graduate studies.

The basic principles of writing student learning outcomes is to 1) Focus on student behavior, 2) Use simple, specific action verbs, 3) Select appropriate assessment methods, and 4) State desired performance criteria (Osters and Tiu 2003). Learning outcomes are about what students are able to demonstrate upon completion of a course,a span of courses, or a program and focuses on what students can do and their behavior.

During the creating and writing of SLO, focus on the student behavior and use simple specific action verbs to describe what students are expected to demonstrate (see below) by selecting from terms associated with the revised Bloom's Taxonomy (Krathwohl 2002, Anderson et al. 2001).

Examples of Student Learning Outcomes (Osters and Tiu 2003):

- Students will be able to collect and organize appropriate clinical data (history, physical exam, laboratory assessments including technology advancements in diagnostics such as PCR).
- Students will be able to apply principles of evidence-based medicine to determine clinical diagnoses, and formulate and implement acceptable treatment modalities.
- Students will be able to articulate cultural and socioeconomic differences and the significance of these differences for instructional planning.
- Students will be able to use technology effectively in the delivery of instruction, assessment, and professional development.
- Students will be able to evaluate the need for assistance technology for their students.
- Graduates will be able to evaluate educational research critically and participate in the research community.

- Students will appreciate the value of outcomes assessment in assuring quality across the veterinary medical profession and in facilitating movement of the veterinary medical professionals across national borders.

The next step for assessment is to select the appropriate direct or indirect measure/method to assess the stated learning outcomes (**Table 2**). Ideally a mixture of qualitative and quantitative and direct and indirect measures should be used (Osters and Tiu 2003).

Table 2. Examples of Direct and Indirect Assessment Measures/Methods (Osters and Tiu 2003) (Johnson 2018).

Examples of Direct Measures	Examples of Indirect Measures
Comprehensive Exams	Peer institution comparison
Performance assessment for seniors	Job Placement
Writing Proficiency Exams	Employer Survey
National Major Field Achievement Tests	Graduate School Acceptance Rate
GRE Subject Exams	Performance in Graduate School
Certification/Licensure Exams	Student graduation/retention rates
Locally developed pre-/post exams	Exit Interviews
Senior/Honors Thesis or Independent Study	Pre/post program, course, activity attitudes survey
Portfolio/ePortfolio evaluation	Focus group discussions
Reflective Journals	Alumni Surveys
Capstone Courses	Tracking of alumni awards, achievements,
Internship Evaluations	Curriculum/syllabus analysis
Grading with Scoring Rubrics	

Next, assessors need to state a desired performance criteria that is expressed in specific and measurable/observable terms acceptable to a specific course or program. It should be noted, grades alone are not adequate feedback for assessing student learning outcomes, however, if the

grading system is tied to rubrics that assess and identify the area(s) of improvement, then "rubric grades" may be used.

Examples of direct and indirect measures performance criteria (Osters and Tiu 2003):

- All students will score an average of 8.0 on each of the 10 rubric grading areas with no individual area being under a score of 7.0.
- Sixty-five percent of all students will score at or above the national average on the standardized test with no more than 20% scoring lower than one standard deviation from the national average.
- Eighty percent of students surveyed will demonstrate an increase in appreciation for….

Finally, after analyzing the direct and indirect measures, university personnel need to: (1) review the results with colleagues, (2) investigate the meaning of the results, (3) identify corrective actions, (4) set up a process for implementing corrective actions, and (5) re-evaluate the corrective actions. Throughout this process, documentation of the discussions and process should be recorded.

Bloom's Taxonomy and Student Learning

The original Bloom's Taxonomy (Bloom 1956) developed definitions for six categories of student learning in the cognitive domain which included knowledge, comprehension, application, analysis, synthesis, and evaluation and were ordered from simple to complex and concrete to abstract. Furthermore, it was thought that this hierarchical structure represented a cumulative hierarchy in which mastery of each simpler category was prerequisite to mastery of the next more complex level (Krathwohl 2002). In addition to serving as a common language and an unlimited area of educational and learning research area, Bloom's Taxonomy was a basis for determining broad educational goals and outcomes associated with local, state, and national standards as well as a means for determining congruence for educational objectives, activities, and assessments in unit, course, or programs (Krathwohl 2002).

However, since Bloom's Taxonomy's original inception, student learning research has evolved and current thinking identifies four "Knowledge Dimensions" of A) Factual Knowledge, B) Conceptual Knowledge, C) Procedural Knowledge, and D) Metacognitive Knowledge (Krathwohl 2002, Anderson et al. 2001).

- **Factual Knowledge (A)** is the basic elements that students must know to be acquainted with a discipline or solve problems in it. This includes A.a) knowledge of terminology and A.b) knowledge of specific details and elements.
- **Conceptual Knowledge (B)** is the interrelationships among the basic elements within a larger structure that enable them to function together. This includes B.a) knowledge of classifications and categories, B.b) knowledge of principles and generalizations, and B.c) knowledge of theories, models, and structures.
- **Procedural Knowledge (C)** is how to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods. This includes C.a) knowledge of subject-specific skills and algorithms, C.b) knowledge of subject-specific techniques and methods, C.c) knowledge of criteria for determining when to use appropriate procedures.
- **Metacognitive Knowledge (D)** is knowledge of cognition in general as well as awareness and knowledge of one's own cognition. This includes D.a) strategic knowledge, D.b) knowledge about the cognitive task, including appropriate contextual and conditional knowledge, and D.c) self-knowledge.

Each of these four Knowledge Dimensions have six associated "Cognitive Process Dimensions" of **1) Remember, 2) Understand, 3) Apply, 4) Analyze, 5) Evaluate, and 6) Create** (Krathwohl 2002, Anderson et al. 2001). Note that the Knowledge Dimensions are in the verb aspect indicating an action.

- **Remember (1)** is retrieving relevant knowledge from long-term memory. This includes 1.1) recognizing and 1.2) recalling. Associated action verbs: arrange, define, duplicate, label, list, memorize, name, order, recognize, relate, recall, reproduce, tell, describe, identify, show, label, collect, examine, tabulate, quote.

- **Understand (2)** is determining the meaning of instructional messages, including oral, written, and graphic communication. This includes 2.1) interpreting, 2.2) exemplifying, 2.3) classifying, 2.4) summarizing, 2.5) inferring, 2.6) comparing, and 2.7) explaining. Associated action verbs: classify, describe, discuss, explain, express, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend, translate, review, restate, locate, recognize, report.
- **Apply (3)** is carrying out or using a procedure in a given situation. This includes 3.1) executing and 3.2) implementing. Associated action verbs: apply, choose, demonstrate, dramatize, employ, illustrate, interpret, operate, practice, schedule, sketch, solve, use, calculate, complete, show, examine, modify, relate, change, experiment, discover.
- **Analyze (4)** is breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose. This includes 4.1) differentiating, 4.2) organizing, and 4.3) attributing. Associated action verbs: analyze, appraise, calculate, categorize, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test, separate, order, connect, classify, arrange, divide, infer.
- **Evaluate (5)** is making judgements based on criteria and standards. This includes 5.1) checking and 5.2) critiquing. Associated action verbs: appraise, argue, assess, attach, defend, judge, predict, rate, support, evaluate, recommend, convince, conclude, compare, summarize.
- **Create (6)** is putting elements together to form a novel, coherent whole or make an original product. This includes 6.1) generating, 6.2) planning, and 6.3) producing. Associated action words: arrange, assemble, collect, compose, construct, create, design, develop, formulate, manage, organize, plan, prepare, propose, set up, rewrite, integrate,

Finally, because any objective could be represented in two dimensions (Knowledge and Cognitive Process), a two-dimensional taxonomy table is a useful construct of organizing an objective or multiple objectives (Krathwohl 2002, Anderson et al. 2001) and is illustrated below (**Table 3**).

Table 3. The Revised Bloom's Taxonomy Cognitive Process and Knowledge dimensions table (Krathwohl 2002, Anderson et al. 2001).

The Knowledge Dimension	The Cognitive Process Dimension					
	Remember (1)	Understand (2)	Apply (3)	Analyze (4)	Evaluate (5)	Create (6)
Factual (A)						
Conceptual (B)						
Procedural (C)						
Metacognitive (D)						

Using the Revised Bloom's Taxonomy framework, university personnel are able to develop factual, conceptual, procedural, or metacognitive knowledge dimension student learning outcomes at six Cognitive Process Dimension levels. These student-learning outcomes can be used for individual activities/assignments, at a chapter or course level, at the degree or general education program level, or at the institutional level.

Creating SLO

Academic (Instructional) Program SLO

For academic programs, the use of Walvoord (2010) "basic no-frills" academic program (e.g. degree, general education) assessment system that is informative, leads to continual improvement, and is acceptable to external evaluators is recommended. This system has three components:

1) Identification Learning Goal(s)
2) Two measures
    a. One direct measure
        i. Ideally this is sample of the student work completed at the end of their course of study and analyzed by the faculty separate to a grade

ii. Note: for some programs that use certification or licensure exams, this can be used as a second direct measure

b. One indirect measure

i. Example

1. A student survey or focus group asking at least three questions

a. Questions

i. "How well did you achieve each of the following learning goals?" (example scale: extremely well, very well, adequately well, not very well, not at all; or an agree/disagree scale)

ii. "What aspects of your education in this program help you with your learning and why was it helpful?"

iii. "What might the program do differently that would help you learn more effectively and why would these actions help?"

3) A forum to discuss data and identify actions

a. Example

i. Discuss results

1. Example: One two-hour annual program meeting to discuss results, decide on an action to improve student learning, assign responsibility for follow-up

ii. Follow up actions

1. Follow up on actions and document

iii. Keep meeting minutes for record and external evaluation

While the above assessment is the recommended assessment system for academic programs, there are other systems / strategies. **Four additional** assessment strategies are presented. The first three align with the two strategies for mapping SLO's. The fourth assesses

student achievement relative to programmatic SLO's through a portfolio approach. While these are broad templates for designing an assessment strategy, faculty within academic units should devise a plan that best fits their program. The examples are provided because they are the four more common approaches academic programs use. The plan outlined above are designed to afford program flexibility in designing their assessment plan.

1. Traditional Programmatic Assessment: Under this approach a program typically identifies broad programmatic SLO's, maps SLO's to a core group of courses, and assesses the programmatic outcome using a metric that describes student development relative to the outcome at graduation at specific points in the matriculation through a major. For example, a common assessment might be given at the introductory level in the major, at some program midpoint, and toward the end of a particular program. The primary distinction of traditional programmatic assessment is that assessment of learning students achieve is primarily measured outside of the formal requirements for any course.
2. Alternative Course-Program Scaffold Assessment: This approach begins with broad programmatic outcomes. These programmatic outcomes are further articulated through developing specific course level outcomes that scaffold to the programmatic outcome. The approach encourages assessing student learning developmentally as students matriculate through a sequence of courses in the core and a capstone or culminating experience in an upper division course. Scaffolded approaches will typically include multiple performance assessments embedded at the course level. This approach is distinguished by its emphasis on "authentic" assessment integrated into formal requirements for courses, its facility in identifying how changes in curriculum and pedagogy potentially improve student learning, and its emphasis on measuring student progress to outcome achievement as they progress to degree completion.
3. Program Objectives/Learning Outcomes Course Curriculum Based Assessment: Similar to (the) above Scaffold system, but Learning Outcomes are mapped for each course. After each course is graded, the instructor assesses each programmatic

learning outcome associated with each class using a four level rubric of "Exceeds Expectation" (4), "Meets Expectation" (3), "Needs Improvement" (2), and "Urgent to Improve" (1). The curriculum is then assessed, discussed, changed, recommended and implemented, and revisited the following year. This method does not look at individual artifacts of student learning but is an assessment of how the class performed in regards to a learning outcome in a course.

4. Portfolio Programmatic Assessment: Student Portfolios are growing in use for programmatic assessment. While primarily designed to help track an individual student's matriculation through a degree and to measure individual performance, they can be used for programmatic assessment. Portfolios offer an advantage of allowing incorporation of both "in course" assessments and "out-of-class" experiences to demonstrate student learning. An academic unit can assign a rubric to evaluate student learning as demonstrated through the portfolio. Careful sampling, faculty communication, well-constructed programmatic rubrics, and faculty development to create a degree of reliability and validity in the measurement of student work using rubrics is critical to the quality of this approach.

Co-curricular (non-instructional) Program SLO

Similar to academic programs, the use of Walvoord (2010) "basic no-frills" academic program (e.g. degree, general education) assessment system for co-curricular activities that is informative, leads to continual improvement, and is acceptable to external evaluators is recommended. This system has of three components as well, but is more flexible for its measures:

1) Identification Learning Goal(s)
2) At least one Direct or Indirect Measure; but one direct and one indirect measure is preferable
    a. Example Direct Measure
        i. Sample of Student Work:

1. Ideally this is sample of the student work completed at the end of their course program and analyzed by the staff

ii. Standardize or Non-standardized knowledge question, quiz, or exam

b. Example Indirect Measure

i. A student survey or focus group asking at least three questions

1. Questions

a. "How well did you achieve each of the following learning goals?" (example scale: extremely well, very well, adequately well, not very well, not at all; or an agree/disagree scale)

b. "What aspects of your education in this program help you with your learning and why was it helpful?"

c. "What might the program do differently that would help you learn more effectively and why would these actions help?"

3) A forum to discuss data and identify actions

a. Example

i. Discuss results

1. Example: One two-hour annual program meeting to discuss results, decide on an action to improve student learning, assign responsibility for follow-up

ii. Follow up actions

1. Follow up on actions and document

iii. Keep meeting minutes for record and external evaluation

Course Level SLO

As a best practice and to aid in the accreditation process, ***each course section syllabus should have stated course student learning outcomes.*** Ideally, there are three to five overall learning outcomes for each course or the course may have one major learning outcome for each

chapter or unit covered in the course. These outcomes are developed using the phrase "Students will be able to…" followed by the learning outcome stated using the revised Bloom's taxonomy (Krathwohl 2002, Anderson et al. 2001) for identifying "The Knowledge Dimension" and "The Cognitive Process Dimension" of the student learning outcome as discussed in the "Bloom's Taxonomy" subsection.

University members interested in more details on how to do simple to more complex formative classroom assessment, a comprehensive resource is the second edition of "Classroom Assessment Techniques: A Handbook for College Teachers" by Angelo and Cross (2012)

Course Chapter and Lesson Level Based SLO

Just like programmatic and course based student learning outcomes, student learning outcomes for a lecture, lesson, or chapter/unit can be useful in improving student learning. For each lesson/lecture, and or chapter, SLO can be constructed using the Revised Bloom's Taxonomy framework to develop factual, conceptual, procedural, or metacognitive Knowledge Dimension student learning outcomes at the six Cognitive Process Dimension levels (Krathwohl 2002, Anderson et al. 2001). These SLO can be provided to the students at the beginning of an activity and used as an outline or as a study guide for the materials. Furthermore, as stated above in the "Course SLO" section, university members interested in more details on how to do simple to more complex formative classroom assessment, a comprehensive resource is the second edition of "Classroom Assessment Techniques: A Handbook for College Teachers" by Angelo and Cross (2012)

SLO Curriculum Mapping

Curricular maps reflect departmental faculty perspectives of how their academic program structures learn to help students develop relative to the student learning outcomes defining a successful graduate. Thus, curricular mapping is a process for academic departments to ensure that the educational pathway students experience builds intentional opportunities to develop the knowledge and skills (Stark and Lattuca 1997, Jankowski and Marshall 2014).

A curriculum map identifies the level of achievement expected of students relative to a programmatic SLO as they progress through the curriculum. Thus, curricular maps serve as a roadmap that help students understand how their learning should progress relative to the expectations of their degree at specific points in their matriculation. Curriculum maps also serve as a tool for departmental faculty members to evaluate how the planned curricular experiences are contributing to students successfully achieving the expected outcomes for an academic program (Johnson 2018).

Jankowski & Marshall (2014) identified three important considerations for developing curricular maps:

1. Curricular mapping is a process of consensus building around what outcomes mean, where in the curriculum and co-curriculum they are addressed, and what the agreed-upon criteria are for determining whether students have demonstrated the requisite proficiencies.
2. Mapping, while useful to outline the intended structure of the educational program, needs to be coupled with students' actual paths through institutions. Thus, overlaying the actual course-taking patterns of students onto a curriculum map will provide a picture of how students move through and experience the curriculum, where there might be misalignment of sequential or developmental paths, and where course prerequisites are being implemented in meaningful ways.
3. Mapping provides a lens such that what is mapped is what is seen, but what is not included in the map may not be noticed as readily. Utilizing curriculum mapping as one piece in a larger conversation on student development and scaffolded learning can be helpful to ensure that the placement of various learning experiences as well as their assessment, are appropriate, students are well supported, and that the curriculum builds over time .

Below are some examples of traditional programmatic curriculum mapping and scaffolded learning using course level rubrics (**Tables 4-6**).

Table 4. Traditional programmatic curriculum map (Johnson 2018).

Course Name	Student Learning Outcomes by Courses and Level Achieved I=Introduced; E=Expanded & Emphasized; R=Reinforced; M=Mastered; A=Assessed																			
	Programmatic SLO 1					Programmatic SLO 2					Programmatic SLO 3					Programmatic SLO 4				
	I	E	R	M	A	I	E	R	M	A	I	E	R	M	A	I	E	R	M	A
200 Level Courses																				
300 Level Courses																				
400 Level Courses																				

Table 5. Mapping course level outcomes to Programmatic Level Outcomes using Levels from AAC&U Value Rubrics (Johnson 2018).

Programmatic SLO 1: Students will analyze and interpret data to produce meaningful conclusions and recommendations.				
Course Level Expectation Relative to Programmatic SLO	Capstone (4) [AKA Exceeds Expectations]	Milestone (3) **[AKA Met Expectations]**	Milestone (2) **[AKA Needs Improvement]**	Benchmark (1) [AKA Urgent to Improve]
200 Level A – List Characteristics of Valid Data				X
200 Level B – Explain data collection strategies used in lab assignments			X	
300 Level – Analyze a data set		X		
400 Level- analyze and interpret data to produce a	X			

Table 6. Association of American Colleges & Universities (AAC&U) Inquiry and Analysis VALUE Rubric (McConnell et al. 2019) used for assessing SLO outside of a grade, letter score, or percentage.

	Capstone (4) **[AKA Exceeds Expectations]**	**Milestone (3) [AKA Met Expectations]**	**Milestone (2) [AKA Needs Improvement]**	**Benchmark (1) [AKA Urgent to Improve]**
Topic selection	Identifies a creative, focused, and manageable topic that addresses potentially significant yet previously less- explored aspects of the topic.	Identifies a focused and manageable/ doable topic that appropriately addresses relevant aspects of the topic.	Identifies a topic that while manageable/ doable, is too narrowly focused and leaves out relevant aspects of the topic.	Identifies a topic that is far too general and wide-ranging as to be manageable and doable.
Existing Knowledge, Research, and/or Views	Synthesizes in-depth information from relevant sources representing various points of view/ approaches.	Presents in-depth information from relevant sources representing various points of view/ approaches.	Presents information from relevant sources representing limited points of view/ approaches.	Presents information from irrelevant sources representing limited points of view/ approaches.
Design Process	All elements of the methodology or theoretical framework are skillfully developed. Appropriate methodology or theoretical frameworks may be synthesized from across disciplines or from relevant sub disciplines.	Critical elements of the methodology or theoretical framework are appropriately developed; however, more subtle elements are ignored or unaccounted for.	Critical elements of the methodology or theoretical framework are missing, incorrectly developed, or unfocused.	Inquiry design demonstrates a misunderstanding of the methodology or theoretical framework.
Analysis	Organizes and synthesizes evidence to reveal insightful patterns, differences, or similarities related to focus.	Organizes evidence to reveal important patterns, differences, or similarities related to focus.	Organizes evidence, but the organization is not effective in revealing important patterns, differences, or similarities.	Lists evidence, but it is not organized and/ or is unrelated to focus.
Conclusions	States a conclusion that is a logical extrapolation from the inquiry findings.	States a conclusion focused solely on the inquiry findings. The conclusion arises specifically from and responds specifically to the inquiry findings.	States a general conclusion that, because it is so general, also applies beyond the scope of the inquiry findings.	States an ambiguous, illogical, or unsupportable conclusion from inquiry findings.
Limitations and Implications	Insightfully discusses in detail relevant and supported limitations and implications.	Discusses relevant and supported limitations and implications.	Presents relevant and supported limitations and implications.	Presents limitations and implications, but they are possibly irrelevant and unsupported.

ASLO TOOLS AND RESOURCES

Web pages

a. Assessment Commons – Internet Resource for Higher Education Outcomes Assessment
    a. Web page: http://assessmentcommons.org/
b. Association to Advance Collegiate Schools of Business (AACSB)
    a. Web page: https://www.aacsb.edu/
c. Association of American Colleges and Universities (AACU) (Association of American Colleges & Universities 2019)
    a. Web page: https://www.aacu.org/
    b. Assessment Resources
        i. Web page: https://www.aacu.org/quality-curriculum-and-assessment
    c. Valid Assessment of Learning in Undergraduate Education (VALUE) Rubrics
        i. https://www.aacu.org/value
d. Accreditation Board for Engineering and Technology (ABET)
    a. Web page: https://www.abet.org/
e. American Occupational Therapy Association (AOTE)
    a. Web page: https://www.aota.org/
f. Accreditation Review Commission for the Physician Assistant (ARC-PA)
    a. Web page: http://www.arc-pa.org/
g. Commission of Accreditation of Healthcare Management Education (CAHME)
    a. Web page: https://www.cahme.org/
h. Commission on Accreditation in Physical Therapy Education (CAPTE)
    a. Web page: http://www.capteonline.org/home.aspx
i. Middle States Commission on Higher Education (MSCHE)
    a. Web page: https://www.msche.org/
j. National Institute for Learning Outcomes Assessment (NILOA)
    a. Web page: https://www.learningoutcomesassessment.org/

k. Weave. The Solution for Institutional Effectiveness in Higher Education.(Weave 2019).
    a. Web page: https://weaveeducation.com
    b. CU Log in : https://app.weaveeducation.com/login/

Software

a. Weave. The Solution for Institutional Effectiveness in Higher Education. (Weave 2019).
    i. Web page: https://weaveeducation.com
    ii. CU Log in : https://app.weaveeducation.com/login/

REFERENCES

Anderson, Lorin W, David R. Krathwohl, Peter W. Airasian, Kathleen A. Cruikshank, Richard E. Mayer, Paul R. Pintrich, James Raths, and Merlin C. Wittrock, eds. 2001. *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Abridged Edition ed. New York, New York: Addison Wesley Longman, Inc,.

Angelo, Thomas A, and K Patricia Cross. 2012. *Classroom assessment techniques*: Jossey Bass Wiley.

Association of American Colleges & Universities. 2019. "Association of American Colleges & Universities. A Voice and Force for Liberal Education." Association of American Colleges & Universities, accessed 10/01/2019. https://www.aacu.org/.

Bloom, Benjamin S. 1956. "Taxonomy of educational objectives. Vol. 1: Cognitive domain." *New York: McKay*:20-24.

Ewell, Peter. 2009. *Assessment, Accountability and Improvement: Revisting the Tension*: National Institute For Learning Outcomes Assessment.

Jankowski, NA, and DW Marshall. 2014. "Roadmap to enhanced student learning: Implementing the DQP and Tuning." *Urbana, IL: National Institute for Learning Outcomes Assessment and Institute for Evidence-Based Change*.

Johnson, Kent. 2018. Assessing Student Learning at Purdue Fort Wayne: An institutional guide for integrating assessment, pedagogy, and curriculum to improve student learning. Fort Wayne, Indiana: Purdue University Fort Wayne.

Krathwohl, David R. 2002. "A revision of Bloom's taxonomy: An overview." *Theory into practice* 41 (4):212-218.

Maki, Peggy L. 2012. *Assessing for learning: Building a sustainable commitment across the institution*: Stylus Publishing, LLC.

McConnell, K.D., E.M Horan, B. Zimmerman, and T.L. Rhodes. 2019. *We Have a Rubric for That: The VALUE Approach to Assessment*. Washington, DC: Association of American Colleges and Universities (AAC&U).

Osters, Sandi, and F. Simone Tiu. 2003. "Writing Measurable Learning Outcomes." 3rd Annual Texas A&M Assessment Conference, College Station, Texas.

Stark, Joan S, and Lisa R Lattuca. 1997. "Shaping the college curriculum: Academic plans in action."

Walvoord, Barbara E. 2010. *Assessment clear and simple: A practical guide for institutions, departments, and general education*: John Wiley & Sons.

Weave. 2019. "Weave. The Solution for Institutional Effectiveness in Higher Education." Centrieva, accessed 10/01/2019.

APPENDICES A-I: Additional Resources and Templates

Appendix A: Expectations for Program Graduates (Johnson 2018).

Knowledge: What do you expect students to **know** at graduation? (Maki's (2012) perspective of demonstrate or represent)	**Knowledge:** What do you expect students to **know** at graduation? (Maki's (2012) perspective of demonstrate or represent)

Appendix B: Revised Bloom's Taxonomy Action Verbs from Anderson et al (2001) (Johnson 2018).

Definitions	**I. Remembering**	**II. Understanding**	**III. Applying**	**IV. Analyzing**	**V. Evaluating**	**VI. Creating**
Bloom's Definition	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.
Verbs	• Choose • Define • Find • How • Label • List • Match • Name • Omit • Recall • Relate • Select • Show • Spell • Tell • What • When • Where • Which • Who • Why	• Classify • Compare • Contrast • Demonstrate • Explain • Extend • Illustrate • Infer • Interpret • Outline • Relate • Rephrase • Show • Summarize • Translate	• Apply • Build • Choose • Construct • Develop • Experiment with • Identify • Interview • Make use of • Model • Organize • Plan • Select • Solve • Utilize	• Analyze • Assume • Categorize • Classify • Compare • Conclusion • Contrast • Discover • Dissect • Distinguish • Divide • Examine • Function • Inference • Inspect • List • Motive • Relationships • Simplify • Survey • Take part in • Test for • Theme	• Agree • Appraise • Assess • Award • Choose • Compare • Conclude • Criteria • Criticize • Decide • Deduct • Defend • Determine • Disprove • Estimate • Evaluate • Explain • Importance • Influence • Interpret • Judge • Justify • Mark • Measure • Opinion • Perceive • Prioritize • Prove • Rate • Recommend • Rule on • Select • Support • Value	• Adapt • Build • Change • Choose • Combine • Compile • Compose • Construct • Create • Delete • Design • Develop • Discuss • Elaborate • Estimate • Formulate • Happen • Imagine • Improve • Invent • Make up • Maximize • Minimize • Modify • Original • Originate • Plan • Predict • Propose • Solution • Solve • Suppose • Test • Theory

Appendix C. Determining Programmatic Student Learning Outcomes (Johnson 2018).

Knowledge and skills expected of program graduates	Action verbs suggesting expected level of knowledge and skill achievement at graduation	Statement of programmatic student learning outcome

Appendix D. Traditional Curricular Map (Johnson 2018).

Course Name	Student Learning Outcomes by Courses and Level Achieved I=Introduced; E=Expanded & Emphasized; R=Reinforced; M=Mastered; A=Assessed																			
	Outcome 1					Outcome 2					Outcome 3					Outcome 4				
	I	E	R	M	A	I	E	R	M	A	I	E	R	M	A	I	E	R	M	A

Appendix E. Alternative Curricular Map Based on AAC&U Value Rubric (Johnson 2018).

Programmatic SLO:				
Course Level Expectation Relative to Programmatic SLO	Capstone (4)	Milestones (3)	Milestones (2)	Benchmark(1)

Appendix F. Program Level Worksheets for Planning Interventions and Innovation Based on Analysis of Assessment Data (Johnson 2018).

Program Level Worksheet				
Program Level Courses Leading up to Programmatic Assessment	Assessment	Findings	Intervention / Innovation	Assessment

Appendix G. Course Level Worksheets for Planning Interventions and Innovation Based on Analysis of Assessment Data (Johnson 2018).

Course Level Worksheet				
Course Level Learning Activities Prior to Performance Assessment at the Course Level	Assessment	Findings	Intervention / Innovation	Assessment

Appendix H. Documentation, Management, and Reporting via Weave Education

Weave (https://weaveeducation.com/) was created by higher education professionals as a software solution to help improve student learning outcomes assessment and institutional and programmatic effectiveness. Weave provides a user-friendly software featuring 1) course, program, and institution level assessment documenting and reporting, 2) program and institutional accreditation documentation and reporting,3) faculty credentials management documentation and reporting, 4) program review documentation and reporting, 5) strategic plan tracking. These efforts are supported by unlimited customizable templates, ability to streamline processes and eliminate redundancy, expert training and support for all users, and personalized adoption and rollout strategies.

Using Weave

a. Get single sign in credentials for the Office of Planning and Analysis
b. Go to https://app.weaveeducation.com/login/ and log in
c. On the main page, click on "Dashboard" to get a summary of activities you are associated.
d. On the main dashboard, click on the "Projects" tab to see the assessment, accreditation, or program review function you have been assigned
    i. These templates will have been set up "*a priori*" in most cases
    ii. Under the "Project" tab, you can click on the following tabs: 1) assigned to you, 2) Assessment, 3) Accreditation, or 4) Program review
        1. We will train you and upload appropriate templates depending on your needs and actions.
e. On the main dashboard, click on the "Reports" tab to select the type of report you wish to generate
    i. Accreditation
    ii. Assessment

iii. Credentials
iv. Program Review
v. Supported Initiatives (Coming Soon)

Example of Learning Outcomes and Assessment Cycle in Weave

a. In a Degree or Common Experience Learning Outcome template,
    i. Add a “Learning Outcomes Goal
    ii. Add an “Outcome”
    iii. Add an “Associated Initiative”
    iv. Add an “Action Plan”
        1. Add a due date, and an action item in which to act
    v. Add a “Measure”
        1. Add “Source of Evidence”, “Description”, “Methodology” and a “Target”
            a. For the target, add “Target”, Finding, and Analysis
                i. Circle back to an action plan after this step is completed
    vi. Add attachments

Appendix I. Clarkson University's SLO Assessment Reporting Template

Annual Student Learning Outcomes (SLO) Assessment Report

Provost Office

Clarkson University

5/4/2020

Program Type (Check): __ Program; __ Major; __ Minor, __Other _____

Program/Major/Minor/Other Name:

Academic Year:

Completed by:

Completed on: (_____/____/_____)

Section 1:Please list the Student Learning Outcomes for the Program/Major/Minor/Other

Section 2: Please provide the Curricular Map(s) for the Program/Major/Minor/Other [These can be general education, major, or non-instructional program (programmatic/curriculum level) **OR** SLO's to Identified "core courses" in the curriculum (Course level)]. Please feel free to insert as many pages as you need to fit your curricular map.

Section 3: Please provide your Program/Major/Minor/Other Assessment Plan by filling out the following information

A. Description of Department's Assessment Model (Minimum expectation of one direct measure and one indirect measure for each academic program (e.g. major) and at least one indirect measure for non-instructional programs)

B. Measures Used

C. Rubrics or Evaluation Metrics Descriptions

D. Description of Plan for Disseminating and Using Findings for Programmatic Learning Improvement

Section 4: Please provide the Assessment Results for your Program/Major/Minor/Other

A. Current Year Assessment Findings

B. Proposed Changes to Address Findings

C. Prior Year Assessment Findings and Description of Changes Made

D. Assessment Findings for Curricular Changes Made

Section 5: Please provide the Conclusions, Next Steps, and Communication for your Program/Major/Minor/Other.

Signature Page: Please print/type and sign for each appropriate level for submission and review

Unit Assessment Agent

Comments:

Name Title Signature Date

Unit Administrator (if applicable)

Comments:

Name Title Signature Date

School Level Administrator (if applicable)

Comments:

Name Title Signature Date

Student Assessment of Learning Outcomes Assessment Committee Chair

Comments:

Name Title Signature Date

Provost Office

Comments:

Name Title Signature Date

Annual Student Learning Outcomes (SLO) Assessment Report

Provost Office

Clarkson University

5/4/2020

Program Type (Check): __ Program; __ Major; __ Minor, __Other _____

Program/Major/Minor/Other Name:

Academic Year:

Completed by:

Completed on: (_____/____/_____)

Section 1:Please list the Student Learning Outcomes for the Program/Major/Minor/Other

Section 2: Please provide the Curricular Map(s) for the Program/Major/Minor/Other [These can be general education, major, or non-instructional program (programmatic/curriculum level) **OR** SLO's to Identified "core courses" in the curriculum (Course level)]. Please feel free to insert as many pages as you need to fit your curricular map.

Section 3: Please provide your Program/Major/Minor/Other Assessment Plan by filling out the following information

A. Description of Department's Assessment Model (Minimum expectation of one direct measure and one indirect measure for each academic program (e.g. major) and at least one indirect measure for non-instructional programs)

B. Measures Used

C. Rubrics or Evaluation Metrics Descriptions

D. Description of Plan for Disseminating and Using Findings for Programmatic Learning Improvement

Section 4: Please provide the Assessment Results for your Program/Major/Minor/Other

A. Current Year Assessment Findings

B. Proposed Changes to Address Findings

C. Prior Year Assessment Findings and Description of Changes Made

D. Assessment Findings for Curricular Changes Made

Section 5: Please provide the Conclusions, Next Steps, and Communication for your Program/Major/Minor/Other.

Signature Page: Please print/type and sign for each appropriate level for submission and review

Unit Assessment Agent

Comments:

Name Title Signature Date

Unit Administrator (if applicable)

Comments:

Name Title Signature Date

School Level Administrator (if applicable)

Comments:

Name Title Signature Date

Student Assessment of Learning Outcomes Assessment Committee Chair

Comments:

Name Title Signature Date

Provost Office

Comments:

Name Title Signature Date

Clarkson

To: The Faculty Senate and Administrative Council
From: The Office of the Provost
Subject: The Student Learning Outcomes Assessment Committee 20-21
Date: May 13, 2020

As the Standing Committee of the Administrative Council, per Operations Manual 2-10-2C extracted below, please find membership to serve on the Student Learning Outcomes Assessment Committee as appointed by the Provost:

Amir Mousavian
Ben Galluzzo
Jeremy Riedl
Dennis Yu
Jan DeWaters
Jennifer Ball
Laurel Kane
Luciana Echazu
Margo Jenkins
Maria Gracheva
Michael Conrad
Stacey Zeigler
Michael Garcia
John Moosbrugger
Laura Perry
Mahesh Banavar
The Graduate School Representative- TBD
Alan Christian, Chair

Members: Committee membership is broadly representative of University units with instructional and non-instructional programs that have explicit student learning outcomes. Committee members are appointed by the Provost, in consultation with the SLOAC chair, from faculty, staff and administrators across the university involved in instructional and non-instructional student learning outcomes. All committee members are voting members.
The charge of the SLOAC is to:

Lead the Clarkson University student learning outcomes assessment program by establishing, implementing, and managing the scope, policies, and procedures of the annual cycle of student learning outcomes by

- Developing an annual assessment cycle and timeline of collecting, evaluating, acting, and reporting
- Reviewing and providing feedback on annual plans for student learning outcomes (assurance of learning) assessment
- Reviewing and providing feedback on annual reports of student learning outcomes, action plans, and continuous improvement
- Develop the capabilities of a University unit's instructional and non-instructional student learning outcomes assessment through
- Creating and maintaining a Student Learning Outcomes Assessment Handbook
- Providing reporting software support and training
- Providing informational materials and training activities concerning designs, techniques, evaluating, and reporting.

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Clarkson

To: The Faculty Senate
From: The Office of the Provost
Subject: The Common Experience Committee 20-21
Date: May 13, 2020

As the Standing Advisory Committee to the Provost, per Operations Manual 2-10-2-II-L extracted below, please find membership with terms to serve on the Common Experience Committee as recommended by the Provost:

Alex French	3 year term
Ben Galluzzo	2 year term
Jen Ball	1 year term
Jen Stokes	ex-officio
JoAnn Rogers	1 year term
Lisa Hoover	3 year term
Margo Jenkins	2 year term
Erin Draper	3 year term
Alan Christian	1 year term
William Jemison	3 year term ex-officio Committee Chair
CSoE faculty	TBD
Reh School faculty	TBD

The Common Experience Committee Membership:

Voting Members: Educators broadly representative of the University units that participate in delivering the student learning outcomes of the Clarkson Common Experience, recommended by the Provost and appointed by the Faculty Senate. All voting members must hold full-time continuing University positions. Terms for voting members are 3 years, with one-third of the terms expiring annually.

Ex Officio Non-Voting Members: Appointed by the Provost, to include one senior academic administrator, the Registrar, and the Director of Assessment for Student Learning Outcomes.
Chair: Appointed by the Provost from the members (both voting and ex officio/non-voting) of the Committee.

1. Oversees the Clarkson Common Experience (CCE). The CCE Committee is responsible
    a. for developing guidelines for courses and other learning experiences meeting requirements of CCE;
    b. for reviewing and approving courses and other learning experiences proposed to meet various CCE requirements;
    c. for developing and recommending procedures that facilitate the success of CCE;
    d. for coordinating the assessment of student learning in the CCE; and
    e. for periodically reviewing the CCE and advising the Provost on needed changes to CCE requirements.
2. The CCE Committee is responsible for making recommendations to the Provost concerning faculty development, student support, and other related activities.
3. The CCE Committee reports to the Provost. At least once each year, the committee will report to the Faculty Senate and the Provost on progress and issues related to the CCE. Appeals of CCE Committee decisions are directed to the Provost for final action.

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Clarkson

To: The Faculty Senate
From: The Office of the Provost
Subject: The Common Book Project Committee 20-21
Date: May 13, 2020

As the Standing Advisory Committee to the Provost, per Operations Manual 2-10-2-IIM extracted below, please find faculty membership to serve on the Common Book Project Committee as recommended by the Provost, to be considered for appointment by the Faculty Senate:

JoAnn Rogers	School of Arts and Sciences
John Moosbrugger	Coulter School of Engineering
Cecilia Martinez	Reh School of Business

(Provost Committee) Membership: 3 full-time faculty, with 1 from each School, appointed by the Faculty Senate; 2 staff, solicited from all areas of the University by general announcement and appointed by the Administrative Council; 2 students, nominated by CUSA and appointed by the existing Common Book Project Committee; an ex officio member who is appointed by the Dean of Students from the Student Life Staff for the purpose of coordinating the Common Book activities with Orientation.; and the Library Director (ex officio). The terms for students are 2 years, and ideally these terms are staggered. The terms for faculty and staff are 3 years with one-third of the terms expiring annually. The Committee elects its chair during the first meeting of the academic year. The Provost designates a returning Committee member to call the first meeting.

This Committee facilitates the annual Convocation activities, which are centered around the summer reading project for incoming first-year students and culminate in the Convocation address on the first day of the Fall semester.

The Committee engages the campus community across disciplines and duties in an intellectual activity based on the reading of a common book. This activity is focused on incoming first-year students and is part of their required activities as newly matriculated Clarkson students. The reading is then connected to a guest speaker who is the focus of the official ceremonial start of the new academic year, Clarkson Convocation. While this project is primarily focused on first-year students, the Common Book Project is an opportunity for all faculty, staff, and students to work together in a common framework on discussion, inquiry, and other activities based on the common reading.

Committee Charge: The Clarkson University Common Book Project Committee is responsible for soliciting recommendations for the book from the campus community and other sources, selecting a book and the speaker, and formulating and helping to implement the associated activities at the beginning of each academic year.

The Committee is advisory to the Provost who provides oversight of the Committee.

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Clarkson

To: The Faculty Senate and Administrative Council
From: The Office of the Provost
Subject: 20-21 Common Facilities Review & The Continuance & Readmission Committees
Date: May 13, 2020

As a matter of record, as Standing Advisory Committees to the Provost, per Operations Manual 2-10-IIB and 2.10.2-IIC respectively, please find membership below for the the Common Facilities Committee and The Continuance and Readmission Committee as appointed by the Provost:

The Common Facilities Review Committee:

Josh Fiske
Shannon Robinson
Jen Stokes
Jan Scrimgeour (SA&S)
CSoE TBD
Reh School of Business TBD

The Continuance & Readmission Committee

James Pittman
Cathy Avadikian
Christopher Robinson
Stacey Hawkins
Program Department Head(s)

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