Education Council Meeting
Thursday, January 17, 2019, 4:00 p.m.
S 103B – Student Services Boardroom

Faculty

Name	Location
Tim Walters	Shuswap Revelstoke Rep
Nicole Davis	South Okanagan Similkameen Rep
Norah Bowman	Central Okanagan Rep
Rocio Alejandre	North Okanagan Rep
Danny Marques	Trades & Apprenticeship - Kelowna
Amanda Krebs	Arts & Foundational - SA
Cathy Farrow	Health & Social Development
Kevin Douglas	Science and Technology Programs
Chris Newitt	Arts & Foundational – Kelowna
Roberta Sawatzky	School of Business - Kelowna

Educational Administrators

Name	Location
Bill Gillett (e-copy)	Dean – Business & Commercial Aviation Programs
Andrew Hay (e-copy)	Vice President Education
Dennis Silvestrone	Director – CS
Ross Tyner	Director – Library Services

Students

Name	Location
Amanda Lang	Student – South Okanagan Similkameen
Nathaniel Lee-Ran	Student – Central Okanagan
	Student – North Okanagan
Relan Johanson	Student - Shuswap Revelstoke

Staff

Name	Location
Amanda Pope	Vernon Campus
Debbie Freeman	Kelowna Campus

Non-Voting

Name	Location
Jim Hamilton (e-copy)	President, OC
	Board of Governors

Secretariat

Name	Location
Bob Burge	Registrar OC
Maddy Welsh	Education Council Office

Other Recipients

Name	Area	Name	Area
Joanna Campbell (e-copy)	Assistant to the President	Charlotte Kushner (e-copy)	VP - Students
Eric Corneau (e-copy)	Regional Dean –S Ok/Similk.	Yvonne Moritz	Dean – Science, Technology & Health
Campus Admin	Campus Admin-Penticton	Steve Moores	Dean – Trades & Apprenticeship
Rob Huxtable	Dean – Arts & Foundational Programs	Jonathan Rouse	Assoc Dean – Business & Aviation Programs
Margaret Scharf (e-copy)	Campus Admin-Salmon Arm	President (e-copy)	OC Student Union
Joan Smeyers (e-copy)	Campus Admin - Vernon	President	OC Kalamalka (Vernon) Student Assoc
Laura Berntzen (e-copy)	Asst to the Dean– STH	L Thurnheer (e-copy)	Associate Dean – STH
Anita Harden (e-copy)	Registrar's Office - Kelowna	Eve Avis (e-copy)	Asst to Dean - AFP
Michelle Sinclair (e-copy)	Asst to Dean-Trades/Appren	Leanne Foster (e-copy	Asst to Director- International
Jasmine McGee (e-copy)	Asst to Director - Student Serv	T Kisilevich (e-copy)	Assoc Dean – Trades & Apprenticeship
Lynn Kohout (e-copy)	Asst to Dean-Bus & Aviation	Barry McGillivray (e-copy)	Assoc Dean – Business & Aviation
Karen Hojnocki (e-copy)	Asst to Director–Con Studies	Allan Coyle (e-copy)	Director, Public Relations
Joan Ragsdale (e-copy)	Regional Dean Shuswap/Rev	Tanya Harding (e-copy)	Exec Asst-VP Finance & Admin
Liz Plamondon (e-copy)	Exec Asst-VP Students	Angie March (e-copy)	Asst to Regional Dean – Central Ok
Lara Jennings (e-copy)	Exec Asst – VP Education	Curtis Morcom (e-copy)	VP - Finance and Administration
Beverlie Dietze (e-copy)	Director, Learning/Teaching	Inga Wheeler (e-copy)	Assoc Registrar – Enrolment Services
Jane Lister (e-copy)	Regional Dean N Okanagan	Sharon Josephson (e-copy)	Associate Dean – AFP
Phil Ashman (e-copy)	Regional Dean C Okanagan	Karen Sansom (e-copy)	Associate Dean - AFP
Carlyn Young (e-copy)	Registrar's Office - Kelowna	James Coble (e-copy)	Director, Student Services
Gail Brown (e-copy)	Enrolment Services - Kelowna	Russell Boris (e-copy)	Director, International

Okanagan College Education Council Agenda
Meeting of Thursday, January 17, 2019 4:00 pm
S 103B – Student Services Boardroom

5.4 Standing Committee Reports
a. Operations Committee
b. ARP Committee
c. CCC Committee
d. Tributes Committee

5.5 In camera session – information distributed at the table
a. Approval of the January 8, 2018 Operations Committee meeting minutes
b. Tributes – honorary fellows

6. **Reports**
   6.1   Council Chair's Report – Chris Newitt
   6.2   President's and Vice President Education Report – Andrew Hay
   6.3   Registrar's Report – Bob Burge
   6.4   Board of Governors Report -

7. **Date, Time of Next Regular Meeting** – Thursday, February 7, 2019 at 4:00 pm

8. **Deadline for Agenda Items** – Wednesday, January 23, 2019 at 12:00 pm

9. **Adjournment**

Appendix 3.1
Approval of the Minutes for the
December 6 2018 Education Council
meeting

Motion: "That Education Council approves the minutes from
December 6, 2018 Education Council meeting as
presented."

Okanagan College Education Council
Minutes of Thursday, December 6, 2018   4:00 pm
Room S 103B Student Services Boardroom – Kelowna Campus
Draft

Present: A Hay, R Johanson, D Marques, C Newitt, R Tyner, R Alejandre, N Bowman (at 4:08), K Douglas, W Gillett, T Walters, A Krebs, D Freeman, N Lee-Ran, C Farrow, A Lang, A Pope, D Silvestrone

Regrets: J Hamilton, R Sawatzky, N Davis

Absent:

Guests: A Hickey, R Huxtable, C Bransfield, L Lermer, R Stutz, S Bailey, L Kraft

Recorder: M Welsh

1.   **Determination of Quorum and Call to Order**
     C Newitt called the meeting to order at 4: 00pm

2.   **Adoption of the Agenda**
     Motion: R Johanson/ D Silvestrone
     That Education Council approves the agenda as presented.
     -   Item 5.4 has been withdrawn from the agenda and should be expected at the January 2019 Education Council meeting.
     Carried

3.   **Approval of the Minutes**
     Motion: D Marques/ K Douglas
     That Education Council approves the minutes of the November 1, 2018 Education Council meeting as presented.
     Carried

4.   **Business Arising**

5.   **New Business**

     5.1 CPRC – AFP Curriculum
     a.   **New course: CMNS 102   Communications for Viticulture**
          Motion: R Johanson/ A Krebs
          That Education Council approves the new course: CMNS 102 Communications for Viticulture as recommended by the CPRC – AFP.
          -   R Huxtable explained that this course was developed at the request of the Viticulture department. It provides the context necessary for students to be able to write in the genre and style suited to the Viticulture industry.
          Carried

2

5.2 CPRC – T/A Curriculum
a. **New program: Automotive Service Technology Diploma**
Motion: D Silvestrone/ D Marques
That Education Council approves the new program: Automotive Service Technician Diploma as recommended by the CPRC – T/A.
- C Bransfield explained that the idea for the diploma came from the industry demand for students to have more business knowledge. Year one of the program will provide the common, core technical training, while year two will introduced the business aspects of fixed operations. The department is trying to help students to understand the business language of fixed operations. This program will provide students with a good foundation.
- C Bransfield noted typos in the admission requirements and graduation requirements.
- C Bransfield noted that the new K-12 math requirements were not listed in the admission requirements. This will be fixed when the program is entered into the calendar.
- A member advised that Principles of Mathematics 11, Applications of Mathematics 11, and Essentials of Mathematics 11 are not seven years current and therefore will not satisfy the requirement. There was some discussion as to whether OC currently offers Principles of Mathematics 11.
- A member questioned if Education Council has approved the courses listed in the program. C Bransfield explained that because the courses are not available for student registration outside of the Automotive Service Technology Diploma, they are captured in the program proposal as opposed to individual course proposals.
- A member questioned if the entire hierarchy of math prerequisites is typically listed for programs or just the minimum requirements, as the range is quite large. C Newitt noted that this question came up at Dean's Forum. A CCC meeting may have to be held to come up with a policy. It is important not to create a false equivalency for different levels of math.
- **Carried**

5.3 CPRC – STH Curriculum
a. **Program revision: Associate of Science**
Motion: R Johanson/ A Pope
That Education Council approves the program revision: Associate of Science as recommended by the CPRC – STH.
- L Lermer explained that changes were made to the program in 2013. The phrase, "at least one course in a laboratory science" was accidently left in. This revision will remove it.
Carried

b. **New course: PHYS 290**   **Directed Studies in Physics and Astronomy**
Motion: K Douglas/ A Hay
That Education Council approves the new course: PHYS 290 Directed Studies in Physics and Astronomy as recommended by the CPRC – STH.
- R Stutz explained that the course is a directed studies course for physics. There are currently no directed studies courses in physics.
- A member questioned how the course was meant to be built into students' learning outcomes and how much guidance would they receive from faculty. R Stutz advised that this course will be offered rarely; most of the time the course will be sought out by very keen, exceptional students looking to expand their knowledge. Currently, there is a student with a strong interest in astrophysics who would like to take this course.
- A member noted that he has had many students asking about a directed studies course in physics in the past.
Carried

3

c. **Course revision: PNSG 214   Pharmacology II**
   Motion: C Farrow/ A Lang
   That Education Council approves the course revision: PNSG 214 Pharmacology II as recommended by the CPRC – STH.
   - L Kraft explained that the following four motions are a package proposal. The Practical Nursing program follows a provincial curriculum which has undergone revisions. Most changes are to a few words in the course descriptions and learning outcomes being added or revised. The admission requirements for the program have changed as well.
   Carried

d. **Course revision: PNSG 416   Integrated Nursing Practice IV**
   Motion: A Hay/ T Walters
   That Education Council approves the course revision: PNSG 416 Integrated Nursing Practice IV as recommended by the CPRC – STH.
   - As above.
   Carried

e. **Course revision: PNSG 417   Consolidated Practice Experience (CPE) IV**
   Motion: D Silvestrone/ R Tyner
   That Education Council approves the course revision: PNSG 417 Consolidated Practice Experience (CPE) IV as recommended by the CPRC – STH.
   - A member questioned how this course was different than a co-op. L Kraft explained that this is unpaid, experiential learning that is instructor-led. After some questions, L Kraft clarified that the instructor is not always with the students but that they are always checking in.
   - C Newitt added that this course is closer to a practicum or internship in design, rather than a co-op. Co-ops are paid work experience and are not graded or assessed for credit. PNSG 417 fits the guidelines of what a practicum is.
   Carried

f. **Program revision: Practical Nursing Diploma**
   Motion: Relan/ Amanda Pope
   That Education Council approves the program revision: Practical Nursing Diploma as recommended by the CPRC – STH.
   - The admission requirements are being revised to adhere to provincial standards.
   Carried

5.4 CPC – BUS Curriculum
   a. **Course revision: TOUR 200   Tourism CO – OP**
      Motion: N/A
      That Education Council approves the course revision: TOUR 200 Tourism CO – OP as presented.
      Withdrawn

   b. **Program revision: Tourism Management Diploma**
      Motion: N/A
      That Education Council approves the program revision: Tourism Management Diploma as presented.
      Withdrawn

4

5.5 Memorandum of Understanding between School District No. 67 and Okanagan College

Motion: D Silvestrone/ A Pope

That Education Council approves the Memorandum of Understanding between School District No. 67 and Okanagan College as presented.

- D Silvestrone explained that this relates to the work Continuing Studies is doing with school districts across the service area. The MOU presents future opportunities for students in secondary programs related to technology. This was modeled after the Gateway to Trades programs that CS offers with great success. The plan is to offer this program first to SD 67 but to expand with other school districts in the future. Students will have the opportunity to experience different aspects of technology.
- A member noted that point 3.a. on page 36 refers to it as "the Course" instead of program. D Silvestrone clarified that it is more of a course related to these topics for students, as opposed to a program. It could be characterized as one course with two components. The member noted that in 2.d. on the same page, it is referred to as "the Program" and it should be consistent.
- After a question from another member, D Silvestrone confirmed that the students will receive high school credit. Right now, it is intended as a one year experience, although this could change in the future.
- A member asked if this program was meant to ladder into another program at the College or if it was meant to stand alone. D Silvestrone explained that it was not specifically ladder into a given program, but students will be made aware of other opportunities that exist. This is not dissimilar to the Gateway to Trades program. Hopefully, the opportunity will peak students' interest and enable them to explore further. Opportunities available at the College would be highlighted.
- A member questioned if these students would be in classes with other OC students. D Silvestrone advised that this would be separate from other offerings.

Carried

5.6 2019 – 2020 Schedules

Motion: R Alejandre, R Johanson

That Education Council approves the following schedules as presented for recommendation for the board:
- Adult Special Education 2019 – 2020 Schedule
- Early Childhood Education Diploma 2019 – 2020 Schedule
- Health Care Assistant Certificate 2019- 2020 Schedule
- Therapist Assistant Diploma 2019 – 2020 Schedule

- A member questioned why the HCA schedule had classes resume at the same time classes begin. C Farrow explained that this was due to different intake dates.
- Another member questioned the inconsistencies in wording between schedules; for example, some say "classes begin" while others say "classes start". He questioned if the schedules were generated at a departmental level. C Newitt confirmed that this was the case. Members agreed there should be standardization.
- After some discussion, C Newitt clarified that the calendars included both dates relevant to each program as well as dates relevant to the College as a whole.

Carried

5.7 Nominees to standing committees

a. Motion: R Tyner/ D Silvestrone

That Education council approves the nominee for the Academic Regulations and Policy Committee as recommended by the Operations Committee:

One (1) faculty member – Foundational Programs

Nominee: Dan Chetner for the period of December 1, 2018 to December 1, 2020

- A member questioned if it was usual for not Education Council members to be on the ARP committee. C Newitt explained that the committee represented a cross-section of the institution.
- A Hay noted that "standing" was not needed in the motion. Motions 5.7.a and 5.7.b will be amended to read, "That Education Council approves the nominee for the Academic Regulations and Policy Committee as recommended by the Operations Committee".
Carried

b. Motion: A Lang/ D Silvestrone
That Education Council approves the nominee for the Academic Regulations and Policy Committee as recommended by the Operations Committee:
One (1) Education Council voting member
Nominee: Rocio Alejandre for the period of December 1, 2018 to December 1, 2020
Carried

5.8 Standing Committee Reports
    a.   Operations Committee
- C Newitt noted that members will see the minutes of the October 30th meeting when Education Council is in camera.
- The committee will meet the first week back in January 2019 to approve graduates for January 12th convocation.

    b.   ARP Committee
- Not met.

    c.   CCC Committee
- Not met.

    d.   Tributes Committee
- C Newitt noted that the committee met to begin discussions on honorary fellows. This will be presented at the January 2019 Education Council meeting.

5.9 In Camera Session
Motion: D Silvestrone/ T Walters
That Education Council moves in camera.
Carried

    a. **Motion:** C Farrow/ A Pope
That Education Council accepts the minutes of the October 30, 2018 Operations Standing Committee meeting as presented.
- A Hay noted that "standing" was not necessary in the motion. The motion will be amended.
Carried

    b. **Motion:** A Hay/ D Marques
That Education Council accepts the minutes of the November 8, 2018 Operations Standing Committee electronic vote as presented.
- As above.
Carried

Motion: A Krebs/ D Silvestrone
That Education Council moves ex camera.
Carried

6. Reports

6.1 Council Chair's Report – C Newitt

- C Newitt advised that the new registrar, Bob Burge will be joining Education Council for the January 2019 meeting.
- He added that the process is moving quickly to find an appropriate curriculum software for the College within this fiscal year. He will be attending software demonstrations.

6.2 President & Vice-President Education Report – A Hay

- A Hay noted that the Applied Bachelor of Arts in Social Development and Research was waiting to be signed by the minister before moving to stage two. It is not uncommon for these things to take long.
- A member questioned if the minister had ever not approved something. A Hay explained that there have been past cases where the minister has turned down proposals. Until the minister says yes, there is no guarantee. The minister is given recommendations from the Assessment Board for how to proceed.

6.3 Registrar's Report – A Hickey

- No report.

6.4 Board of Governor's Report –

5   **Date, Time of Next Regular Meeting** – Thursday, January 17, 2019 at 4:00

6   **Deadline for Agenda Items** – Tuesday, December 18, 2018

9. **Adjournment** at 4:56 pm.

7

Appendix 5.1
Curriculum recommended by the
CPRC – T/A

Curriculum recommended by the Curriculum Proposal Review Committees

Trades and Apprenticeship Programs

Motion: That Education Council approves the program revision: Trades Technology Teacher Education Diploma as recommended by the CPRC – T/A:

Program revision:
- **Resequencing of courses**

Rationale:
Most students in the TTTE program have indicated a preference to attend part-time and a minor reorganization of the course sequencing will better balance the course load between terms, while allowing those students taking the Diploma who choose to attend full-time to also balance their Brock University courses between terms.

Resequencing of courses:
- TTTE 112 Drafting and Design is moved from Term 1 to Term 4
- TTTE 125 Trades Pedagogy 1 is moved from Term 2 to Term 1

	Existing	Proposed
	Year 1	
Term 1	OC courses: ENGL 100*, CMNS 103, TTTE 112, TTTE 119 Brock courses: ADED 2F90	OC courses: CMNS 103, TTTE 125, TTTE 119 Brock courses: ADED 2F90
Term 2	OC courses: TTTE 121, TTTE 125, TTTE 127 Brock courses: ADED 2F91	OC courses: ENGL 100*, TTTE 121, TTTE 127 Brock courses: ADED 2F91
Term 3	OC courses: TTTE 210	OC courses: TTTE 210
	Year 2	
Term 4	OC courses: TTTE 213 Brock courses: ADED 2F92, ADED 3F90	OC courses: TTTE 112, TTTE 213 Brock courses: ADED 2F92, ADED 3F90
Term 5	OC courses: ENGL 151*, TTTE 218 Brock courses: ADED 3P95, ADED 3P12, ADED 4F90	OC courses: ENGL 151*, TTTE 218 Brock courses: ADED 3P95, ADED 3P12, ADED 4F90
Term 6	OC courses: TTTE 230	OC courses: TTTE 230

*OC English courses may be taken in any available unrestricted section in any semester, through Distance Education or on campus; apply early.

Implementation date: November 30, 2018
Cost: N/A

Appendix 5.2
Curriculum recommended by the CPRC – STH

Science, Technology, and Health Programs

Motion: That Education Council approves the new course: BIOL 160 Introductory Biology for Viticulture as recommended by the CPRC – STH:

BIOL 160 – 3 – 6   **Introductory Biology for Viticulture**
Rationale:
This course will be part of the revised Viticulture Technician Diploma program and will serve as an introduction to plant biology, microbiology, and ecology for viticulture students.
Calendar description:
An introduction to biology for Viticulture Technician Diploma students. Students will be introduced to basic biological principles with reference to the organisms and ecological interactions applicable to viticulture and oenology.
Prerequisites:
Life Sciences 11 or Biology 11 or ABE BIOL 011
Course outline:

BIOL 160 – Introductory Biology for Viticulture Fall 2019

PROFESSOR INFORMATION:

Professor:
    Course: BIOL 160
    Campus: Penticton

Office:
    Office
    Phone:
    Office
    Hours:
    Email:

COURSE INFORMATION:
    Credits: 3
    Presentation Format: 3hrs lecture/wk, 3hrs lab/wk

Lecture Schedule: Lab Schedule:
    Prerequisite: Life Sciences 11, Biology 11 or ABE BIOL 011
    Corequisite: None

COURSE DESCRIPTION:
An introduction to biology for Viticulture Technician Diploma students. Students will be introduced to basic biological principles with reference to the organisms and ecological interactions applicable to viticulture and oenology.

COURSE MATERIALS: (available in the bookstore)
Biology 160 Custom text, Pearson Publishing
Biology 160 Lab Manual

<u>MOODLE</u>
Moodle is Okanagan College's Learning Management System. See the Biol 160 Moodle course page for materials as instructed by your professor.

<u>LABORATORY SESSIONS</u>

The lab component is an essential part of the course. Students will be expected to attend each entire lab period and to bring their lab manuals and textbooks. Some labs will reinforce and elaborate on lecture material. Other labs will present material which is best learned in the lab and will not be covered in lecture. **You must pass the lab in order to pass the course.**

<div align="center">BIOLOGY 160 SYLLABUS</div>

PART I. The Basics of Biology
An introduction to the basic molecules, structures and energy transformations of life.

1. **Introduction and Macromolecules**
   - Water and its properties
   - Acids and bases
   - Carbohydrates, lipids, proteins, nucleic acids

2. **Cells**
   - Prokaryotic cells
   - Eukaryotic cells – plant vs. animal cells
   - Cellular membranes and transport
   - Cell division

3. **Energy and Metabolism**
   - Photosynthesis overview
   - C4 and CAM photosynthesis
   - Cellular respiration
   - Fermentation

PART II. Microbial Diversity
A survey of the microbes most relevant in viticulture
   - Taxonomy, phylogeny and the tree of life
   - The biological species concept

4. **Bacteria**
   - Morphology
   - Biochemical and physiological diversity
   - Factors affecting growth
   - Soil bacteria
   - *Oenococcus oeni* and malolactic fermentation

5. **Viruses**

- Basic structure and replication
- Viral pathogens of grapevines

6. Fungi
- Major phyla
- Reproduction
- Yeasts
- Symbioses
- Fungal pathogens of plants

PART III. Plant Structure and Function

7. Plants
- Major phyla
- Tissues and organs
- Growth – primary and secondary
- Gas exchange
- Transport
- Reproduction in flowering plants and gymnosperms
- Plant growth regulators

PART IV – Ecological interactions

8. Ecophysiology
- Vine response to temperature, moisture and nutrient optima and extremes
- Allocation of energy in vegetative and reproductive stages

9. Population Ecology
- Population growth models
  - Population dynamics
  - Yeast population dynamics during fermentation
- Life history classifications across life forms
  - o vines, harmful and beneficial organisms including invasive species
- Interactions – competitive and facultative
- Diversity in population and evolution

10. Community Ecology
- Inter-species competition
- Herbivory and predator-prey relations
  - o Biological control of pests
- Symbioses
- Community structure
  - o Biodiversity in community
  - o Soil communities
  - o Plant communities - intercropping
- Natural and human disturbances, ecological succession and stability

11. **Ecosystems and Conservation Ecology**
    - Production and Energy cycling among plants, bacteria and fungi
    - Water, Carbon and nutrient cycling
    - Greater Okanagan grassland ecosystem diversity (and function) and benefits to vineyards
    - Landscape ecology – vines and the greater Okanagan – importance of grasslands

12. **Agroecology**
    - Traditional farming practices and their effect on the natural ecosystem
    - Sustainable farming practices
    - Climate change in the Okanagan; implications for viticulture

LEARNING OUTCOMES

Part I: Basics of Biology Learning Outcomes
Upon successful completion of this course, students will be able to:

1. Describe the properties of water which are essential to life.
2. Discuss the common roles of carbohydrates, proteins, lipids and nucleic acids in living cells and give examples of each type of macromolecule.
3. Explain the differences between prokaryotic cells and eukaryotic cells.
4. Identify plant and animal cells from diagrams and list their main differences.
5. Categorize membrane transport processes and predict movement of water and solutes across a membrane under different conditions.
6. With reference to both photosynthesis and cellular respiration, outline the processes by which energy from sunlight is converted into useable chemical energy in plant cells.
7. Explain the process of fermentation and the conditions required for fermentation to occur.
8. Compare C3, C4 and CAM photosynthesis and give examples of the types of plants that carry out each type of photosynthesis.

Part II: Microbial Diversity Learning Outcomes
Upon successful completion of this course, students will be able to:

1. Describe the fundamental differences between bacteria, fungi and viruses.
2. Categorize bacteria based on their morphology and biochemical properties.
3. Given examples of changes in environmental conditions, predict accompanying changes in microbial growth rate.
4. List some of the important groups of soil bacteria and describe their role in the soil ecosystem.
5. Discuss the role of *Oenococcus oeni* in malolactic fermentation.
6. Classify different types of fungi based on their reproductive structures.
7. List the common types of yeasts found in fermentations.
8. Discuss specific examples of fungal pathogens of plants and their effect on crop plants.
9. Explain why viruses are not considered living organisms.
10. Describe the basic structure and replication cycle of a virus.
11. Outline some common viral pathogens of the grapevine.

Part III: Plant Structure and Function Learning Outcomes
Upon successful completion of this course, students will be able to:

1. List the major phyla of plants as detailed in the lab and categorize their differences with respect to dependence on water and reproductive structures.
2. Identify and describe the structure and function of plant cells, tissues and organs.
3. Describe water and nutrient uptake in plants.
4. Explain the driving force behind gas exchange in plants and relate it to photosynthesis.
5. Describe the reproductive cycles of gymnosperms and angiosperms.
6. Name three categories of plant growth regulators and detail their effects on plant growth and development.

Part IV: Ecosystems and Conservation Learning Outcomes
Upon successful completion of this course, students will be able to:

1. Identify response of vines to optima and extremes in temperature, moisture and nutrients and how to mitigate vine damage
2. Identify the life history strategies of vines, weeds, insects, microbes and fungi and predict their growth
3. Recognize competitive and facultative interactions within and across species boundaries
4. State which function within the nutrient and carbon cycles each life form is responsible for and recognize signs of imbalance
5. Define the role of the vineyard in the greater ecosystem of the Okanagan valley
6. Assess the impact of specific farming practices on local ecosystems.
7. Recommend methods to minimize the impact of farming practices on sensitive ecosystems and to support sustainable agriculture.

TENTATIVE LAB TOPICS:

Week 1 – Introduction to Microscopes and Cells Week
2 – Field Trip
Week 3 – Microbiology & Soil Week
4 - Fungi
Week 5 – Lab Exam 1
Week 6 – Plant Diversity
Week 7 – Plant Anatomy and Physiology Week
8 – Plant Reproduction
Week 9 – Field Trip
Week 10 – Lab Exam 2

EVALUATION:
Lecture 70%
Laboratory 30%
Total 100%
Final grades will be assigned as percentages. See the OC Calendar for letter grade equivalents. Students missing exams may be rescheduled only with a written medical excuse or written compassionate leave excuse (according to OC policy- see the calendar). You are responsible for contacting your professor **prior** to exams for which you will be absent.

All individual assignments must be your own work

FIELD TRIPS:
Participation in field trips is required. Field trips will be during scheduled lab or lecture time. Transportation to the sites is the responsibility of the individual student.

Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the new course: CHEM 151 Introductory Chemistry for Viticulture as recommended by the CPRC – STH:

CHEM 151 – 3 – 6   **Introductory Chemistry for Viticulture**
Rationale:
This course will provide viticulture students with a fundamental understanding of chemistry, covering topics which relate to their area of study.
Calendar description:
Learners will obtain a fundamental understanding of chemistry with particular relevance to the grape and wine industry. Topics will include atomic structure, chemical bonding, properties of gases, acidity, stoichiometry, the major organic classes, stereochemistry, mechanism of reactions and impacts of viticulture practices on secondary metabolites. The lab component will include techniques of quantitative analysis, synthesis, purification and identification of compounds.
Prerequisites:
MATH 125 Mathematics for Viticulture
Course outline:

Introductory Chemistry for Viticulture

Prerequisites:	MATH 125 Mathematics for Viticulture
Format:	3 hours lecture + 3 hours lab per week
Required Materials:	1. Chemistry, Openstax College (Free online, downloadable text)
	2. Organic Chemistry, Mechanistic Patterns, 1st ed, Ogilvie, Nelson (2018)
	3. Chem 151 Laboratory Manual
	4. Safety goggles or glasses and Laboratory
Laboratory:	Commences January 20th

Evaluation:

Term Tests	30%
Assignments, Quizzes	10%
Laboratory Work	20%
Final Examination	40%
Final Grade	**100%**

It is the Department's policy that a student must obtain a passing grade (at least 50%) in **both** the **lecture** and the **laboratory** component of the course considered separately.

Calendar description

Learners will obtain a fundamental understanding of chemistry with particular relevance to the grape and wine industry. Topics will include atomic structure, chemical bonding, properties of gasses, acidity, stoichiometry, the major organic classes, stereochemistry, mechanism of reactions and impacts of viticulture practices on secondary metabolites. The lab component will include techniques of quantitative analysis, synthesis, purification and identification of compounds.

<p style="text-align:center">**Course Outline**</p>

1. *Introduction*   :
   Chapters xx
   1.1. Introduction to the Course
   1.2. Language of Measurement: Units, Accuracy and Precision, Significant figures, Uncertainty, Use of Calculators, Dimensional analysis
   1.3. Periodic chart, structure of the atom
   1.4. Mole

2. *Atomic Structure and Periodicity*   :
   Chapter xx

   2.1. The Nature of Electromagnetic Radiation and Matter
   2.2. Atomic Spectra and The Bohr Model of the Atom
   2.3. The Wave-Mechanical Model of the Atom
   2.4. Quantum Numbers and Orbitals for the Hydrogen Atom
   2.5. Carbon Electron Configurations, Aufbau Principle, Pauli's Principle, and Hund's Rule
   2.6. Periodic Trends in Electronegativity

3. *Chemical Bonding and Molecular Structure*   :
   Chapter xx
   3.1. Types and Properties of Chemical Bonds
   3.2. Lewis Structures, Octet Rule, Resonance and Formal Charges
   3.3. Molecular Geometry of Carbon: VSEPR Model, Molecular Polarity
   3.4. Valence Bond Theory: Hybridization and Geometry in Carbon

4. *Stoichiometry*   :
   Chapters xx

   4.1. Chemical Equations
   4.2. Reactions in Aqueous Solutions
   4.3. Reaction Stoichiometry including Limiting Reagents, Yield and Percent Yield
   4.4. Solution Stoichiometry including Molarity

5. *Properties of Gases*   :
   Chapter xx

   5.1. Pressure and Pressure Conversions
   5.2. Gas Laws

6. *Acid and Base Equilibria*   :
   Chapter xx

   6.1. The general form and properties of the equilibrium constant Kc
   6.2. Le Chatelier's Principle and its application.
   6.3. Introduction of Organic Acids and Bases
   6.4. Properties of acids, bases and salts in aqueous solution.
   6.5. Theories of acids and bases: Arrhenius, Bronsted-Lowry

6.6.   Strong and weak electrolytes; degree of dissociation; Ka, Kb, Kw.

6.7.   The pH scale: pH, pOH, pKa, pKb.

6.8.   Salts in aqueous solution: hydrolysis; pH of salt solutions.

6.9.   Acid-base titrations; the function and selection of indicators.

6.10.   Buffer solutions: composition and properties.

7. Organic Nomenclature
Chapter xx

7.1.   Structures and IUPAC nomenclature - functional groups

7.2.   Introduction to Stereochemistry

8. Infrared (IR) spectroscopy
Chapter xx

8.1.   Absorption freq. of functional groups

9. Alkene
Chapter xx

9.1.   Geometry, degrees unsaturation, nomenclature

9.2.   Additions reactions – hydration

9.3.   Regioselective (Markovnikov / anti Markovnikov)

9.4.   Catalytic hydrogenation

10. Alcohol
Chapter xx

10.1.   Properties

10.2.   Oxidation and reduction

11. Aldehydes and Ketones
Chapter xx

11.1.   General formula/common carbonyl group/structure/polarity

11.2.   General physical and chemical properties

11.3.   Reactions of aldehydes and ketones

11.4.   Reaction mechanisms and curved arrows

14. Carbohydrates
Chapter xx

14.1.   Nomenclature and configuration

14.2.   Anomers and stability of glucose

14.3.   Glycoside formation

14.4.   Oxidation / Reduction / Killani Fischer synthesis

14.5.   Polysaccharides

15. Acid derivative
Chapter xx

15.1.   General formula/examples/analgesic drugs/flavourings
15.2.   Resonance of carboxylate anion/pK$_a$
15.3.   Structure of Carboxylic acid derivatives
15.4.   Fischer esterification

16. Amines
Chapter xx   :

16.1.   Physical properties/basicity
16.2.   Synthesis of amines
16.3.   Aromatic Heterocyclic amines

17. Amino Acids, Peptides, Proteins, and Enzymes
Chapter xx   :

17.1.   Structure of Amino Acids,
17.2.   Peptides, proteins, Enzymes
17.3.   Yeast assimilable nitrogen

18. Aromatic Compounds
Chapter xx   :

18.1.   Conjugation and Aromaticity
18.2.   History/electron delocalization/resonance/Kekulé
18.3.   Cyclohexatriene vs. benzene/resonance energy/criteria for aromaticity
18.4.   Nomenclature
18.5.   Athrocyanines and phenolics
18.6.   Electrophilic substitution

19. Viticulture practices
Chapter xx   :

19.1.   Viticulture practices impact on Secondary Metabolites

Course Schedule

Date		Topic
Week 1		Introduction. Units, accuracy and precision, periodic table
Week 2		Atom, ions, molecules and chemical bonding
Week 3		Gases, liquids and solids
Week 4		Solutions, pH, acidity and alkalinity
Week 5		Stoichiometry and Chemical Reactions
Week 6		Alkenes and alkyne

Week 8		Alcohols, oxidation and reduction
Week 9		Aldehydes and Ketones
Week 10		Carbohydrates
Week 11		Carboxylic acids, Esters and Amides
Week12		Amines, amino acids, aromatics
Week 13		Secondary metabolites
Week14		Review

Lab Schedule

Required text: CHEM 151 – Laboratory Manual

Date		Topic
January 13		
January 20		Preparation of Aspirin
January 27		Molar Volume of Carbon Dioxide
February 3		Acid and Base Titrations, Buffers
February 10		Titratable Acidity in Wine
February 17		Reading Week
February 24		Isolation of Organic Unknown
March 2		Oxidation of (-) Borneol
March 9		Esterification – Synthesis of Isoamyl Acetate
March 23		Isolation of Essential Oils
March 30		Anthocyanins – Characterization and Antioxidant Investigation

Implementation date: September 1, 2020
Cost: N/A

Motion: That Education Council approves the new course: MATH 125 Mathematics for Viticulture as recommended by the CPRC – STH:

MATH 125 – 3 – 4   Mathematics for Viticulture
Rationale:
Viticulture wants a more applied Math course.
Calendar description:
This course covers four main topics: units, algebra, geometry and statistics. Students will understand S.I. and U.S. measurement systems, unit conversions and analyses with applications to spraying, volume and area calculations. The algebra section includes simplifying expressions, solving equations, systems of equations, mixture problems and the use of logarithms. The statistics section involves sampling techniques, descriptive and inferential statistics.

Prerequisites:
Admission to the Viticulture Program.
Course outline:

Mathematics for Viticulture

ProfessorInformation

Professor:　　　Doug
Birtwistle Campus: Kelowna
and Penticton Office:
　　　　　　C179
(Kelowna)
Phone:　　　　(250) 762-5445 ext.4337
(Kelowna) email:
　　　　　　dbirtwistle@okanagan.bc
.ca
Office Hours:　　TBD

SectionInformation

Section:　　　001
Class Times:　Tuesday/Thursday 11:00 am - 12:50 pm

CalendarDescription

MATH 1XX-3-4
Mathematics for Viticulture
This course covers four main topics: units, algebra, geometry and statistics. Students will understand S.I. and U.S. measurement systems, unit conversions and analyses with applications to spraying, volume and area calculations. The algebra section includes simplifying expressions, solving equations, systems of equations, mixture problems and the use of logarithms. The statistics section involves sampling techniques, descriptive and inferential statistics. (4,0,0)

Prerequisites: Admission to the Viticulture Program.

Transfer Information

Please refer to the transfer guide, available online at http://www.bctransferguide.ca. Students are encouraged to save a copy of current transfer information for their own records.

Course Materials

To Be Determined. At the instructor's discretion, the material may include any one of or any combination of a text, a custom course package and/or online resources.

Course Content

Using a Scientific Calculator: Keys of a Scientific Calculator; Unit Conversions

Basic Algebra: Linear and Rational Equations; Systems of Equations

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Exponents: Indices (exponents); Laws of Exponents

Working with Formulae: Transposition (manipulation) of Formulae; Evaluation of Formulae

Functions: Linear Functions; Slopes and Gradients; Exponential Functions and Logarithms

Units and Conversions: Length; Mass; Area, Volume and Capacity; Unit Analysis of a Formula

Areas: Triangles; Quadrilaterals; Circles; Applications to Land Area

Volumes: Common and Composite Shapes; Mass, Volume and Density; Sprayer Application and Calibration

Estimating Areas and Volumes: The Midpoint Rule; The Trapezoidal Rule; Simpson's Rule; Volumes of Irregular Solids

Single Variable Statistics: Sampling; Displaying Data; Measures of Average; Measures of Variation; The Normal Distribution; Confidence Intervals and Margin of Error; Standard Error and Sample Sizes

Two Variable Statistics – Linear Regression: Scatterplots; Trendlines; Correlation Coefficient; Introduction to Non-linear Regression

LearningOutcomes

The following are the anticipated learning outcomes of the course.

1. Simplify radical and exponential expressions using rules of exponents.
2. Convert units between the S.I., British and U.S. Customary systems, given conversion factors and using the built-in program on the prescribed calculator.
3. Solve and isolate variables in linear and rational equations and formulas algebraically and using the built-in program on the prescribed calculator.
4. Determine areas and volumes of composite figures and estimate the areas of irregularly shaped objects using the Trapezoidal and, when applicable, Simpson's Rules.
5. Perform a unit analysis on a formula.
6. Solve a system of equations algebraically and using the built-in program on the prescribed calculator.
7. Solve an exponential equation using logarithms and use logarithms to determine pH values.
8. Determine the mean, median, mode, sample variance, sample standard deviation and five number summary (when applicable) of a set of raw quantitative data.
9. Identify any possible outliers in a set of data of a skewed distribution using the 1.5 IQR Rule.
10. Solve normal distribution problems using the standard Normal tables and the 68 percent and 95 percent rules.
11. Set up a confidence interval for a sample mean or a sample proportion, given the level of confidence desired and the margin of error.
12. Determine the size of a sample required for a given level of confidence and margin of error.
13. Determine the correlation coefficient and the equation of a trend line for a two-variable set of data and use the equation to make predictions.
14. Use the built-in program on the prescribed calculator to determine the correlation coefficient and the equation of the most appropriate curve to fit a set of nonlinear data and use the equation to

make predictions.

CourseEvaluation

Your grade in this course will be broken down as follows:

Assignments	10%
Tests	50%
Final Exam	40%
Total	**100%**

- **Assignments** are given roughly once per week. They are short (and therefore frequent) so that students can repeat them if they desire to improve their understanding (and grade). A list of additional problems will also be given. It is recommended that you do all of these in addition to your assignment questions.

- **Tests** are given during regularly scheduled class times. Dates will be announced at least one week in advance.

- **The final exam** will be cumulative and held at a time and place set by the college.

Implementation date: August 31, 2019
Cost: N/A

Motion: That Education Council approves the new course: COSC 316 iOS Application Development as recommended by the CPRC – STH:

Rationale:
Mobile devices are ubiquitous and thus mobile app development is paramount in today's software development landscape. In particular, Apple products all run on the iOS operating system. This course has run as a COSC 419 Topics course multiple times and it is time for this to convert to a regular offering.
Calendar description:
This course will focus on application development on iOS operating systems platform. Topics include Swift programming language, graphical user interface design, touch screen features and orientations, applications working with or without web server and databases, and 2D games.
Prerequisites:
COSC 213 - Web development with LAMP
COSC 222 - Computer Data Structures
Course outline:

COMPUTER SCIENCE 316 – 01
iOS Application Development

Semester: Fall Semester 2020
Lecture: 3 hours per week
Laboratory: 2 hours per week

Course Materials: *Available online*

Course Description: This course will focus on application development on iOS operating systems platform. Topics include Swift programming language, graphical user interface design, touch screen features and orientations, applications working with or without web server and databases, and 2D games. (3,2,0)

Prerequisite: COSC 213 and COSC 222.

Important Dates:

Wednesday, September 6	- Classes begin
Friday, September 15	- Last day of registration period
Monday, October 9	- Thanksgiving Day holiday (no classes)
Friday, October 27	- Last day to withdraw from the course
Saturday, November 11	- Remembrance Day
Monday, November 13	- Statutory holiday (no classes)
Monday, December 4	- **Course project presentations**
Tuesday, December 5	- Classes end

Course Evaluation:

Lab assignments	35%
In-class Quizzes and Exercises	15%
Course Project	45%
Participation and Performance	5%
Total	100%

- All lab assignments and the course project are individual work assignments, no team works are involved.

- Late assignments will be accepted with late penalty. Each late assignment will receive a 5% deduction per school day. No assignments which are more than a week late, would receive a mark higher than 75% at the discretion of your professor.

- For the course project, students are expected to demonstrate:
  - i) their research abilities by exploring details of their research topics or programming projects;
  - ii) their presentation skills by presenting their research findings and/or program implementation details to the class.

1. **Mac-OSX Environment**
   - Installation of XCode for software development.
   - File and folder manipulations.
   - Creating, compiling and running a Swift project with XCode
   - Experimenting sample iOS apps with Xcode and the iOS Simulator

2. **Learning Swift**
   - Data types, Strings, Arrays and Dictionaries
   - Functions and Closures
   - Classes, Extensions and Protocols

3. **iOS Application Development**
   - Exploring Interface Builder
   - Model-View-Controller Application Design
   - Working with Text, Keyboards and Buttons
   - Handling Images, Animation, Sliders, and Steppers
   - Using Advanced Interface Objects and Views
   - Table views, Table views in a Container view
   - Implementing Multiple Scenes and Popovers
   - Making Choices with Toolbars and Pickers
   - Building Responsive User Interfaces
   - Using Multi-touches and Gestures
   - Sensing Orientation and Motion
   - Working with Rich Media
   - Working with QRCode
   - Implementing Location Services
   - Working with SQLite Databases
   - Networking with URLSession
   - Working with Web Server and MySQL databases
   - REST APIs
   - 2-d games with SpriteKit

> *Learning outcomes:*
> - Students are able to install and set up the software required in xOS platform for iOS application development.
> - Students learn a new programming language (Swift).
> - Students are able to develop programs for both xOS and iOS devices using Swift programming language.
> - Students are able to design Graphical User Interface for iOS devices.
> - Students are able to apply mobile technologies like multi-touch and gesture features on Graphical User Interface.
> - Students are able to set up a web server and create databases to work with iPhone.
> - Students are able to create different types of iOS mobile applications, including 2- d games.

Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the new course: COSC 326 Android Application Development as recommended by the CPRC – STH:

Rationale:
Mobile devices are ubiquitous and thus mobile app development is paramount in today's software development landscape. In particular, the majority of devices in the world run on Android operating systems. This course has run as a 419 Topics course multiple times and it is time for this to convert to a regular offering.

Calendar description:
This course will focus on application development on Android platform. Topics include graphical user interface design, multi-touch screen features and orientations, applications working with or without web server and databases.

Prerequisites:
COSC 213 - Web development with LAMP
COSC 222 - Computer Data Structures

Course outline:

Computer Science 326 – 01
Android Application Development

Semester: Winter semester 2020
Lecture: 3 hours per week
Laboratory: 2 hours per week

Course materials: Available online

Course description:
This course will focus on application development on Android platform. Topics include graphical user interface design, multi-touch screen features and orientations, applications working with or without web server and databases (3, 2, 0).

Prerequisites: COSC 213 and COSC 222

Important dates:
January 3 – Classes begin
January 13 – Last day for course changes
February 13 – Family Day (no classes)
February 14 – 17 – Mid-semester study break (no classes)
March 3 – Last day to withdraw from the course
April 7 – Course project presentations
April 10 – Last day of all classes

Course Evaluation:		
	Lab assignments	35%
	In-class Quizzes and Exercises	15%
	Course Project	45%
	Participation and Performance	5%
	Total	100%

- All lab assignments and the course project are individual work assignments.

- Late assignments will be accepted with late penalty. Each late assignment will receive a 5% deduction per school day. No late assignments which are more than a week late, would receive a mark higher than 75% at the discretion of your professor.

- For the course project, students are expected to demonstrate:
    - i) Their research abilities by exploring details of their research topics or programming projects;
    - ii) Their presentation skills by presenting their research findings and/or program implementation details to the class.

Topics

Application Development
- Android Application Development Environment
    - Android SDK
    - Android Studio (bundle package)

- Building Blocks for Android Applications
    - Application Object
    - User Interface
    - Layouts
    - Widgets
    - AndroidManifest.xml
    - Permissions
    - Android Virtual Device (AVD)
    - File system of AVD or real device via DDMS
    - Activity and its Lifecycle
    - Intents
    - Views

- Preferences
- Options, Context and Popup Menus
- Lists and Adapters
- Broadcast Receivers
- Content Providers
- Services
- Fragments

- Other Android features
  - Internal Storage
  - External Storage
  - SQLite database
  - TelephonyManager
  - WifiManager
  - AlarmManager
  - Text to Speech
  - Google maps
  - Gestures
  - Muti-touches
  - Drag and Drop
  - Animation
  - Audio and Video
  - Notifications
  - Sensors
  - QRCode/Barcode
  - Networking
  - 2-d games

- Working with Web Servers
  - Tomcat server setup and configuration
  - Servelets
  - Apache server setup and configuration
  - PHP scripts
  - MySQL databases

> *Learning outcomes:*
> - Students are able to install and set up the software required in Windows platform for Android application development.
> - Students are able to design Graphical User Interface for Android devices.
> - Students are able to apply mobile technologies like "Multi-Touch" and "Gesture" on Graphical User Interface.
> - Students are able to set up a web server to work with Android devices.
> - Students are able to create SQLite databases (on client side) and MySQL databases on a web server to work with Android devices.
> - Students are able to create different types of Android mobile applications, including 2-d games.

Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: COSC 219 Client-side Web Systems as recommended by the CPRC – STH:

COSC 219 – 3 – 5   Client-side Web Systems
Course revision
- **Calendar description**
- **Prerequisites**
- **Corequisites**
- **Couse content**

Rationale:
The current course description was written in 1998. Students must be prepared for COSC 224 - Projects in Computer Science, and now need to demonstrate many skills that were not possible in 1998. Specifically, students should be familiar setting up a personal web server Live-to-the-Internet then using synchronous and asynchronous communication to the server. They should be aware of the web-based alternative of content management systems. It is also necessary for them to be aware of the possibilities provided by higher order scripting libraries.

Calendar description:
Existing:
This course is an introduction to content creation for the web, focusing on technologies for the client. (3,2,0)
Proposed:
This course is an introduction to web applications published to the Internet. Topics will include validating end-user input, asynchronous and synchronous programming techniques, and content management systems. A scripting language for web development is the primary focus, with an exploration of one higher order library.

Prerequisites and corequisites:

	Existing	Proposed
Prerequisites	• COSC 121* *Minimum grade of 60 required	-
Corequisites	-	• COSC 118* or BUAD 335* for Business Students taking BCIS concentration • COSC 121* *Minimum grade of 60 required

Course content:
To update the course, content related to asynchronous and synchronous calls to the server is being added, as this is now a very common practice. The exploration of a higher order library is also needed (i.e JQuery). In COSC 224 - some students need to learn this on their own to complete their project. All students in their group should be introduced to the subject of higher order libraries. COSC 213 - LAMP was added in 2013

as a required course and so students have been enabled to communicate to the server and interact with a database for the last five years. The same should happen in COSC 219.
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: COSC 224 Projects in Computer Science as recommended by the CPRC – STH:

COSC 224 – 3 – 6   Projects in Computer Science
Course revision
   • **Prerequisites**
Rationale:
Students need the skills learned in COSC 219 – Client-side Web Systems and COSC 213 – Web Development with LAMP. Both courses will require a minimum grade of 60%.
The minimum grade requirement has been removed for COSC 131 and COSC 236, thus a passing grade of 50% in these courses will be sufficient to enter COSC 224. These capstone course prerequisites are intended to ensure that CIS students have completes most of the courses for first and second year before attempting the project.
Prerequisites:

Existing	Proposed
• COSC 131* • COSC 236* • COSC 304* • CMNS 123 *Minimum grade of 60 required	• COSC 131 • COSC 219* • COSC 213* • COSC 236 • COSC 304* • CMNS 123 *Minimum grade of 60 required

Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: COSC 236 Object-Oriented Systems Analysis and Design as recommended by the CPRC – STH:

COSC 236 – 3 – 5   Object-Oriented Systems Analysis and Design
Course revision
   • **Calendar description**
Rationale:
In the course description put the word "design" before the word "patterns".
The term "design patterns" is a reference to very specific content. Clarity is needed to ensure that faculty and students know what to expect in this course. The term is also important for the purpose of assessing transfer credit.
Calendar description:
Existing:
This course is an introduction to object-oriented techniques in systems analysis and design. It introduces a number of tools and techniques used in object-oriented systems analysis and design (OOA&D) and builds on the OOA&D techniques from previous courses. Topics will include development lifecycles (in particular the iterative development model), analysis techniques (requirements and uses cases), design techniques (modeling methods, responsibilities and collaborations), and patterns.
Proposed:
This course is an introduction to object-oriented techniques in systems analysis and design. It introduces a number of tools and techniques used in object-oriented systems analysis and design (OOA&D) and builds on the OOA&D techniques from previous courses. Topics will include development lifecycles (in particular

the iterative development model), analysis techniques (requirements and uses cases), design techniques (modeling methods, responsibilities and collaborations), and design patterns.
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: COSC 320 Analysis of Algorithms as recommended by the CPRC – STH:

COSC 320 – 3 – 5   **Analysis of Algorithms**
Course revision
  • **Title** – new title – **Algorithms**
Rationale:
The term "analysis" usually indicates a focus on math proofs, in a lecture-only format. The intent for this recently approved course is to do some analysis, but also explore an "applied" component in a two hour lab. Therefore the title signals to the reader to explore the description in more detail.
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: COSC 331 Middleware Development as recommended by the CPRC – STH:

COSC 331 – 3 – 5   **Middleware Development**
Course revision
  • **Title** – new title – **Microservices and Software Architecture**
  • **Calendar description**
  • **Prerequisites**
  • **Content**
Rationale:
The "middleware" mentioned in the course title is an out-dated term as it refers to enterprise software that is either "monolithic", "legacy" or "existing". Since 2013, the alternative of containers and micro-services has been available, gaining wide acceptance since 2016. Research studies indicate that 56% of existing enterprise applications are transitioning to the use of microservices and containers, following the paradigm of distributed computing that has emerged since 2002.
Calendar description:
Existing:
In this course, students will explore the technologies employed in the development and deployment of software which participates in a multi-tier enterprise application environment. Topics include application servers, and the presentation, service, data and information system tiers. (3,2,0)
Proposed:
Students will be introduced to web services that interact across multiple servers and the need for optimal performance and security. The evolution of enterprise software from legacy enterprise applications to the use of microservice containers and orchestration tools will be explored. Topics will include: distributed computing, integrating existing enterprise applications with microservices, and using patterns of software architecture for design.
Prerequisites:

Existing	Proposed
• COSC 222* Minimum grade of 60 required	• COSC 222* • COSC 236 *Minimum grade of 60 required

Course content:
To update the course, content related to microservices, containers and orchestration tools needs to be included. This new version of enterprise software now runs many web services across multiple servers. This allows for code that easier to create, maintain and secure. The old legacy enterprise applications still

exist, and many are trying to integrate some functionality from containers. There is sufficient maturity in the field that concepts related to distributed computing and software architecture patterns ensure that software developers are not in the position of "re-inventing the wheel". At the Sept 26, 2018 PAC meeting, the committee affirmed the need to stop using the term "middleware" and update the content of this course in this manner.
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: COSC 360 Server-Side Web Systems as recommended by the CPRC – STH:

COSC 360 – 3 – 5   Server-Side Web Systems
Course revision
- **Title** – new title – **Server Platform as a Service**
- **Calendar description**
- **Course content**

Rationale:
The current course description was written in 1998. Since 2013, content listed here has moved to two other courses: COSC 213 and COSC 219. This course needs to be updated to prepare students for the fourth year capstone project, so that they understand how to use server platforms BEFORE they enter the course. Furthermore, the modern practice of dev/ops combines development and operations, with the credo, "if you build it you will maintain it" ... initiated by Amazon in 2002.

Calendar description:
Existing:
A follow-up course to COSC 219, this course examines different technologies that are used in the construction of a website focusing on the server-side technologies. It uses advanced server-side technologies to create dynamic Web applications that derive information from a database. It familiarizes students with the challenges they face in building such applications and discusses different methods to efficiently overcome those challenges. (3,2,0)

Proposed:
Students will focus on single-server deployment on a variety of cloud-native platforms (PaaS - Platform as a Service). Students will explore the need to move from their own server to a cloud platform when they hope to serve thousands of end-users. Topics may include: performant server-side scripting, cost effectiveness and efficiency, load balancing, robustness testing.

Course content:
The existing course description is out of date. It was written in 1998.
Furthermore, when COSC 213 was approved in 2013, much of the server-relevant content moved from COSC 360 to that course (i.e. with technologies of PHP, MySQL);
The small amount of relevant content that remained was just two weeks of synchronous and asynchronous content, which has been moved to COSC 219, because it is needed for COSC 224. Students cannot wait to cover this content in third year:

> A follow-up course to COSC 219, this course examines different technologies that are used in the construction of a website focusing on the server-side technologies.

The "dynamic" nature of web-sites exists mostly on the client-side and is covered in COSC 219. Moving the two weeks of synch and async content completes the "dynamic" content in COSC 219.

> It uses advanced server-side technologies to create dynamic Web applications that derive information from a database.

The following sentence says, "This is a hard course ... just trust us."

> It familiarizes students with the challenges they face in building such applications and discusses different methods to efficiently overcome those challenges.

Bottom line? Students need to be ready to use cloud platforms in Cosc 470 and Cosc 471. These cloud technologies would include: Amazon Web Services, Digital Ocean, Microsoft Azure. The prevalent server-

side scripting technology is Node.js   An example of tools for "destructive engineering" would be Simian Tools from Netflix.

Changing this course makes the pathway through our web development courses more understandable:

Cosc 219 ... get my own resume-website working on my own cheap server

Cosc 360 ... learn about the reasons for putting one server on a cloud platform

Cosc 331 ... learn about the reasons for putting one enterprise application on multiple servers.

Implementation date: September 1, 2019

Cost: N/A

Motion: That Education Council approves the course revision: COSC 417 Topics in Computer Networks as recommended by the CPRC – STH:

COSC 417 – 3 – 5   Topics in Computer Networks

Course revision

- **Prerequisites**
- **Corequisites**

Rationale:

Three courses currently listed as "prerequisites" will be listed as "corequisites" (which includes the possibility of the course having already been completed).

In order for full-time students to graduate within 2 years of study, it is necessary to accommodate them in this manner. Currently, many waiver forms are being issued.

Prerequisites and corequisites:

	Existing	Proposed
Prerequisites	COSC 318* or COSC 328* or NTEN 317* *Minimum grade of 60 required	-
Corequisites	-	COSC 318 or COSC 328 or NTEN 317

Implementation date: September 1, 2019

Cost: N/A

Motion: That Education Council approves the course deletions as recommended by the CPRC – STH:

- COSC 119   Markup Languages and Productivity Software
- COSC 127   Computer Applications for Water Engineering Technology (WET)
- COSC 220   Software Evaluation and Selection
- COSC 250   Digital System Design
- COSC 350   Microprocessor Programming and Control

COSC 119 – 3 – 5   Markup Languages and Productivity Software
COSC 127 – 1 – 3   Computer Applications for Water Engineering Technology (WET)
COSC 220 – 3 – 4   Software Evaluation and Selection
COSC 250 – 3 – 5   Digital System Design
COSC 350 – 3 – 5   Microprocessor Programming and Control

Course deletions

Rationales:

COSC 119 – This course was last taught in 2004/05. When the B/CIS program was reduced to five courses per semester, this is one of the courses that was removed.

COSC 127 – This course was last taught in 2013. The Water Engineering program has revised their curriculum and now teaches their own "computer applications" course.

COSC 220 – Last taught in 2004/05. Not likely to be ever taught again.

COSC 250 – Last taught over 5 years ago. Not likely to be ever taught again by our Dept. The topic is now covered by ELEN Dept. (they do not wish to cross-list with COSC courses). NTEN now has several "Internet of Things"(IoT) courses. Dedicated labs not available to COSC Dept.

COSC 350 – Last taught over 5 years ago. Not likely to be ever taught again by our Dept. The topic is now covered by ELEN Dept. (they do not wish to cross-list with COSC courses). NTEN now has several "Internet of Things"(IoT) courses. Dedicated labs not available to COSC Dept.
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the program revision: Bachelor of Computer Information Systems Degree as recommended by the CPRC – STH:

Program revision
- **Addition of courses**
- **Revision of courses**
- **Deletion of courses**
- **Graduation requirements**

Rationale:
Three web-development courses updated with new course descriptions, two new mobile application courses added, four courses with minor revisions, and six courses deleted (have not been taught in the last five years or longer).
This program revision will change the outline of courses to be taken, making it much simpler to understand.

Addition of courses:
- COSC316 iOS Application Development
- COSC326 Android Application Development

Revision of courses:
- COSC 219 Client-side Web Systems
- COSC 224 Projects in Computer Science
- COSC 236 Object-Oriented Systems Analysis and Design
- COSC 320 Algorithms
- COSC 331 Microservices and Software Architecture
- COSC 360 Server Platform as a Service
- COSC 417 Topics in Computer Networks

Deletion of courses:
COSC 119, COSC 127, COSC 220, COSC 250, and COSC 350

Graduation requirements:

Existing Database Systems Option (Third and Fourth Year courses)	Proposed
BUAD 123 Management Principles	BUAD 123 Management Principles
COSC 404 Advanced Database Management Systems	COSC 404 Advanced Database Management Systems
COSC 416 Topics in Database	COSC 434 Database Administration
COSC 434 Database Administration	COSC 470 Software Engineering
COSC 470 Software Engineering	COSC 471 Software Engineering Project
COSC 471 Software Engineering Project	PHIL 331 Ethics of Computer Usage
PHIL 331 Ethics of Computer Usage	
	At least two of
One of:	COSC 416 Topics in Database
BUAD 335 Electronic Commerce	COSC 436 Data Warehousing
or COSC 331 Middleware Development	COSC 437 Data Mining
or COSC 341 User Experience	
or COSC 360 Server-Side Web Systems	At least one of:
	BUAD 335 Electronic Commerce
At least one of:	COSC 341 User Experience
COSC 318 Network Programming or COSC 328 Linux Networking	COSC 331 Microservices and Software Architecture
	COSC 360 Server Platform as a Service
	At least one of:

	COSC 318 Network Programming
At least one of: COSC 417 Topics in Computer Networks COSC 419 Topics in Computer Science Two three-credit courses (not already chosen) from: COSC 318 Network Programming COSC 328 Linux Networking COSC 331 Middleware Development COSC 360 Server-Side Web Systems COSC 417 Topics in Computer Networks COSC 419 Topics in Computer Science Eight other three-credit courses	COSC 318 Network Programming COSC 328 Linux Networking Plus a minimum of 6 upper-level COSC credits (not already chosen). Upper-level (courses numbered 300 or higher): at least 42 credits (of which a minimum 36 credits must be upper-level computer science). After completing the first two years, you must complete a total of 60 additional credits for the BCIS degree. These credits will include: PHIL 331 (required), at least six additional Arts credits, BUAD 123 (required) and at least three additional BUAD credits.
Existing Software Design and Development Option **(Third and Fourth Year courses)**	**Proposed**
BUAD 123 Management Principles COSC 341 User Experience COSC 470 Software Engineering COSC 471 Software Engineering Project PHIL 331 Ethics of Computer Usage At least one of: COSC 318 Network Programming COSC 328 Linux Networking One of: COSC 331 Middleware Development or COSC 360 Server-Side Web Systems Two of: COSC 404 Advanced Database Management Systems COSC 416 Topics in Database COSC 434 Database Administration At least one of: COSC 416 Topics in Database COSC 417 Topics in Computer Networks COSC 419 Topics in Computer Science Two three-credit courses (not already chosen) from: COSC 318 Network Programming COSC 328 Linux Networking COSC 331 Middleware Development COSC 360 Server-Side Web Systems COSC 417 Topics in Computer Networks COSC 419 Topics in Computer Science Eight other three-credit courses	BUAD 123 Management Principles COSC 470 Software Engineering COSC 471 Software Engineering Project PHIL 331 Ethics of Computer Usage At least one of: COSC 316 iOS Application Development COSC 326 Android Application Development At least one of: COSC 318 Network Programming COSC 328 Linux Networking At least one of: COSC 331 Microservices and Software Architecture COSC 360 Server Platform as a Service At least two of: COSC 404 Advanced Database Management Systems COSC 416 Topics in Database COSC 434 Database Administration COSC 436 Data Warehousing COSC 437 Data Mining Plus a minimum of 9 upper-level COSC credits (not already chosen). Upper-level (courses numbered 300 or higher): at least 42 credits (of which a minimum 36 credits must be upper-level computer science). After completing the first two years, you must complete a total of 60 additional credits for the BCIS degree. These credits will include: PHIL 331 (required), at least six additional Arts credits, BUAD 123 (required) and at least three additional BUAD credits.

Implementation date: September 1, 2019
Cost: N/A

Appendix 5.3
Curriculum recommended by the CPRC – BUS

Business

Motion: That Education Council approves the course revision: TOUR 200 Tourism CO-OP as recommended by the CPRC - BUS.

TOUR 200   **Tourism CO-OP**
Course revision:
- **Course title** – new title: **Tourism Sector Study**
- **Calendar description**
- **Prerequisites**
- **Contact hours**
- **Other – special note**

Rationale:
The rationale for this change is to remove the requirement of students to be enrolled in and successfully complete a co-op placement in order to successfully complete this course. We believe that there are a wider variety of experience that would satisfy the academic requirements of this course. These studies could be related to experiences gained through volunteering, or traveling and engaging with a variety of tourism business, or work for example. As such, the name and course description need to be changed to reflect this. The co-requisite of being enrolled in a co-op placement have been removed and the special note has been changed.

Calendar description:
Existing:
Workplace-based learning opportunities provide experiential leaning in the tourism sector. Students will practice the principles and skills learned during classroom studies and develop sector competencies. The Co-op experience connect the learner with sector managers and employees, building employment linkages, and establishing the foundations of an individual's career. Students complete their co-op under the guidance and direction of the employer and the college professor.
Proposed:
The tourism sector study course integrates academic learning with real world tourism sector experiences. Students will propose and execute a structured tourism study plan. These tourism sector studies provide the medium to explore, analyze, and integrate their prior learning with sector experiences related to the role and influence of business practices. Students will demonstrate their understanding of the principles and practices required to support the success and sustainability of businesses in the tourism sector.

Prerequisites:

Existing	Proposed
Enrollment in the Tourism Management Diploma and TOUR 105, BUAD 123, CMNS 112, and MATH 114.	Second year standing in the Tourism Management Diploma and TOUR 105, BUAD 123, CMNS 112, and MATH 114.

Contact hours:

	Existing hours	Proposed hours
Lecture	–	–
Lab	35	6
Seminar	–	–
Average weekly contact hours	35	6

Special note:
Students must propose a tourism sector study plan that meets the requirements of the course that is deemed suitable by their faculty advisor.
Implementation date: January 1, 2021
Cost: N/A

Motion: That Education Council approves the program revision: Tourism Management Diploma as recommended by the CPRC - BUS.

Program revision:
- **Graduation requirements**
- **Revision of courses**

Rationale:
The rationale for this change is to remove the requirement of students to be enrolled in and successfully complete a co-op placement in order to successfully complete TOUR 200. We believe that there are a wider variety of experience that would satisfy the academic requirements of this course. These studies could be related to experiences gained through volunteering, or traveling and engaging with a variety of tourism businesses, or work in the tourism sector for example. As such, the name and course description need to be changed to reflect this. The co-requisite of being enrolled in a co-op placement have been removed and the special note has been changed.

Students will be required to complete a CO-OP placement in order to graduate.

Graduation requirements:
Existing:
Successful completion of the prescribed and elective courses as listed in the program outline with a minimum graduating grade average of 60%.
Proposed:
Successful completion of the prescribed and elective courses as listed in the program outline with a minimum graduating grade average of 60%. Students are also required to successfully complete a co-op placement.

Revision of courses:
- **TOUR 200**

Program outline:

Existing	Proposed
Students must complete 60 credit hours as prescribed below: Required: TOUR 105 – Introduction to Tourism (3 credits) TOUR 130 – Tourism Marketing (3 credits) TOUR 200 – Tourism Co-op (6 credits) TOUR 209 – Tourism Law (3 credits) TOUR 240 – Services Design for Tourism (3 credits) BUAD 111 – Financial Accounting I (3 credits) BUAD 123 – Management Principals (3 credits) BUAD 128 – Computer Applications I (3 credits) BUAD 176 –Professional Sales (3 credits) BUAD 195 – Financial Management (3 credits) BUAD 200 – Digital Marketing (3 credits) BUAD 264 – Management Accounting (3 credits) BUAD 293 – Entrepreneurship (3 credits) CMNS 112 – Professional Writing 1 (3 credits) MATH 114 – Business Mathematics (3 credits) Plus four of: TOUR 215 – Restaurant Management (3 credits) TOUR 220 – Hotel Management (3 credits) TOUR 230 – Wine and Culinary Tourism (3 credits) BUAD 262 – Organizational Behaviour (3 credits) BUAD 269 – Human Resources Management (3 credits) TOUR 299 – Conventions Management (3 credits)	Students must complete 60 credit hours as prescribed below: Required: TOUR 105 – Introduction to Tourism (3 credits) TOUR 130 – Tourism Marketing (3 credits) **TOUR 200 – Tourism Sector Study (6 credits)** TOUR 209 – Tourism Law (3 credits) TOUR 240 – Services Design for Tourism (3 credits) BUAD 111 – Financial Accounting I (3 credits) BUAD 123 – Management Principals (3 credits) BUAD 128 – Computer Applications I (3 credits) BUAD 176 –Professional Sales (3 credits) BUAD 195 – Financial Management (3 credits) BUAD 200 – Digital Marketing (3 credits) BUAD 264 – Management Accounting (3 credits) BUAD 293 – Entrepreneurship (3 credits) CMNS 112 – Professional Writing 1 (3 credits) MATH 114 – Business Mathematics (3 credits) Plus four of: TOUR 215 – Restaurant Management (3 credits) TOUR 220 – Hotel Management (3 credits) TOUR 230 – Wine and Culinary Tourism (3 credits) BUAD 262 – Organizational Behaviour (3 credits) BUAD 269 – Human Resources Management (3 credits) TOUR 299 – Conventions Management (3 credits)

Existing Generic Requirements	Proposed Generic Requirements
The academic co-op work placement may require some or all of the following certifications to be completed prior to commencement: Serving it Right, Super Host, WHMIS, Food Safe, First Aid Level 1.	Successful completion of a Co-op Placement.

Implementation date: September 3, 2019
Cost: N/A

Motion: That Education Council approves the new course: VITT 125 Introduction to Viticulture and Wine as recommended by the CPRC – BUS.

VITT 125 – 3 – 6   Introduction to Viticulture and Wine
Rationale:
This course should provide a basic introduction to grape and wine topics. In the current course, some of the topics include advanced concepts, and, therefore, have been reallocated to subsequent courses. The students did not have enough background knowledge to discuss, in detail, grapevine propagation, nor were they equipped with the technical knowledge to understand the theoretical principles behind vineyard establishment. An overview on wine making technologies and wine styles was introduced. A wine sensory component was introduced. The students need to understand the connection between vineyard work and wine quality. Also, as an introductory course, VITT 130 can be taken as an elective by students from other departments. This course can serve as an exploratory way to learn more about a career in the wine industry.
Calendar description:
This course introduces the basic concepts of grape growing and winemaking. Seasonal vineyard practices, major grape cultivars, and basic wine making technologies are introduced. A general overview of the Canadian and international grape and wine industry is presented. This course includes a tasting lab component where varietal wines and wine styles from Canada and other major grape growing areas around the world are introduced. Basic wine appreciation concepts are discussed.
Course outline:

Course Number:	**VITT 125**
Course Title:	**INTRODUCTION TO VITICULTURE AND WINE**
Credits:	3
Calendar Description:	This course introduces the basic concepts of grape growing and winemaking. Seasonal vineyard practices, major grape cultivars, and basic wine making technologies are introduced. A general overview of the Canadian and international grape and wine industry is presented. This course includes a tasting lab component where varietal wines and wine styles from Canada and other major grape growing areas around the world are introduced. Basic wine appreciation concepts are discussed.
Semester and Year:	Fall 2019
Prerequisite(s):	
Corequisite(s):	None

Prerequisite to:	VITT 135, 140, 170, 220
Final Exam:	Yes
Hrs per week:	3 hours Lecture + 3 hours Lab/Field trip
Graduation Requirement:	Required
Substitutable Courses:	None
Transfer Credit:	Yes
Special Notes:	Must be over 19 to be accepted in the tasting component
Originally Developed:	2018
EDCO Approval:	
Chair's Approval:	Gabriel Balint

Professors

Name	Phone number	Office	Email
Gabriel Balint	250.762-5445 ext. 3402	PC234	gbalint@okanagan.bc.ca

Learning Outcomes

Upon completion of this course students will be able to:

1. **Recognize and discuss basic grapevine biology;** structure of the grapevine and physiological processes.
2. **Explain the difference among *Vitis* species, varieties and clones, and identify major varieties cultivated around the world.**
   Origin, usage, and characteristics of different *Vitis* species and hybrids that are cultivated commercially will be discussed. Details of main grapevine varieties that are cultivated in British Columbia, and main wine regions around the world, will be presented.
3. **Discuss seasonal operations in a vineyard and their impact on grape quality.** The action and timing of seasonal operations in a vineyard, e.g. training, pruning, de-suckering, shoot thinning, shoot positioning, hedging, leaf removal, and cluster thinning, will be outlined.
4. **Explain the major winemaking processes involved in producing various wine styles.** The differences between white, red, and rose winemaking processes will be explained. Various wine styles such as sparking and icewine will be described.
5. **Describe the important characteristics of the wine regions around the world.** Different wine regions throughout Canada and international locations will be identified and compared and their flagship wine styles and cultivars will be discussed and tasted.

Evaluation Procedure

Mid-term Exam	25%

2019 01 17 Curriculum to Education Council

Final Exam	35%
Assignments	15%
Term Project	25%
Total	100%

Notes

Final exam and midterm include: multiple choice, true/false, matching items, fill in the blank, and essays questions.

All students must be over 19 to be accepted in the tasting component class.

Final grades will be assigned as percentages. See the OC Calendar for letter grade equivalents. Students missing exams may be rescheduled only with a written medical excuse or written compassionate leave excuse (according to OC policy- see the calendar). Students are responsible for contacting their professor **prior** to exams for which they will be absent.

***All individual assignments must be your own work!

Field Trips: Participation on multiple field trips is required. These field trips will be during scheduled lab or lecture time. Transportation to the sites is the student's responsibility. Some out-of-class field work arranged by the student is also expected and should be conducted in pairs or groups for safety purposes.

Course Materials: This course will use Moodle platform as the main communication tool. Course materials such as lecture outlines and any other relevant course handouts will be made available on Moodle. It is also the responsibility of the students to check Moodle regularly for this material and any other pertinent course information and announcements.

If you are not familiar with the Moodle click on the link below.

http://webapps-1.okanagan.bc.ca/ok/support/moodle/MoodleStudentGuide.pdf

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Required Texts/Resources

Henderson, JP, and Rex, D (2011). About Wine. 2nd ed. Delmar Cengage Learning. 2011

British Columbia Ministry of Agriculture and Lands. (2010). Best practices guide for grapes for British Columbia growers. Peachland: British Columbia Wine Grape Council.

Insight Environmental Consulting Ltd. (2010). British Columbia sustainable winegrowing program. Peachland: British Columbia Wine Grape Council.

Additional required reading materials will be provided in class for class exercises

Recommended Reading

Hellman, E (2014, February 08). Parts of the grape vine: roots. Retrieved from eXtension: http://www.extension.org/pages/31099/parts-of-the-grape-vine:-roots#.VNJeO53F98F

Jackson, RS (2014). Wine science: Principles and applications. London: Academic Press.

Keller, M (2010). The science of grapevines. Anatomy and physiology. Burlington: Academic Press.

University of California. (2015). National grape registry. Retrieved from University of California Davis: http://ngr.ucdavis.edu/varietylist.cfm

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Winkler, AJ, Cook, JA, Kliewer, WM, & Lider, LA (1974). General viticulture. California: University of California Press.

Course Schedule

Date		Topic
Week	1	History and Geography of the BC and Canadian Grape and Wine Industry. Production, consumption, and current trends.
	1 Lab	Basic sensory appreciation. **Tasting component.**
	2	Overview of *Vitis* species, cultivars, clones, and rootstocks. Overview on grape propagation.
	2 Lab	Introduction to wine varietals and wine styles. **Tasting component.**
	3	Overview of vine structure and function, including terminology, canopy, and the root system. Principles of vineyard establishment. General vineyard production practices in Canada, including irrigation, fertilization, pruning, trellis system, canopy management, and pest management.
	3 Lab	**Field trip.** Visit two contrasting vineyards (location and practices).
	4	Canadian and International wine organizations, VQA, and legislation.
	4 Lab	Canadian wine styles and cool climate flagship varietals. **Tasting component.**
	5	Wine making Process. Discussion comparing red, white, and rose.
	5 Lab	**Field trip.** Visit a few local wineries. Collect materials for the project assignment.
	6	Sparkling and icewine technologies.
	6 Lab	Canadian sparkling and icewine appreciation. **Tasting component.**
	7	Midterm
	8	Wine Regions of France. Viticulture and winemaking perspective.
	8 Lab	Varietals and wine styles from France. **Tasting component.**
	9	Wine Regions of Spain and Portugal. Viticulture and winemaking perspective.
	9 Lab	Varietals and wine styles from Spain, Portugal, and Italy. **Tasting component.**
	10	Wine Regions from Germany, Austria, Hungary, Greece, and Romania. Viticulture and winemaking perspective.
	10 Lab	Varietals and wine styles from Germany, Austria, Switzerland Hungary, Greece, and Romania. **Tasting component.**
	11	Wine Regions from the Southern Hemisphere. Viticulture and winemaking perspective.
	11 Lab	Varietals and wine styles from the Southern Hemisphere. **Tasting component.**
	12	Wine Regions from South America. Viticulture and winemaking perspective.

	12 Lab	Varietals and wine styles from South America. **Tasting component.**
	13	Wine Regions from North America. Viticulture and winemaking perspective. Review
	13 Lab	Varietals and wine styles from North America. **Tasting component.**
	14/15	Exam Period

Course schedule is a combination of in-class, field trips, and lab sensory tasting.
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the new course: VITT 135 Grapevine Science as recommended by the CPRC – BUS.

VITT 135 – 3 – 6   **Grapevine Science**
Rationale:
This class will focus on the science of grapevines (i.e., plant metabolism, cultural practices, and fruit quality) and its influence on external factors and farming practices associated with commercial vineyards. These concepts are critical to managing grapevine physiology, yield controls, and fruit composition. A focus on ampelography, the study of identification and classification of grapevines, will provide a solid foundation to better understand the relationship between Vitis genotype and phenotype (i.e., species, cultivars, clones, and rootstock) and the environment.
Calendar description:
This course introduces the anatomy, morphology, and physiology of the grapevine species, cultivars, rootstocks, and clones. Additional topics covered include: the primary and secondary metabolites involved in fruit quality, the annual growth cycle, phenological phases, the process of berry ripening, and cold hardiness of grapevines. Ampelographic techniques used in grapevine identification will be introduced. In addition, the effect of terroir (external factors) on plant grapevine physiology and grape quality as well as propagation techniques and technologies will be discussed.
Prerequisites:
VITT 125
Course outline:

Course Number:	**VITT 135**
Course Title:	**GRAPEVINE SCIENCE**
Credits:	3
Calendar Description:	This course introduces the anatomy, morphology, and physiology of the grapevine species, cultivars, rootstocks, and clones. Additional topics covered include: the primary and secondary metabolites involved in fruit quality, the annual growth cycle, phenological phases, the process of berry ripening, and cold hardiness of grapevines. Ampelographic techniques used in grapevine identification will be introduced. In addition, the effect of terroir (external factors) on plant grapevine physiology and grape quality as well as propagation techniques and technologies will be discussed.

Semester and Year:	Winter 2020
Prerequisite(s):	VITT 125
Corequisite(s):	None
Prerequisite to:	VITT 150, 210, and 270
Final Exam:	Yes
Hrs per week:	3 Lecture + 3 Lab/Field trip
Graduation Requirement:	Required
Substitutable Courses:	None
Transfer Credit:	No
Special Notes:	
Originally Developed:	2018
EDCO Approval:	
Chair's Approval:	Gabriel Balint

Professors

Name	Phone number	Office	Email
Gabriel Balint	250.762.5445 ext. 3402	PC217	gbalint@okanagan.bc.ca

Learning Outcomes

Upon completion of this course students will be able to:

1. Identify and describe the structures and functions of plant cells and grapevines.
2. Describe grapevine physiological processes, including the effects of various abiotic and biotic factors.
3. Describe water and nutrient uptake and its implications on grape production.

4. Describe and identify the effects of water excess and drought on grapevine physiology.
5. Describe and apply the characteristics and timing of phenological stages using farm management techniques.
6. Describe the effect of cold weather on a grapevine bud and explain the measures taken to alleviate grapevine mortality.
7. Describe factors that impact grapevine yield and fruit composition.
8. Recognize grapevine cultivars and describe basic ampelographic characteristics.
9. Describe various propagation methods and execute multiple grafting techniques.

Evaluation Procedure

Mid-term Exam	20%
Final Exam	30%
Assignments	25%
Lab	25%
Total	100%

Notes

Final grades will be assigned as percentages. See the OC Calendar for letter grade equivalents.

Students missing exams may be rescheduled only with a written medical excuse or written

compassionate leave excuse (according to OC policy- see the calendar). Students are responsible for contacting their professor **prior** to exams for which they will be absent.

***All individual assignments must be your own work!**

Field Trips: Participation in multiple field trips is required. These field trips will be during scheduled lab or lecture time. Transportation to sites within a 5-mile radius of the Penticton campus is the responsibility of the student. Some out-of-class field work arranged by the student is also expected and should be conducted in pairs or groups for safety purposes.

***The lab component is an essential part of the course. Students are expected to attend each lab session with their textbook and lab manual. Some labs will reinforce and elaborate on lecture material, while other labs will introduce new material that is best presented in a laboratory setting. This material will not be covered in the lectures.

Course Materials: This course will use Moodle platform as the main communication tool. Course materials such as lecture outlines and any other relevant course handouts will be made available on Moodle. It is also the responsibility of the students to check Moodle regularly for this material and any other pertinent course information and announcements.

If you are not familiar with the Moodle click on the link below.

PASSING GRADE REQUIREMENT:

Student must obtain a passing grade (at least 50%) in the laboratory component of the course.

LABORATORY AND FIELD TRIP ATTENDANCE

Attendance of each lab period and field trip is mandatory. If you fail to attend a laboratory or field trip, we may not accept the corresponding assignments for evaluation. If you miss a lab or field trip due to illness, you must contact your professor as soon as possible. In that case, that lab will not count for or against you.

LATE ASSIGNMENTS:

All late assignments and laboratories will have 10% per day deducted from the final mark. The maximum number of overdue days in which work will be accepted is seven days. Any work not submitted within seven days will be marked as incomplete. Exceptional circumstances may be considered.

Required Texts/Resources

Keller, M (2010). The science of grapevines: Anatomy and physiology. Burlington: Academic Press.

Additional reading material for class exercises will be provided in class.

Recommended Reading

Dry, P & Coombe, B (2004). Viticulture 1 - Resources. 2nd edition. Adelaide: Winetitles.

Esau, K (1977). Anatomy of seed plants. New York, NY: Wiley.

Evert, RF (2006). Esau's plant anatomy: Meristems, cells and tissues of the plant body: Their structure, function and development. Hoboken, NJ: Wiley-Interscience.

Hellman, E (2012, April 16). Parts of the grape vine: Flowers and fruit. Retrieved from extension: http://www.extension.org/pages/31097/parts-of-the-grape-vine:-flowers-andfruit#.VLl9cSvF98F

Course Schedule

Date		Topic
Week	1	Welcome to Biology of the Grapevine Introduction to botanical classification and geographical distribution.
	1 Lab	Cells and vines; structure and function.
	2	Morphology and anatomy. Cultivars, clones, and rootstocks: ampelographic characteristics.
	2 Lab	Propagation methods; Grafting Techniques.

	3	Field trip.
	3 Lab	Gantt project planning.
	4	Osmosis, diffusion, and water uptake (water potential).
	4 Lab	Field trip.
	5	Water, nutrients, and transpiration; Isohydric versus non-isohydric varieties; Embolism; Plant growth regulators (hormones).
	5 Lab	Water, nutrients and transpiration. Water use efficiency.
	5	Phenological stages and growth cycle. Importance from a farming perspective.
	5Lab	Weather parameters and plant phenology.
	7	Midterm
	8	Photosynthesis and implication on fruit ripening and quality. Factors which affect photosynthesis.
	8 Lab	Grapevine Photosynthesis.
	9	Respiration. External factors that affect vine metabolism.
	9 Lab	Project presentations.
	10	Partitioning of assimilates and its implication on cold hardness.
	10 Lab	Cold hardness and bud mortality; Implications on pruning.
	11	Developmental physiology and grapevine adaptation.
	11 Lab	Factors that affect fruit composition and fermentation.
	13	Environmental constraints and stress physiology.
	12 Lab	Plant Stress.
	14	Living with other organisms - fungi, insects, birds, and mammals.
	14/15	Exam Period

Course schedule is a combination of in-class and field trips
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the new course: ONOL 210 Wine Chemistry and Microbiology as recommended by the CPRC – BUS.

ONOL 210 – 3 – 6   **Wine Chemistry and Microbiology**
Rationale:
Students and industry, particularly within the Okanagan Valley, both indicated that our graduates should have basic wine chemistry and microbiology knowledge. This course is designed to help our students meet the industry's expectation of wine chemistry and microbiology requirements, which will benefit our students and future employers.
Calendar description:
This course introduces the main chemical and microbiological processes involved in wine production. Through laboratory exercises, students gain hands-on experience with standard winery lab analyses and data interpretation. The role of different microorganisms in winemaking as well as natural versus inoculated fermentations are explored.
Prerequisites:
CHEM 151 and BIOL 160
Course outline:

Course Number:	**ONOL 210**
Course Title:	**Wine Chemistry and Microbiology**
Credits:	3
Calendar Description:	This course introduces the main chemical and microbiological processes involved in wine production. Through laboratory exercises, students gain hands-on experience with standard winery lab analyses and data interpretation. The role of different microorganisms in winemaking as well as natural versus inoculated fermentations are discussed.
Semester and Year:	Fall 2020
Prerequisite(s):	CHEM 151, BIOL 160
Corequisite(s):	
Prerequisite to:	
Final Exam:	Yes
Hrs per week:	3 Lecture and 3 Hours Lab
Graduation Requirement:	Required
Substitutable Courses:	None
Transfer Credit:	

Special Notes:	
Originally Developed:	2018
EDCO Approval:	
Chair's Approval:	Gabriel Balint

Professors

Name	Phone number	Office	Email
Gabriel Balint	250.762.5445 #3402	PC217	gbalint@okanagan.bc.ca

Learning Outcomes

Upon completion of this course students will be able to:

1. Describe berry and wine chemistry;
2. Perform standard chemical analyses in a wine lab and interpret the data;
3. Explain the microbiological/biochemical processes during winemaking;
4. Identify and describe the various microorganisms present during the winemaking process;
5. Describe the chemistry behind faulted wines. Identify causes and suggest solutions.

Evaluation Procedure

Attendance	10%
Mid-term Exam	25%
Final Exam	25%
Assignments	40%
Total	100%

Notes

This course requires faculty-facilitated, hands-on field experience in commercial vineyards/wineries to meet course learning outcomes. Students are required to participate in field experiences, which will occur during weekly course labs. Transportation to the sites is the responsibility of the student for field trips scheduled within the Penticton, Naramata, and Summerland areas. Some out-of-class field work arranged by the student is also expected and should be conducted in pairs or groups for safety purposes.

Meeting course learning outcomes may require adjustments to the sequence of activity in the course schedule in response to seasonal variation.

Course Materials: This course will use Moodle platform as the main communication tool. Course materials such as lecture outlines and any other relevant course handouts will be made available on Moodle. It is also the responsibility of the students to check Moodle regularly for this material and any other pertinent course information and announcements.

If you are not familiar with the Moodle click on the link below.

http://webapps-1.okanagan.bc.ca/ok/support/moodle/MoodleStudentGuide.pdf

Laboratory and Field Trip Attendance
Attendance of each lab period and field trip is mandatory. If you fail to attend a laboratory or field trip, we may not accept the corresponding assignments for evaluation. If you miss a lab or field trip due to illness, you must contact your professor as soon as possible. In that case, that lab will not count for or against you.

Required Texts/Resources
Waterhouse, AL, Sacks, GL, Jeffery, DW (2016). Understanding Wine Chemistry. John Willey and Sons, Chichester, UK.
Bird, J (2010). Understanding Wine Technology: The Science of Wine Explained
Iland, P, Grinbergs, M, Schmidtke, L, Soden, A (2013). Chemical analysis of grapes and wine: techniques and concepts. PATRICK ILAND WINE PROMOTIONS PTY LTD
Iland, P, Grinbergs, M, Schmidtke, L, Soden, A (2007). Microbiological analysis of grapes and wine: techniques and concepts. PATRICK ILAND WINE PROMOTIONS PTY LTD

Course Schedule

Date		Topic
Week	1	Introduction; pre-harvest analyses; legal requirements for grapes.
	2	BC VQA law/requirements.
	3	Berry and Wine chemistry (acidity, pH, carbohydrates).
	4	Berry and Wine chemistry (pigments and polyphenolic compounds).
	5	Berry and Wine chemistry secondary metabolites – aroma volatiles (terpenes, phenolics, norisoprenoids).
	6	Berry and Wine chemistry (nitrates, proteins, lipids, pectins, enzymes).
	7	Midterm Exam
	8	Additives used in the winemaking process.
	9	Wine microbiology overview; taxonomy; history.
	10	Bacteria (morphology and physiology).
	11	Bacteria genera and their implication in winemaking.
	12	Yeast history; taxonomy, morphology and physiology.
	13	Wild yeast vs commercial yeast; fermentation conditions; wine styles.
	14	Review
	15	Exam

Course schedule is a combination of in-class, field trips and labs
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the new course: ONOL 230 Winery Operations as recommended by the CPRC – BUS.

ONOL 230 – 3 – 6 **Winery Operations**
Rationale:
This course will provide students with the knowledge to safely operate winery equipment and machinery. This class is offered in conjunction with the other VITT and ONOL classes. The students need to learn all the technological process sequence from crushing to bottling.
Calendar description:
This course focuses on the theoretical and practical aspects of the annual wine production cycle (i.e., winery procedures and the equipment used in a modern commercial winery). Equipment and practices used for making different wine styles, sanitation, and safety procedures used in a commercial winery are introduced and demonstrated.
Prerequisites:
VITT 220 and ONOL 210
Course outline:

Course Number:	**ONOL 230**
Course Title:	**Winery Operations**
Credits:	3
Calendar Description:	This course focuses on the theoretical and practical aspects of the annual wine production cycle (i.e., winery procedures and the equipment used in a modern commercial winery). Equipment and practices used for making different wine styles, sanitation, and safety procedures used in a commercial winery are introduced and demonstrated.
Semester and Year:	Winter 2021
Prerequisite(s):	VITT 220, ONOL 210
Corequisite(s):	
Prerequisite to:	
Final Exam:	Yes
Hrs per week:	3 Lecture and 3 Hours Lab
Graduation Requirement:	Required
Substitutable Courses:	None
Transfer Credit:	

Special Notes:	
Originally Developed:	2018
EDCO Approval:	
Chair's Approval:	Gabriel Balint

Professors

Name	Phone number	Office	Email
Gabriel Balint	250.762.5445 #3402	PC217	gbalint@okanagan.bc.ca

Learning Outcomes

Upon completion of this course students will be able to:

1. Recognize possible safety hazards at a winery and take steps to eliminate them;
2. Describe the different operations involved in a winery cellar;
3. Explain the functions of each piece of equipment used in a winery cellar;
4. Assess and implement procedures to ensure winery sanitation and safety;
5. Explain how to clean and maintain the winery and its equipment;
6. Describe the winemaking process from grape to bottle.

Evaluation Procedure

Attendance	10%
Mid-term Exam	25%
Final Exam	25%
Assignments	40%
Total	100%

Notes

This course requires faculty-facilitated, hands-on field experience in commercial vineyards/wineries to meet course learning outcomes. Students are required to participate in field experiences, which will occur during weekly course labs. Transportation to the sites is the responsibility of the student for field trips scheduled within the Penticton, Naramata, and Summerland areas. Some out-of-class field work arranged by the student is also expected and should be conducted in pairs or groups for safety purposes.
Meeting course learning outcomes may require adjustments to the sequence of activity in the course schedule in response to seasonal variation.

Course Materials: This course will use Moodle platform as the main communication tool. Course materials such as lecture outlines and any other relevant course handouts will be made available on Moodle. It is also the responsibility of the students to check Moodle regularly for this material and any other pertinent course information and announcements.
If you are not familiar with the Moodle click on the link below.
http://webapps-1.okanagan.bc.ca/ok/support/moodle/MoodleStudentGuide.pdf

Laboratory and Field Trip Attendance

Attendance of each lab period and field trip is mandatory. If you fail to attend a laboratory or field trip, we may not accept the corresponding assignments for evaluation. If you miss a lab or field trip due to illness, you must contact your professor as soon as possible. In that case, that lab will not count for or against you.

Required Texts/Resources
Bird, J (2010). Understanding Wine Technology: The Science of Wine Explained.
Boulton, R, Singleton. VL, Bisson, LF, Kunkee, RE (2010). Principles and Practices of Winemaking, Springer.
Butzke, CE (2018). Winemaking Problems Solved, Second Edition (Woodhead Publishing Series in Food Science, Technology and Nutrition)
Margalit, Y (2012). Concepts in Wine Technology, Publisher. Wine Appreciation Guild
Storm, DR (2001). Winery Utilities: Planning, Design and Operation, Kluwer Academic, NY

Course Schedule

Date		Topic
Week	1	Introduction; WorkSafe BC Act and Regulations relevant to commercial wineries.
	2	Occupational health and safety regulations in the workplace for commercial wineries.
	3	Control of common hazards and risks in a commercial winery; and emergency procedure plans.
	4	Winery layout, plan, design, and operation.
	5	Pre-harvest winery preparation.
	6	Red and white wine, rose, sparkling, and icewine technology and equipment.
	7	Winemaking equipment maintenance and troubleshooting.
	8	Heating and cooling applications.
	9	Midterm Exam
	10	Winery microbiology and sanitation.
	11	Wine stability, fining, and clarification.
	12	The maturation and aging of wines.
	13	Bottling and shipping management.
	14	Review
	15	Exam

Course schedule is a combination of in-class, field trips and labs
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: VITT 140 Viticulture Technology as recommended by the CPRC – BUS.

VITT 140 – 3 – 6   **Viticulture Technology**
Course revision:
- **Title** – new title – **Vineyard and Canopy Establishment**
- **Calendar description**
- **Prerequisites**
- **Content**

Rationale:
Based on the experience from the first year of the program, this class required some revision in order for the learning outcomes to correlate with the sequence of operations in the industry. The course has been moved to the winter semester to allow the instructor an adequate teaching environment, such as pruning. Vineyard establishment has been removed from previous VITT 130 and added VITT 140. The revision reflects vineyard seasonal operations and will better serve the course learning outcomes.

Calendar description:
Existing:
This course provides the theoretical knowledge and experiential training to understand viticulture technology requirements in pruning, seasonal canopy practices, ripeness testing and harvesting methods.
Proposed:
This course focuses on the decision making factors involved within a commercial vineyard establishment. Principles of propagation are introduced and various techniques are demonstrated. Topics such as current design, trellis, material calculation, and training system practices related to the planting and maintenance of commercial vineyards are discussed. Canopy management techniques such as pruning, shoot thinning, shoot positioning, leaf removal, and crop thinning are discussed and demonstrated.

Prerequisites:

Existing	Proposed
-	VITT 125

Course content:
The following topics have been added: vineyard establishment, vineyard training, and trellis systems. Harvesting methods topics have been removed.
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: VITT 150 Vineyard Health and Nutrition as recommended by the CPRC – BUS.

VITT 150 – 3 – 6   **Vineyard Health and Nutrition**
Course revision:
- **Title** – new title – **Integrated Pest Management**
- **Calendar description**
- **Prerequisites**
- **Content**
- **Contact hours**

Rationale:
The current course includes a mix of topics related to both nutrient and plant health. The program requires the topics to be reorganized. The revised version will focus only on organisms that are considered pests (vertebrates, insects, viruses, bacteria, fungi, weeds) and have a negative impact on the vine and fruit quality. The nutrient topic has been moved to VITT 220.

Calendar description:
Existing:
Symptoms of insect, disease and vertebrate pest damage and nutritional deficiency and toxicity will be introduced. In addition, grapevine nutritional requirements, vineyard fertilizer timing and application, and weed identification and management will be explained

Proposed:

This course introduces the concept of integrated pest management (IPM). Different groups of pests affecting vineyard production including insects, acarids, nematodes, plant pathogens, vertebrate pests, weeds, and abiotic stresses are discussed. The concepts of thresholds, pesticide activity, resistance management, disease cycles, environmental impacts, application technology, and organic production methods are introduced. Strategies associated with the management of complex pest control issues and the subsequent actions required to address the vineyard health are reviewed.

Prerequisites:

Existing	Proposed
VITT 130	VITT 135

Course content:

The nutritional component has been removed. All other topics will have an IPM (integrated pest management) component.

Contact hours:

	Existing	Proposed
Lecture	3	6
Lab	3	6
Seminar	-	-
Average weekly contact hours	6	12

Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: VITT 160 Irrigation and Trellis Systems for Vineyards as recommended by the CPRC – BUS.

VITT 160 – 3 – 6   **Irrigation and Trellis Systems for Vineyards**
Course revision:
- **Title – new title – Irrigation Technology and Water Management**
- **Calendar description**
- **Prerequisites**
- **Content**
- **Contact hours**

Rationale:

The current version of this course contains topics that are not related to irrigation, while other topics related to irrigation are part of another VITT course. In the revised program, we have moved trellis topics to Vineyard and Canopy Establishment (VITT 140). Also, water management topics from VITT 220 have been moved to Irrigation Technology and Water Management (VITT 160). From a learning outcome perspective, the students will benefit from having all water topics in one course. In addition, this course will be delivered in spring/summer in order provide maximum hands-on experience for the students.

Calendar description:

Existing:

This course introduces the requirements for, and the construction, installation, inspection, maintenance and repair of irrigation systems, as well as the construction and maintenance of trellis systems for grapevines.

Proposed:

This course introduces the requirements, construction, installation, inspection, maintenance, and repair of irrigation systems. Different soil and plant water status parameters will be explored. The effect of drought on vine physiology, fruit quality, and water efficiency will be presented. Sustainability concepts will be discussed, and the various organizations involved in water management will be introduced.

Prerequisites:

Existing	Proposed
VITT 130	VITT 170

Course content:

Water management topics have been added, and trellis construction and maintenance topics have been reallocated.

Contact hours:

	Existing	Proposed
Lecture	3	6
Lab	3	6
Seminar		
Average weekly contact hours	6	12

Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: VITT 170 Vineyard Operations as recommended by the CPRC – BUS.

VITT 170 – 3 – 6   **Vineyard Operations**
Course revision:
- **Title** – new title – **Vineyard Technologies and Operations**
- **Calendar description**
- **Prerequisites**
- **Content**

Rationale:
The course followed minor revision to better reflect the course content. Based on previous experience delivering this course, some additional topics such as spraying certificate training have been added.

Calendar description:
Existing:
This course provides an overview of vineyard operations. The principles and practices involved in vineyard operation for commercial grape growing, including safety, tools equipment and machinery, will be reviewed and demonstrated.
Proposed:
This course provides an overview of vineyard operations. The principles and practices involved in vineyard operation for commercial grape growing including safety practices, tools, equipment, and machinery are reviewed theoretically and demonstrated. BC safety legislation as well as provincial and regional safety organizations are introduced. Spraying certification and new vineyard technologies are explored.

Prerequisites:

Existing	Proposed
VITT 140	VITT 125

Course content:
Topics such as spraying and forklift certification, remote sensing, software management, and various useful applications were added.

Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: VITT 210 Soil and Water Management for Vineyards as recommended by the CPRC – BUS.

VITT 210 – 3 – 6   **Soil and Water Management for Vineyards**
Course revision:
- **Title** – new title – **Soil Management and Plant Nutrition**
- **Calendar description**
- **Prerequisites**
- **Content**

Rationale:
This course required minor revision to bring benefit for both students and pedagogical sequence. One topic was removed (water management) while plant nutrition was added.

Calendar description:
Existing:

This course will focus on the analysis of physical, chemical and biological characteristics of soil for the determination of site suitability. Attention will be given to the determination and management of soil health, erosion prevention strategies and the operation of a soil management program. Irrigation and drainage design principles will be presented and irrigation control systems will be discussed. In addition fertilizer applications to meet the nutritional requirements of the grapevine will be presented.
Proposed:
This course introduces sustainable management practices that relate to soil health including the principles of soil structure, soil chemistry, organic matter management, and vine nutrition management. Erosion prevention strategies and the implementation of a soil management program are presented. Drainage design principles are reviewed as well as the relationship between soil fertility and fruit quality. Soil and tissue mineral lab data are interpreted. In addition, nutrition management plans for organic and conventional vineyards are discussed.
Prerequisites:

Existing	Proposed
VITT 160	VITT 135

Course content:
Water management has been moved to VITT 150 (Irrigation technology and water management), while plant nutrition topics have been added to this course.
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: VITT 220 Grape Harvest and Sensory Principles as recommended by the CPRC – BUS.

VITT 220 – 3 – 6   **Grape Harvest and Sensory Principles**
Course revision:
- **Calendar description**
- **Prerequisites**
- **Content**

Rationale:
This course requires additional scientific knowledge to better understand the difference between wine appreciation and scientific sensory techniques and procedures.
Calendar description:
Existing:
This course provides a theoretical grounding on harvest and sensory principles for viticulture. Sampling of grapes for maturity, harvest techniques, and harvest operations and equipment will be covered. Optimal conditions for sensory evaluation will be reviewed and evaluated. Learners will assess different wine sensory characteristics and learn how to distinguish which originate from grapes or from the wine-making process, and which can be described as wine faults.
Proposed:
This course provides a theoretical foundation of harvest and sensory principles for viticulture. Sampling grapes for maturity, harvest techniques, and harvest operations and equipment are covered. Wine appreciation as well as quantitative and qualitative wine assessment concepts are introduced. Different wine styles and how to distinguish primary, secondary, and tertiary aromas are reviewed and experienced. BC wine varietals are examined to understand the terroir concept. Wine faults are explained, along with the relationship between sensory characteristics and viticulture practices.
Prerequisites:

Existing	Proposed
VITT 150; 160; 170	VITT 125

Course content:
An additional learning outcome was introduced. Students will be introduced (in detail) to quantitative and descriptive techniques used by the wineries.
Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: VITT 250 Vineyard Management as recommended by the CPRC – BUS.

VITT 250 – 3 – 6   **Vineyard Management**
Course revision:
- **Calendar description**
- **Prerequisites**

Rationale:
This course is a summation of the knowledge that learners accumulate over the program; therefore, VITT 140, 150, and 160 are appropriate pre-requisites for this course.

Calendar description:
Existing:
This course will examine day-to-day commercial vineyard operations. Learners examine how to manage risk and assets, and how to create and manage a safe and positive workplace. Planning for vineyard development and seasonal operations and performing appropriate measurements will be reviewed and evaluated. Management of insects, weeds, diseases and pests will be discussed, as will green initiatives and sustainable farming practices. Methods on how to forecast yield will be reviewed, along with new and emerging technologies used to improve viticulture management.

Proposed:
This course examines daily commercial vineyard operations. Risk and asset management, vineyard development planning, and seasonal operations including appropriate measurements to ensure vineyard health are examined. The management of insects, weeds, diseases, and pests are reviewed as well as green initiatives and sustainable farming practices. Yield forecasting methods and new and emerging technologies used to improve viticulture management are also discussed.

Prerequisites:

Existing	Proposed
VITT 210 and VITT 220	VITT 140, 150, 160

Implementation date: September 1, 2019
Cost: N/A

Motion: That Education Council approves the course revision: VITT 270 Viticulture Capstone Project as recommended by the CPRC – BUS.

VITT 270 – 3 – 3   **Viticulture Capstone Project**
Course revision:
- **Title – new title – Applied Research in Viticulture**
- **Calendar description**
- **Prerequisites**
- **Corequisites**
- **Content**

Rationale:
The current course requires research data that need to be collected, analyzed, and interpreted over four months. Under the current format, the students are not able to meet the learning outcomes due to lack of data available and the structure of the entire program. However, students can benefit from debating various research papers that include diverse topics with an interest for the local industry.

Calendar description:
Existing:
This course provides a culminating experience for learners and is designed to integrate the knowledge and skills from the Viticulture Technician Coop diploma program, to gain insight into the meanings of professional practice and to reflect on the norms of the disciplines studied. Learners will work in teams investigating a real-world viticulture challenge providing the opportunity to apply their knowledge and skills under the direction of the professor and an industry mentor.

Proposed:

This course provides a culminating experience for learners and is designed to integrate the knowledge and skills from the Viticulture Technician Diploma program. Peer-reviewed research papers relevant to the BC wine industry are critically evaluated. The most current issues, possible solutions, research trends, the norms of the disciplines studied, and the meaning of professional viticulture practices are discussed.

Prerequisites and corequisites:

	Existing	Proposed
Prerequisites	VITT 220	VITT 210
Corequisites	-	VITT 250

Course content:
Students will not be asked to present their own research project, but rather to prepare a critical research review on current issues within the BC wine industry. Also, the time allocated to seminars will require students to connect with local winemakers and vineyard managers to discuss wine industry issues and their approach to solve them.

Implementation date: September 1, 2019

Cost: N/A

Motion: That Education Council approves the program revision: Viticulture Technician Diploma as recommended by the CPRC – BUS.

Program revision:
- **Calendar description**
- **Admission requirements**
- **Graduation requirements**
- **Addition of courses**
- **Revision of courses**
- **Deletion of courses from the program**
- **Resequencing of courses**

Rationale:
The current Viticulture Technician Diploma is a two-year Pilot Delivery Program (September 2017 - April 2019). The original Program was developed by Okanagan College in conjunction with wine industry experts for the BCWGC, in response to the grape and wine industry current and future labour needs. Since the local industry is evolving at a high rate, it has difficulties in finding local well trained and educated employees with appropriate practical experience, technological skills, and scientific, mathematical, and human resource knowledge. After the first academic year, the faculty of the Viticulture Department identified a number of discordant attributes of the current program, both in the structure and delivery. In order to keep the initial mandate of the program, to provide hands on, theoretical, and practical knowledge to the students, to meet both academic requirements and industry needs, a program revision was needed.

Due to the size and structure of the current BC wine and grape industry, along with many inquiries received from the current and prospective students on learning more about wine, two additional wine related courses are proposed for the new revised program.

Calendar description:
The Viticulture Technician Diploma is designed to deliver a quality learning experience for those interested in a career in the local or international grape and wine industry. The program will provide hands-on, theoretical, and practical knowledge to work as part of the vineyard/winery management team to plan, develop, plant, and maintain a vineyard for the production of quality wine. The program is tailored around "the vine to wine concept", which will allow students to understand how to produce the best quality wines from the ground to the bottle. The diploma program is structured around the viticulture growing season, providing opportunities to develop and apply skills leading to sustainable practices within commercial vineyards.

The program benefits from its supportive local industry, the diverse mesoclimates within the Okanagan Valley, and national and international award-winning wineries. An exciting aspect of working in a vineyard is that nothing is routine, as nature and the vines exert their influence, creating an ever changing environment. Students will be exposed to this dynamic environment of viticulture and oenology, developing a range of skills and knowledge, including canopy management, pest control, pruning, training vines, sensory evaluation, occupational health and safety, operating equipment, harvesting and wine making. An integral aspect of the diploma is a paid co-op term to ensure students have a comprehensive understanding of the

production practices and processes that enable employment within the industry. The co-op term will provide students with both vineyard and winery pre-crush experience.

This program provides students a stimulating and unique environment for training, supported by exposure to the latest technologies and mentorship from local experts with global backgrounds (i.e., Canada, USA, Australia, New Zealand, France, and Italy).

Career Opportunities:

- Laboratory or Viticulture Technician
- Vineyard Manager
- Winery or Cellar Technician
- Winemaker
- Vineyard and Winery Equipment Sales Representative
- Vineyard R&D Technician
- Wine Sales and Promotion

Admission requirements:

Existing	Proposed
English 12 with minimum 60% or alternatives. Biology 11 or ABE equivalent. Math - minimum of 67% in any of: Pre-calculus Grade 11 Foundations of Mathematics Grade 11 Principles of Mathematics 11 Adult Basic Education MATH 011 Adult Basic Education MATH 084 and MATH 085 Adult Basic Education IALG 011 Mature applicants who are at least 19 years of age and have been out of full-time senior secondary study for at least one year may have the senior secondary graduation requirement waived. Mature applicants without English 12 can write the LPI and must receive a minimum score of level 4. Mature applicants without Mathematics 11 must meet one of the following mathematics requirements: A minimum score of 67% on the Mathematics 11 proficiency exam; or A minimum score of 16/25 on the Mathematics diagnostic test	English 12 with minimum 60% or alternatives. Biology 11 or ABE equivalent Chemistry 11 (recommended) Math - minimum of 67% in any of: Pre-calculus Grade 11 Foundations of Mathematics Grade 11 Principles of Mathematics 11 Adult Basic Education MATH 011 Adult Basic Education MATH 084 and MATH 085 Adult Basic Education IALG 011 Mature applicants who are at least 19 years of age and have been out of full-time senior secondary study for at least one year may have the senior secondary graduation requirement waived. Mature applicants without English 12 can write the LPI and must receive a minimum score of level 4. Mature applicants without Mathematics 11 must meet one of the following mathematics requirements: A minimum score of 67% on the Mathematics 11 proficiency exam; or A minimum score of 16/25 on the Mathematics diagnostic test Mature applicants with long farming experience or enrolled in the part time modules may have the admission requirements waived. Students must be physically able to safely perform the tasks required in the vineyard and winery, which will include pruning, lifting, climbing, bending, stretching, twisting, crawling and moving, lifting, carrying, pushing and pulling items weighing up to 50 lbs. Students will be required to taste, smell, and check for optical clarity of wine as well as visually inspect and sort wine grapes - checking for diseases and insects - during the growing season through harvest.

Graduation requirements:

Existing	Proposed
Successful completion of the prescribed and elective courses as listed in the program outline with a minimum graduating grade average of 60%. A minimum of 50% of the program must be completed through Okanagan College. VITT 220 and VITT 270 are required residency courses.	Successful completion of the prescribed and elective courses as listed in the program outline with a minimum graduating grade average of 60%. A minimum of 50% of the program must be completed through Okanagan College. VITT 220 and VITT 270 are required residency courses. Students are also required to successfully complete a co-op placement.
Year 1 Fall VITT 130 Introduction to Viticulture VITT 140 Viticulture Technology BIOL 120 The Biology of the Grapevine GEOG 110 The Geography of Viticulture One of: MATH 112 Calculus I MATH 120 Pre-Calculus MATH 122 Calculus II STAT 121 Elementary Statistics	**Year 1 Fall Semester 1** GEOG 110 Geography of Viticulture MATH 125 Mathematics for Viticulture CMNS 102 Professional Communication for Viticulture VITT 125 Introduction to Viticulture and Wine BIOL 160 Introductory Biology for Viticulture
Year 1 Winter VITT 150 Vineyard Health and Nutrition VITT 160 Irrigation and Trellis Systems for Vineyards VITT 170 Vineyard Operations One of (not incl. course taken previously): MATH 112 Calculus I MATH 120 Pre-Calculus MATH 122 Calculus II STAT 121 Elementary Statistics One of: CMNS 112 Professional Writing I CMNS 122 Professional Writing II ENGL 100 University Writing	**Year 1 Winter Semester 2** GEOG 206 Intro. to Soil Science CHEM 151 Intro. to Chemistry for Viticulture VITT 135 Grapevine Science VITT 170 Vineyard Technologies and Operations VITT 140 Vineyard and Canopy Establishment
Year 1 Summer VITT 200 VITT Co-op Work Term	**Year 1 Summer Semester 3** VITT 150 Integrated Pest Management VITT 160 Irrigation Technology and Water Management
Year 2 Fall VITT 210 Soil and Water Management for Vineyards VITT 220 Grape Harvest Sensory Principles GEOG 206 Introduction to Soil Science BUAD 123 Management Principles One three-credit elective*	**Year 1 Summer/Fall Semester 4 (June-September)** VITT Co-op Work Term
Year 2 Winter VITT 250 Vineyard Management VITT 270 Viticulture Capstone Project BIOL 251 Vascular Plants One of (not incl. course taken previously): CMNS 112 Professional Writing I CMNS 122 Professional Writing II ENGL 100 University Writing	**Year 2 Fall Semester 5** VITT 210 Soil Management and Plant Nutrition VITT 220 Grape Harvest and Sensory Principles ONOL 210 Wine Chemistry and Microbiology
	Year 2 Winter Semester 6 BUAD 123 Management Principles ONOL 230 Winery Operations VITT 250 Vineyard Management VITT 270 Applied Research in Viticulture One three-credit elective*
	* Examples of electives (3 credits total): BIOL 220 Introductory Biochemistry BUAD 206 The Business of Tourism BUAD 230 Wine and Culinary Tourism

One three-credit elective*	GEOG 111 Introduction to Physical Geography:
* Examples of electives (6 credits total):	Climate & Vegetation
BIOL 111 Biology for Science Majors I	GEOG 121 Introduction to Physical Geography:
BIOL 121 Biology for Science Majors II	Water & Landscapes
BIOL 251 Vascular Plants	GEOG 172 Map Use, Design, and Analysis
BIOL 228 Introductory Microbiology	GEOG 201 Food and Society
BIOL 224 Principles of Genetics	GEOG 213 Geography of Wine
BIOL 220 Introductory Biochemistry	GEOG 265 Tourism and Recreation Geography
BUAD 206 The Business of Tourism	GEOG 272 Introduction to Cartography, GIS and
BUAD 230 Wine and Culinary Tourism	Remote Sensing
CHEM 111 Principles of Chemistry I	GEOG 274 Introduction to GIS Analysis
CHEM 121 Principles of Chemistry II	SPAN 111 Spanish I
CHEM 112 Introductory Chemistry I	SPAN 121 Spanish II
CHEM 122 Introductory Chemistry II	
CHEM 212 Organic Chemistry I	
CHEM 222 Organic Chemistry II	
GEOG 111 Introduction to Physical Geography:	
Climate & Vegetation	
GEOG 117 Introduction to Human Geography I	
GEOG 127 Introduction to Human Geography II	
GEOG 121 Introduction to Physical Geography:	
Water & Landscapes	
GEOG 172 Map Use, Design, and Analysis	
GEOG 201 Food and Society	
GEOG 213 Geography of Wine	
GEOG 265 Tourism and Recreation Geography	
GEOG 272 Introduction to Cartography, GIS and	
Remote Sensing	
GEOG 274 Introduction to GIS Analysis	
PHYS 112 Introductory Physics I	
SPAN 111 Spanish I	
SPAN 121 Spanish II	

Addition of courses:
MATH 125 Mathematics for Viticulture
CMNS 102 Communications for Viticulture
BIOL 160 Introductory Biology for Viticulture.
CHEM 151 Introductory Chemistry for Viticulture
VITT 125 Introduction to Viticulture and Wine
VITT 135 Grapevine Science
ONOL 210 Wine Chemistry and Microbiology
ONOL 230 Winery Operations
Revision of courses:
VITT 140 Vineyard and Canopy Establishment
VITT 150 Integrated Pest Management
VITT 160 Irrigation Technology and Water Management
VITT 170 Vineyard Technologies and Operations
VITT 210 Soil Management and Plant Nutrition
VITT 220 Grape Harvest and Sensory Principles
VITT 250 Vineyard Management
VITT 270 Applied Research in Viticulture
Deletion of courses from program:
MATH 112/120/121; STATS 121; CMNS 112/122; ENGL 100; BIOL 120/251

Resequencing of courses:

Existing	Proposed
Semester 1: GEOG 110, MATH 112/120/121/122, BIOL 120, VITT 130, VITT 140	Semester 1: GEOG 110, MATH 125, CMNS 102, VITT 125, BIOL 160
Semester 2: VITT 150, VITT 160, MATH 112/120/122 or STAT 121, CMNS 112/122 or ENGL 100, VITT 170	Semester 2: CHEM 151, GEOG 206, VITT 135, VITT 140, VITT 170
Semester 3: VITT 200	Semester 3: VITT 150, VITT 160
Semester 4: VITT 210, VITT 220, GEOG 206, BUAD 123, 1 elective	Semester 4: VITT Co-op work term
Semester 5: VITT 250, VITT 270, BIOL 251, 2 electives	Semester 5: VITT 210, VITT 220, ONOL 210
-	Semester 6: ONOL 230, VITT 250, VITT 270, BUAD 123, 1 elective

Implementation date: September 1, 2019
Cost: N/A

Appendix 5.4
Standing Committee Reports

Appendix 5.5
In Camera Session

Motion: "That Education Council moves in camera."

Appendix 6.0
Reports