## MINUTES OF THE MEETING OF THE GRADUATE ACADEMIC POLICIES AND PROCEDURES COMMITTEE February 17, 2020

The Graduate AP&P Committee met on Monday, February 17, 2020 at 3:00 p.m. in IG Greer 224.

**Members present:** Victor Mansure, Sandi Lane, Jennifer McGee, Tim Forsyth, Jonathon Stickford, Ray Williams, Gary McCullough, Katherine Ledford, David Shows, Agnes Gambill, Tracy Smith, Will Canu, Dru Henson, Brad Nash, Susan Staub, Terry McClannon, Tanga Mohr,

Administrative Staff and Guests: Mike McKenzie, Marie Hoepfl, Eric Berry, Debbie Race, Lisa Houser (for Ben Powell), Denise Brewer (RCOE), Woody Trathen (RESE), Jim Stoddard (MKT), Pamela Shue (FCS), Mark Bradbury (CAS), Pavel Osinsky (Faculty Senate), Laura Padgett (GAPP Coordinator)

Absent: Jeff Ramsdell, Dalton Sizemore, Janice Pope, James Douthit, Claudia Fernandez, Dontrell Parson, Karen Fletcher, Debbie Race, Dale Wheeler, Sandy Vannoy

## 1. CALL TO ORDER

Chairperson Staub called the meeting to order at 3:00 p.m. She asked guests to introduce themselves (see list above).

#### 2. APPROVAL OF THE MINUTES

Chairperson Staub reports that the minutes of the January meeting will be ready for approval at the March meeting.

## 3. ANNOUNCEMENTS/FIOS

Chairperson Staub announced that this item will be moved to the end of the meeting following the votes for curriculum proposals.

## 4. NEW BUSINESS:

#### A. CURRICULUM PROPOSALS

College of Arts & Sciences

## **Department of Biology**

GU_CAS_BIO_2019_03	Add a dual-listed course BIO 4582 / BIO 5582 (The Biology of Cancer).
G_CAS_BIO_2019_04	Change the course description, number of credit hours, and semester offering for BIO 6989 (Independent Research).
G_CAS_BIO_2019_05	Change the POS for the MS in Biology - Cell and Molecular Biology Concentration (MS 207B).

G_CAS_BIO_2019_06	Change the POS for the MS in Biology - General Biology Concentration (MS_207C).
G_CAS_BIO_2019_07	Change the POS for the MS in Biology - Ecology and Evolutionary Biology Concentration (MS 207D).

**MOTION 1:** There was a motion from the Curriculum Subcommittee to approve the proposals. Chairperson Staub suggested voting on proposals 3 - 7 as a group. A vote was taken. **Motion passed.** 

## **Reich College of Education**

## **Department of Curriculum & Instruction**

G_COE_CI_2019_2	Change the POS for the Middle and Secondary Teaching
	Graduate Certificate (Program Code: GCERT_446A) as follows:
	1)Delete the statement "3 hours of coursework chosen in
	consultation with a (middle grades, mathematics, science) advisor." 2)
	Add CI 5660 Developing Expertise in Academic Content (3hrs).

**MOTION 2:** There was a motion from the Curriculum Subcommittee to approve the proposal. A vote was taken. **Motion passed.** 

## **Department of Family & Child Studies**

G_COE_FCS_2019_1	Change FCS 5900 Internship to include Clinical Internship at the Graduate level by adding to the title and course description. Change course from S/U to a graded course.
G_COE_FCS_2019_2	Add FCS 5400 edTPA Prep as part of the proposed Graduate Certificate in Birth through Kindergarten (BK) (G_COE_FCS_2019_3).
G_COE_FCS_2019_3	Family and Child Studies (FCS) would like to add an online post- baccalaureate Graduate Certificate in Birth through Kindergarten (BK). This certificate will address the need for a Residency Model for the BK program (i.e., leads to BK Licensure).

**MOTION 3:** There was a motion from the Curriculum Subcommittee to approve the proposals. Chairperson Staub suggested voting on proposals 1 - 3 as a group. A vote was taken. **Motion** passed.

## **Department of Reading Education and Special Education**

G\_COE\_RESE\_SPE\_2019\_13 Add a new post-baccalaureate graduate certificate in special education to the graduate programs in special education. Special

Education Graduate Certificate [GCERT\_XXX]. Add POS to the graduate bulletin.

G\_COE\_RESE\_SPE\_2019\_14 Change the course description for SPE 5595 - Individual Differences (3) to reflect preferred language in the field of special education.

G\_COE\_RESE\_SPE\_2019\_15 Change the course description for SPE 5901 - Internship (3) to reflect current practice in the course.

**MOTION 4:** There was a motion from the Curriculum Subcommittee to approve the proposals. Chairperson Staub suggested voting on proposals 13 - 15 as a group. A vote was taken. **Motion passed.** 

## Walker College of Business

G\_COB\_MKT/SCM\_2019\_2 Add a new course: SCM 5690 - Global Supply Chain Management (3).

**MOTION 5:** There was a motion from the Curriculum Subcommittee to approve the proposal. A vote was taken. **Motion passed.** 

## College of Fine & Applied Arts

GU\_FAA\_STBE\_2019\_01 Add the course TEC 5515 - PV Operations and Maintenance.

GU\_FAA\_STBE\_2019\_02 Add the course TEC 5520 - PV Business.

**MOTION 6:** There was a motion from the Curriculum Subcommittee to approve the proposals. Chairperson Staub suggested voting on proposals 1 and 2 as a group. A vote was taken. **Motion passed.** 

#### Hayes School of Music

G_MUS_MUS_2019_21	Change the title and course description for MUS 5050 (Currently "Supervision and Collegiate Teaching in Music Therapy," becoming "Supervision in Music Therapy").
G_MUS_MUS_2019_22	Change the grading and course description for MUS 5995 Clinical

Paper in Music Therapy. **MOTION 7:** There was a motion from the Curriculum Subcommittee to approve the proposals. Chairperson Staub suggested voting on proposals 21 and 22 as a group. A vote was taken. **Motion** 

## **B. POLICY PROPOSALS**

passed.

Tracy Smith reported that the committee is meeting next week and the committee has a plan for policies they hope to bring to the next two meetings.

## C. JOINT COMMITTEE

Marie Hoepfl reported that this committee has not met this semester but has plans to do so soon.

## 5. DISCUSSION ITEMS

- A. Dean McKenzie and Associate Dean Hoepfl reported that they are working with university legal office on a few policies. They will bring those to the policy committee and to the GAPP moving forward.
- B. Associate Dean Hoepfl reminded the group of the program director's meeting on the 24<sup>th</sup>. Ece Karatan will be there to talk about funding and adding funding for graduate students into research proposals.
- C. Associate Dean Hoepfl reminded the group of the program director's workshop on the 27<sup>th</sup>. There will be representatives from University Communications to talk about how to revitalize program websites/program pages.
- D. Associate Dean Hoepfl reminded the group of nominations for faculty and student awards. She will reach out to form award nomination reviewers.
- E. Dean McKenzie reminded the group that if anyone is having GRE waivers or entrance criteria conversations within their programs to please solidify those over the next few months. He asked for members to reach out to the Graduate School with any questions and keep them informed during the planning phase.

# 6. ADOURNMENT

**MOTION 8:** There was a motion from the floor at 3:16 p.m. to adjourn (Mansure) and seconded (Williams). Motion passed.

ADENDUM

## MINUTES OF THE MEETING OF THE GRADUATE ACADEMIC POLICIES AND PROCEDURES COMMITTEE February 17, 2020 DRAFT

GU\_CAS\_BIO\_2019\_03

Add a dual-listed course BIO 4582 / BIO 5582 (The Biology of Cancer).

## BIO 4582 - The Biology of Cancer (3)

When Offered: Spring

The Biology of Cancer is an interdisciplinary discussion of the biography of cancer through lecture and primary literature analysis, with particular focus on the molecular pathogenesis of the disease. Specific topics include tumor viruses, oncogene and tumor suppressor signaling, genomic instability, cancer stem cells, tumor metabolism, the tumor microenvironment, angiogenesis, metastasis, tumor immunology, and therapeutic applications. Lecture three hours. Prerequisites: BIO 2600, BIO 3800. [Dual-listed with BIO5582.] Dual-listed courses require senior standing; juniors may enroll with permission of the department.

## BIO 5582 - The Biology of Cancer (3)

When Offered: Spring

The Biology of Cancer is an interdisciplinary discussion of the biography of cancer through lecture and primary literature analysis, with particular focus on the molecular pathogenesis of the disease. Specific topics include tumor viruses, oncogene and tumor suppressor signaling, genomic instability, cancer stem cells, tumor metabolism, the tumor microenvironment, angiogenesis, metastasis, tumor immunology, and therapeutic applications. Content mastery and the applied practice of cancer biology commensurate with the graduate level is expected. Lecture three hours. [Dual-listed with BIO4582.]

#### G\_CAS\_BIO\_2019\_04

Change the course description, number of credit hours, and semester offering for BIO 6989 (Independent Research).

# BIO 6989 - Independent Research (1-9)

When Offered: On Demand This elective course may be repeated in blocks of 1-9 hours up to 12 hours of total credit, providing time for masters thesis research. Graded on an S/U basis.

G\_CAS\_BIO\_2019\_05 Change the POS for the MS in Biology - Cell and Molecular Biology Concentration (MS\_207B).

## **Biology - Cell and Molecular Biology Concentration, MS**

Return to: Programs Offered Program Code: MS\_207B CIP Code: 26.0101
Program of Study for the Master of Science in Biology

Admission Requirements: Baccalaureate degree from an accredited college or university; <u>complete</u> <u>application to the Graduate School</u>; official general GRE exam scores or approved exam waiver; letter of intent; commitment from a Biology faculty member to chair the applicant's thesis committee.

Additional Admission Requirements: Recommendations for the application should be written by persons familiar with the applicant's academic performance. GRE Subject test is not required. Only qualified applicants may be considered for an exam waiver. Applicants are encouraged to contact the program director as early as possible regarding thesis research interests.

To be considered for admission, applicants must meet the <u>criteria for admission to the Graduate School</u>. Meeting these criteria does not guarantee admission.

Location: On Campus

## Additional Information about Standardized Exam Waiver Eligibility

To be considered for a standardized exam waiver, applicants must hold a cumulative undergraduate GPA of 3.0 or higher. No exam waiver is automatic but will require review and approval by the Graduate School upon submission of a complete application. An approved waiver request does not guarantee acceptance into the program. A denied waiver request does not mean that a candidate is denied admission to the program, only that a standardized exam score is needed to more fully evaluate the application. Standardized test scores may be required for scholarship consideration.

## Course Requirements for the Master of Science in Biology

#### Total Required (Minimum 33 Hours)

## Required Courses (8 or 12 Hours)

- BIO 5000 Bibliography and Research (4)
- BIO 5999 Thesis (4 or 8)

## **Concentration Requirements (21 or 25 Hours)**

- BIO 6615 Current Topics in Molecular Biology (3)
- 14-19 hours, of which 9 must be taken in cell/molecular biology, graduate elective courses chosen in consultation with the major advisor

#### **One of the Following Courses**

- BIO 5650 Bioinformatics (3)
- BIO 5777 Biostatistics (4)

#### Other Requirements for the MS in Biology

- Thesis: Required
- Proficiency: Not required
- Candidacy: Required; awarded upon approval of thesis committee and prospectus
- · Comprehensive: A written comprehensive examination and an oral defense of the thesis
- Product of Learning: Not required

## G\_CAS\_BIO\_2019\_06

Change the POS for the MS in Biology - General Biology Concentration (MS\_207C).

**Biology - General Biology Concentration, MS** 

Program Code: MS\_207C CIP Code: 26.0101 Program of Study for the Master of Science in Biology

Admission Requirements: Baccalaureate degree from an accredited college or university; <u>complete application to</u> <u>the Graduate School</u>; official general GRE exam scores or approved exam waiver; letter of intent; commitment from a Biology faculty member to chair the applicant's thesis committee.

Additional Admission Requirements: Recommendations for the application should be written by persons familiar with the applicant's academic performance. GRE Subject test is not required. Only qualified applicants may be considered for an exam waiver. Applicants are encouraged to contact the program director as early as possible regarding thesis research interests.

To be considered for admission, applicants must meet the <u>criteria for admission to the Graduate School</u>. Meeting these criteria does not guarantee admission.

#### Location: On Campus

## Additional Information about Standardized Exam Waiver Eligibility

To be considered for a standardized exam waiver, applicants must hold a cumulative undergraduate GPA of 3.0 or higher. No exam waiver is automatic but will require review and approval by the Graduate School upon submission of a complete application. An approved waiver request does not guarantee acceptance into the program. A denied waiver request does not mean that a candidate is denied admission to the program, only that a standardized exam score is needed to more fully evaluate the application. Standardized test scores may be required for scholarship consideration.

Course Requirements for the Master of Science in Biology

**Total Required (Minimum 33 Hours)** 

Required Courses (8 or 12 Hours)

- BIO 5000 Bibliography and Research (4)
- BIO 5999 Thesis (4 or 8)

**Concentration Requirements (21 or 25 Hours)** 

- BIO 5777 Biostatistics (4)
- 17-21 hours of graduate elective courses chosen in consultation with the major advisor

Other Requirements for the MS in Biology

- Thesis: Required
- Proficiency: Not required
- Candidacy: Required; awarded upon approval of thesis committee and prospectus
- Comprehensive: A written comprehensive examination and an oral defense of the thesis
- Product of Learning: Not required

#### G CAS BIO 2019 07

Change the POS for the MS in Biology - Ecology and Evolutionary Biology Concentration (MS\_207D).

#### **Biology - Ecology and Evolutionary Biology Concentration, MS**

Program Code: MA\_207D Commented [MOU1]: \_MA changed to \_MS by Anna Basnight CIP Code: 26.0101

#### Program of Study for the Master of Science in Biology

Admission Requirements: Baccalaureate degree from an accredited college or university; complete application to the Graduate School; official general GRE exam scores or approved exam waiver; letter of intent; commitment from a Biology faculty member to chair the applicant's thesis committee.

Additional Admission Requirements: Recommendations for the application should be written by persons familiar with the applicant's academic performance. GRE Subject test is not required. Only qualified applicants may be considered for an exam waiver. Applicants are encouraged to contact the program director as early as possible regarding thesis research interests.

To be considered for admission, applicants must meet the criteria for admission to the Graduate School. Meeting these criteria does not guarantee admission.

#### Location: On Campus

#### Additional Information about Standardized Exam Waiver Eligibility

To be considered for a standardized exam waiver, applicants must hold a cumulative undergraduate GPA of 3.0 or higher. No exam waiver is automatic but will require review and approval by the Graduate School upon submission of a complete application. An approved waiver request does not guarantee acceptance into the program. A denied waiver request does not mean that a candidate is denied admission to the program, only that a standardized exam score is needed to more fully evaluate the application. Standardized test scores may be required for scholarship consideration.

#### Course Requirements for the Master of Science in Biology

#### Total Required (Minimum 33 Hours)

## Required Courses (8 or 12 Hours)

- BIO 5000 Bibliography and Research (4)
- BIO 5999 Thesis (4 or 8)

#### **Concentration Requirements (21 or 25 Hours)**

- BIO 5250 Current Topics in Ecology and Evolutionary Biology (3)
- BIO 5777 Biostatistics (4)
- 14-18, of which 9 must be taken in ecology and evolutionary biology, graduate elective courses chosen in consultation with the major advisor

## Other Requirements for the MS in Biology

- Thesis: Required
- Proficiency: Not required
- Candidacy: Required; awarded upon approval of thesis committee and prospectus
- Comprehensive: A written comprehensive examination and an oral defense of the thesis
- Product of Learning: Not required

## G\_COE\_CI\_2019\_2

Change the POS for the Middle and Secondary Teaching Graduate Certificate (Program Code: GCERT\_446A) as follows: 1)Delete the statement & quote ;3 hour of coursework chosen in consultation with a (middle grades, mathematics, science) an advisor."

2) Add CI 5660 Developing Expertise in Academic Content (3hrs).

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Appalachian State University

#### Middle and Secondary Teaching Graduate Certificate

Program Code: GCERT\_446A CIP Code: 13.1206

Program of Study for the Graduate Certificate in Middle and Secondary Teaching

Admission Requirements: Baccalaureate degree in a discipline related to the chosen teaching area from an accredited college or university; complete application to the Graduate School

Location: On Campus and Online

Course Requirements for the Graduate Certificate in Middle and Secondary Education

PRAXIS II exams and other specific requirements may be necessary to meet North Carolina A-Level Teaching License requirements.

Total Required (Minimum 19 or 24 Hours)

#### Required Courses (10 or 15 Hours)

- <u>C I 5550 Successful Schools for Young Adolescents (3)</u>
- <u>C I 5630 Instructional Technology (3)</u>
- CI 5900 Internship/Practicum (1-6) as determined by program director

Choose One of the Following Diversity Courses

- CI 5045 Advanced Topics in Diversity (3)
- <u>C I 5750 Teaching Diverse Young Adolescents (3)</u>

**Track-based Courses** 

Choose One Track:

Middle Grades Education (9 Hours)

• <u>C I 5650 - Middle Level Instruction and Assessment (3)</u>

• C I 5850 - Middle Level Curriculum (3)

• <u>CI 5660 – Developing Expertise in Academic Content (3)</u>

3 hours of coursework chosen in consultation with a {middle grades, mathematics, science} advisor

Career and Technical Education (9 Hours)

• CTE 5619 - Curriculum Development in Career and Technical Education (3)

- <u>CTE 5650 Research in Career and Technical Education (3)</u>
- CTE 5660 Advanced Methods in Teaching Career and Technical Education (3)

#### Secondary Mathematics (9 Hours)

- CI 5085 Teaching High School Mathematics (3)
- MAT 5015 Advanced Seminar in Secondary Mathematics Education (3)
- 3 hours of coursework chosen in consultation with a {middle grades, mathematics, science} advisor

Secondary Science (9 Hours)

- <u>G S 5403 Teaching Science in Middle and High Schools (3)</u>
- <u>G S 5404 The Meaning and Nature of Science (3)</u>
- 3 hours of coursework chosen in consultation with a {middle grades, mathematics, science} advisor

## G\_COE\_FCS\_2019\_1

Change FCS 5900 Internship to include Clinical Internship at the Graduate level by adding to the title and course description. Change course from S/U to a graded course.

## FCS 5900 - Internship (3-12)

When Offered: Fall, Spring

A structured field experience, paid or unpaid, in an area related to the program and supervised by department faculty. A proposal is to be submitted to the departmental graduate faculty committee and be approved for participation the semester previous to beginning the experience. No credit will be given for experience not previously approved. If initial NC license is required through the NC Residency Model this internship provides direct teaching experiences in a Birth to Kindergarten classroom (3 sh.). Students will be required to complete this Clinical Internship with an action research project as determined by the student and their advisor. A requirement of the Residency License is that students must complete the clinical internship in the classroom where they are employed as a lead teacher in a public school classroom. Prerequisite: 15 hours graduate courses toward degree or certificate and proposal approved. Graded on an S/U basis.

**G\_COE\_FCS\_2019\_2** Add FCS 5400 edTPA Prep as part of the proposed Graduate Certificate in Birth through Kindergarten (BK) (G\_COE\_FCS\_2019\_3).

FCS 5400 - edTPA Preparation (1) When Offered: On Demand

Prerequisite: FCS 5112 - Advanced Curriculum and Instruction for Young Children.

Students will be required to complete the edTPA portfolio by planning and implementing developmentally appropriate environments and learning experiences; interacting with children and their families; demonstrating an advanced level of reflection and integration; and participating in appropriate professional behavior, as outlined in the edTPA workbook for early childhood.

## G\_COE\_FCS\_2019\_3

Family and Child Studies (FCS) would like to add an online post-baccalaureate Graduate Certificate in Birth through Kindergarten (BK).

2020-2021 Graduate Bulletin

Appalachian State University

Birth through Kindergarten Graduate Certificate

## Program Code: GCERT\_???? CIP Code: ??.???

Program of Study for the Graduate Certificate in Birth through Kindergarten (BK)

Admission Requirements: Baccalaureate degree from an accredited college or university; <u>complete</u> <u>application to the Graduate School</u>. Note: Upon completion of this certificate students will be eligible to apply for NC Birth through Kindergarten (BK) licensure.

Course Requirements for the Graduate Certificate in Birth through Kindergarten

## Total Required (19 Hours)

#### **Required Courses (19 Hours)**

- FCS 5010 Evidence-Based Practice in Early Childhood Education (3)\_
- FCS 5100 Application and Theories of Child Development (3)
- FCS 5111 Advanced Developmental Assessment and Program Evaluation for Children (3)
- FCS 5112 Advanced Developmental Curriculum and Instruction for Young Children (3)
- FCS 5140 Family-Professional Partnerships in Birth Through Kindergarten Education (3)
- FCS 5400 edTPA Prep (1)
- FCS 5900 Internship (3-12) [This program will use 3 hours]

# G\_COE\_RESE\_SPE\_2019\_13

Add a new post-baccalaureate graduate certificate in special education to the graduate programs in special education. Special Education Graduate Certificate [GCERT\_XXX]. Add POS to the graduate bulletin.

New Graduate Certificate Proposal
Special Education Graduate Certificate [GCERT\_450A] Proposed Program of Study

# **Special Education Graduate Certificate**

Program Code: GCERT 450A CIP Code: 13.1011 Program of Study for the Graduate Certificate in Special Education This certificate with the successful completion of appropriate licensure exams will lead to NC licensure in special education: general curriculum. Approved hours of the certificate may be used toward the fulfillment of the 36-hour requirement for the MA degree in Special Education. Admission Requirements: Baccalaureate degree in any field from an accredited college or university; complete application to the Graduate School. Location: Online (https://online.appstate.edu). Course Requirements for the Graduate Certificate in Special Education **Total Required (24 Hours) Required Courses (24 Hours)** SPE 5595 - Individual Differences (3) SPE 5220 - Characteristics, Assessment, and Identification of Individuals with Specific Learning **Disabilities (3)** SPE 5610 - Classroom Management for Effective Instruction (3) SPE 5600 - Seminar in Special Education (3) SPE 5636 - Advanced Studies in Specific Learning Disabilities (3) R E 5100 - Teaching Beginning Readers and Writers (3) R E 5210 - Educating Students with Reading Disabilities (3) SPE 5901 - Internship (3)

## G\_COE\_RESE\_SPE\_2019\_14

Change the course description for SPE 5595 - Individual Differences (3) to reflect preferred language in the field of special education.

SPE 5595 - Individual Differences (3) When Offered: On Demand This course will provide an overview of the field of special education with emphasis on intellectual disabilities, learning disabilities, and emotional disabilities.

## G\_COE\_RESE\_SPE\_2019\_15

Change the course description for SPE 5901 - Internship (3) to reflect current practice in the course.

SPE 5901 - Internship (3)

When Offered: On Demand This course offers graduate students the opportunity to work with individuals with special needs under the supervision of special education faculty members. If NC licensure is required through the NC residency model, this internship provides direct teaching experiences in a K-12 environment. In many cases through the residency model, students complete their clinical internship in the classroom where they are already working as a lead teacher in a public school. Prerequisite: Application and permission of the advisor. Graded on an S/U basis.

## G\_COB\_MKT/SCM\_2019\_2

Add a new course: SCM 5690 - Global Supply Chain Management (3).

# SCM 5690 - Global Supply Chain Management (3)

When offered: On Demand

Global supply chain management is one of the most critical functions in organizations due to the competitive business environment. In order to gain global business opportunities, it is important for a business entity to actively participate in a global supply chain network. This course introduces students to global dimensions of supply chains, logistics and global transportation management, sourcing, facility management, supply chain infrastructure, and the management of global supply chains. A case-based approach pertaining to current topics that reflect the dynamic business environment will be used to reinforce and enrich course content.

Prerequisite: Admission to MBA, MSADA, MS-Accounting program or Permission of Instructor.

## GU\_FAA\_STBE\_2019\_01

Add the course TEC 5515 - PV Operations and Maintenance.

Proposed Descriptions

## TEC 4515 - PV Operations and Maintenance (3)

## When Offered: Spring

This course will introduce students to concepts, tools, techniques, and materials needed to perform operations and maintenance (*O&M*) including inspections, commissioning, performance verification, and troubleshooting for grid-direct PV systems. Students will learn how to safely and effectively utilize essential *O&M* tools, such as I-V curve tracing, thermal imaging, and electroluminescence imaging. Data analysis technique will be introduced. PV reliability issues including system level, module level, and cell level will also be studied. Contemporary trends, products, economics, and policies will be emphasized. Lecture two hours, laboratory two hours.

Prerequisite: TEC 3609, TEC 3610

[Dual listed with TEC 5515]. Dual-listed courses requires senior standing.

## TEC 5515 - PV Operations and Maintenance (3)

## When Offered: Spring

This course will introduce students to concepts, tools, techniques, and materials needed to perform operations and maintenance (O&M) including inspections, commissioning, performance verification, and troubleshooting for grid-direct PV systems. Students will learn how to safely and effectively utilize essential O&M tools, such as I-V curve tracing, thermal imaging, and electroluminescence imaging. Data analysis technique will be introduced. PV reliability issues including system level, module level, and cell level will also be studied. Contemporary trends, products, economics, and policies will be emphasized. Content mastery and applied practice at the graduate level is expected. Lecture two hours, laboratory two hours.

[Dual-listed with TEC 4515.]

# GU\_FAA\_STBE\_2019\_02

Add the course TEC 5520 - PV Business.

**Proposed Descriptions** 

## TEC 4520 - PV Business (3)

## When Offered: Fall, Spring

This course focuses on important technical considerations for PV sales professionals, including financial analysis and system financing. Through insightful presentations and instruction from experts working in the field, the course covers technical details needed to assess potential residential PV sites and to create and present accurate sales proposals. Concepts discussed in detail include: site safety, customer qualification, solar site analysis, creating conceptual design proposals, performance modeling, system costing, incentives and rebates, financial-benefit analyses, financing options, and the non-financial benefits of photovoltaic systems. This course is geared toward students who are interested in or who already are working in the business or sales side of the residential/commercial PV industry and are looking to improve their knowledge and sales techniques or are working towards the NABCEP PV Technical Sales Certification. Lecture two hours, laboratory two hours.

Prerequisite: TEC 3609 and TEC 3610

[Dual listed with TEC 5520]. Dual-listed courses requires senior standing.

## TEC 5520 - PV Business (3)

When Offered: Fall, Spring

This course focuses on important technical considerations for PV sales professionals, including financial analysis and system financing. Through insightful presentations and instruction from experts working in the field, the course covers technical details needed to assess potential residential PV sites and to create and present accurate sales proposals. Concepts discussed in detail include: site safety, customer qualification, solar site analysis, creating conceptual design proposals, performance modeling, system costing, incentives and rebates, financial-benefit analyses, financing options, and the non-financial benefits of photovoltaic systems. This course is geared toward students who are interested in or who already are working in the business or sales side of the residential/commercial PV industry and are looking to improve their knowledge and sales techniques or are working towards the NABCEP PV Technical Sales Certification. Content mastery and applied practice at the graduate level is expected.

Lecture two hours, laboratory two hours.

[Dual-listed with TEC 4520.]

## G\_MUS\_MUS\_2019\_21

Change the title and course description for MUS 5050 (Currently "Supervision and Collegiate Teaching in Music Therapy," becoming "Supervision in Music Therapy").

MUS 5050 - Supervision in Music Therapy (2)

When Offered: On Demand

*Exploration of issues in supervision of music therapy students, interns, and music therapists. Prerequisite: MUS 4901 (Internship in Music Therapy) or equivalent. Students must be enrolled concurrently in MUS 5200.* 

## G\_MUS\_MUS\_2019\_22

Change the grading and course description for MUS 5995 Clinical Paper in Music Therapy.

## MUS 5995. Clinical Paper in Music Therapy (1). F;S

Culminating clinical paper in scholarly form documenting in-depth clinical experience and application of advanced music therapy methods. Graded on an S/U basis.