

**University Curriculum Committee  
March 24, 2022 Meeting Minutes**

The University Curriculum Committee met on **Thursday, March 24** at 3:00 p.m. via Zoom Meeting.

**Members Present:**

Melinda Anderson	Julie Baker	Jeff Boles	Brittany Copley
Lori Maxwell	Kim Hanna	Martin Sheehan	Jerry Gannod
Mike Gotcher	Jeannette Luna	Sharon Huo	Jeremy Wendt, Chair
Linda Null	Chris Wilson	Barbara Jared	Ben Mohr
Bruce Greene	Wesley Pech	Janet Whiteaker	Fred Vondra
Jeff Roberts	Colin Hill	Thomas Timmerman	Chris Brown
Kent Dollar	Mohan Rao	Allen MacKenzie	Steven Sharp
Lisa Zagumny	Richard Rand	Brenda Wilson	Kim Winkle
Julie Galloway	Christy Killman	Stephanie Kazanas	Joseph Slater
Michael Allen	Rita Barnes	Allan Mills	

**Members Absent:**

Stephen Robinson	Lori Bruce	Holly Stretz	Brandi Fletcher
Jennifer Shank	Thomas Payne	Darron Smith	Brandon Johnson
Kayla Sorensen, Student	Melody Roth, Student	Steve Frye	Savannah Griffin, Student
Addison Dorris, Student	Doug Bates	LTC James Bryant	

**Official Representative(s):**

Megan Wharton, Student FOR	Mariam Abbas, Student		
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**Guest(s):**

Simone McKelvey	Jeff Austen	Andy Pardue	Mary McCaskey
Tammy Boles	Kumar Yelamarthi		

**Outline of Proceedings:**

<b>1.</b>	Approval of Agenda	<b>13.</b>	Music
<b>2.</b>	Approval of February 10, 2022 Minutes	<b>14.</b>	Human Ecology
<b>3.</b>	Decision Sciences and Management	<b>15.</b>	Agriculture
<b>4.</b>	Nursing	<b>16.</b>	Civil and Environmental Engineering
<b>5.</b>	English	<b>17.</b>	Chemical Engineering
<b>6.</b>	Curriculum & Instruction	<b>18.</b>	Computer Science
<b>7.</b>	Earth Sciences	<b>19.</b>	Electrical & Computer Engineering
<b>8.</b>	Biology	<b>20.</b>	General & Basic Engineering
<b>9.</b>	History	<b>21.</b>	Mechanical Engineering
<b>10.</b>	Mathematics	<b>22.</b>	Manufacturing & Engineering Technology
<b>11.</b>	Accounting	<b>23.</b>	General Education
<b>12.</b>	Art, Craft & Design	<b>24.</b>	Other such matters

Proceedings:

Perceiving a quorum, Dr. Jeremy Wendt, Chair of Committee, called the meeting to order at 3:03pm via Zoom.

**1. Approval of agenda**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried.

**2. Approval of minutes, February 10, 2022**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried.

**3. Decision Sciences and Management**

**A. Curriculum Changes.**

Business Analytics Curriculum

- 1) Add DS4230 (Advanced Business Analytics II) as an option for completing the Business Analytics Concentration

- 2) **From:**

DS 4510 – Business Intelligence and Analytics Capstone

Lec. 3. Credit 3.

Prerequisite or corequisite: DS4210, DS4220. This course brings together foundations of business intelligence and analytics by using a wide array of techniques to solve real-world business problems and support business decision-making.

**To:**

DS 4510 – Business Intelligence and Analytics Capstone

Lec. 3. Credit 3.

Prerequisite or corequisite: DS4210 and (DS4220 or DS4230). This course brings together foundations of business intelligence and analytics by using a wide array of techniques to solve real-world business problems and support business decision-making.

**B. Prerequisite Changes.**

- 1) **From:**

DS 4330 – Mgmt Info System Analysis/Design

Lec. 3. Credit 3.

Prerequisite or corequisite: DS 3865. An applications-oriented study of the business systems development life cycle and current systems analysis and design methods are emphasized.

**To:**

DS 4330 – Mgmt Info System Analysis/Design

Lec. 3. Credit 3.

**Prerequisite: 3850, 3860. Prerequisite or corequisite: DS 3865, 3870.** An applications-oriented study of the business systems development life cycle and current systems analysis and design methods are emphasized.

*\*Friendly Amendment: DS should be added to 3850 and 3860 (in bold above) to reflect DS 3850, DS 3860 in the updated prerequisites*

**Motion to approve.** Julie Baker  
**Second.** Kumar Yelamarthi  
**Vote.** Motion carried.

#### **4. Nursing**

##### **A. Curriculum Change.**

The TTU Mathematics Department decision to drop MATH 1130 from the course list was approved at the University Curriculum Committee in February, 2022. In response to this the Whitson Hester School of Nursing requests to change the MATH requirement for all BSN undergraduate students to MATH 1530 Introductory Statistics. This MATH course is well suited for NURS majors and an undergraduate statistics courses is a requirement for admission to all Master of Science in Nursing applicants at TTU. The WHSON will also substitute any higher-level MATH.

**Motion to approve.** Julie Baker  
**Second.** Kumar Yelamarthi  
**Vote.** Motion carried.

##### **B. Addition of New Elective Course.**

- 1. NURS 2240: Community Health Workers    Credit 1**  
**Course Description:** This course will focus on community health improvement by engaging and enhancing the ability of students to impact their population of focus through motivational interviewing to change health behaviors. The student leaders will also seek to understand current public health issues impacting the community and leverage community assets to combat misinformation.

**Motion to approve.** Julie Baker  
**Second.** Kumar Yelamarthi  
**Vote.** Motion carried.

#### **5. English**

##### **A. Curriculum Changes.**

Change the cross-listing statement in the undergraduate catalog for PC 4940; delete the semester designation for offering the course.

- 1. From:**  
PC 4940 (5940)—Technical Editing  
Cross-listing: JOUR 4940 (5940)  
Spring. Lec. 3. Credit 3.

Prerequisite: PC 3250 (ENGL 3250). Principles and practices of technical editing.

**To:**

PC 4940 (5940)—Technical Editing

Lec. 3. Credit 3.

Prerequisite: PC 3250 (ENGL 3250). Principles and practices of technical editing

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## 6. Curriculum & Instruction

### A. Concentration Name Change.

The current Multidisciplinary Studies, General (Non-Licensure) concentration program name does not adequately share the purpose of the program and in some instances is interpreted as a "lesser" path. It is our desire to clarify the program purpose by changing the name from Multidisciplinary Studies, General (Non-Licensure) concentration, B.S. to Multidisciplinary Studies Generalist, B.S. The rename will reflect current practice with better nomenclature describing the diversity of experiences gleaned from the degree program. The name is more descriptive for those individuals who desire careers within education but outside of traditional licensure paths.

#### 1. From:

Multidisciplinary Studies, General (Non-Licensure) concentration, B.S.

**To:**

Multidisciplinary Studies Generalist, B.S.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

### B. Curriculum Changes.

#### 1. Early Childhood Practitioner, B.S.

**Second Semester Junior Year**

**From:**

CFS 3600. Family, Comm & Prof Partnerships (credit 2)

**To:**

ECED 3600. Families, Communities, & Professionals (credit 2)

#### 2. Multidisciplinary Studies, English as a Second Language Concentration, B.S.

**First Semester Junior Year**

**From:**

CFS 3600. Family, Comm & Prof Partnerships (credit 2)

**To:**

ECED 3600. Families, Communities, & Professionals (credit 2)

Note: previous changes were made to this PoS at the 10/28/2021 UCC meeting

**3. Special Education Practitioner, B.S.**

**Senior Year**

**From:**

CFS 3600. Family, Comm & Prof Partnerships (credit 2)

**To:**

ECED 3600. Families, Communities, & Professionals (credit 2)

**4. Multidisciplinary Studies, Middle School Math, 6-8 concentration, B.S.**

**First Semester Sophomore Year**

**From:**

MATH 1130. College Algebra (credit 3)

MATH 1720. Pre-calculus Trigonometry (credit 3)

**To:**

MATH 1530. Introductory Statistics (credit 3)

MATH 1710. Pre-calculus Algebra (credit 3)

**5. Second Semester Sophomore Year**

**From:**

MATH 1910. Calculus I (credit 4)

Total credit hours: 16

**To:**

MATH 1720. Pre-calculus Trigonometry (credit 3)

Total credit hours: 15

**6. First Semester Junior Year**

**From:**

MATH 1530. Introductory Statistics (credit 3)

Total credit hours: 14

**To:**

MATH 1910. Calculus I (credit 4)

**Total credit hours: 15**

Note: previous changes were made to this PoS at the 10/28/2021 UCC meeting

**7. Multidisciplinary Studies, General (Non-Licensure) Concentration, B.S.**

Note: we are changing this from yearly class listing to semester-by-semester class listing.

**Freshman Year**

**From:**

ENGL 1010. English Composition I (credit 3)

ENGL 1020. English Composition II (credit 3)

Social/Behavioral Sciences Electives (Gen Ed)2 (credit 6)

PHED (credit 1)

Any GenEd Approved Science Sequence (credit 8) OR

Any Combination of GenEd Approved Science (credit 12)

FOED 2011. Introduction to Teaching and Technology(credit 2)

FOED 1820. Introductory Field Experience (credit 1) OR

FOED 1822. Intro Field Experience and Orientation (credit 1)

Select two:

MATH 1010. Math for General Studies (credit 3) OR

MATH 1130. College Algebra (credit 3) OR

MATH 1410. Number Concepts for Teachers (credit 3) OR

MATH 1530. Introductory Statistics (credit 3) OR

MATH 1630. Finite Mathematics (credit 3) OR

MATH 1710. Pre-calculus Algebra (credit 3) OR

MATH 1830. Applied Calculus (credit 3) OR

MATH 1410. Number Concepts for Teachers (credit 3) AND

MATH 1420. Geometry Concepts for Teachers (credit 3)

Total credit: 30 (actually 30 or 34)

**To:**

**First Semester Freshman Year**

**ENGL 1010. English Composition I (credit 3)**

**FOED 1820. Introductory Field Experience (credit 1) OR**

**FOED 1822. Intro Field Exp and Orientation (credit 1)**

**FOED 2011. Intro to Teaching and Technology (credit 2)**

MATH 1410. Math for General Studies (credit 3) OR  
Mathematics (Gen Ed)2 (credit 3)

Natural Sciences (Gen Ed)1 (credit 4)  
Social/Behavioral Sciences (Gen Ed)3 (credit 3)

Total credit hours: 16

Second Semester Freshman Year  
ENGL 1020. English Composition II (credit 3)  
HIST 2010. Early United States History (credit 3)

MATH 1420. Geometry Concepts for Teachers (credit 3) OR  
Mathematics (Gen Ed)2 (credit 3)

Natural Sciences (Gen Ed)1 (credit 4)  
PHED (credit 1)

Total credit hours: 14

## 8. Sophomore Year

### From:

ENGL 2130. Topics in American Literature (credit 3) OR  
ENGL 2235. Topics in British Literature (credit 3) OR  
ENGL 2330. Topics in World Literature (credit 3)

COMM 2025. Fundamentals of Communication (credit 3) OR  
PC 2500. Communicating in the Professions (credit 3)

Humanities/Fine Arts Electives (Gen Ed)3 (credit 6)  
HIST 2010. Early United States History (credit 3)  
HIST 2020. Modern United States History (credit 3)

EXPW 2130. Concepts of Comprehensive Health (credit 3) OR  
EXPW 2430. First Aid, Safety and CPR (credit 2)

SPED 2010. Introduction to Special Education (credit 3) OR  
Any 3000/4000 level SPED course (credit 3)

Choose six-eight semester hours from the following:

BIOL 1080. Concepts of Biology (credit 3)  
CHEM 1310. Concepts of Chemistry (credit 3)

GEOL 1070. Concepts of Geology (credit 3)  
PHYS 1310-Concepts of Physics (credit 3)  
Science Sequence1

Total credit hours: 30-32 (actually 29-32)

**To:**

First Semester Sophomore Year

COMM 2025. Fundamentals of Communication (credit 3) OR  
PC 2500. Communicating in the Professions (credit 3)

ENGL 2130. Topics in American Literature (credit 3) OR  
ENGL 2235. Topics in British Literature (credit 3) OR  
ENGL 2330. Topics in World Literature (credit 3)

FOED 3010. Integrating Inst Tech into the Class (credit 3)  
HIST 2020. Modern United States History (credit 3)  
Humanities/Fine Arts (Gen Ed)4 (credit 3)

Total credit hours: 15

Second Semester Sophomore Year

Humanities/Fine Arts Elective (Gen Ed)4 (credit 3)  
Any EXPW Elective (credit 3)  
Social/Behavioral Sciences Electives (Gen Ed)3 (credit 3)

PSY 2210. Educational Psychology (credit 3) OR  
Any 2000-3000 level PSY course (credit 3)

Any ECED (credit 3) OR  
Any ECSP (credit 3) OR  
HEC Elective (credit 3)

Total credit hours: 15

**9. Junior Year**

**From:**

HEC 2200. Develop Young Child: Conc to Age 6 (credit 3) OR  
HEC 3500. Develop: Mid Child/Adolescence (credit 3) OR  
HEC 3525. Parent-Child Relationships (credit 3)

FOED 3010. Integrating Inst Tech into the Classroom (credit 3)  
Guided Electives (credit 8)

Upper Division General Electives (credit 9-10)

EXPW 2130. Concepts of Comprehensive Health (credit 3) OR  
EXPW 2430. First Aid, Safety and CPR (credit 2)

Any two different areas (five-six semester hours) from:

MUS 3530. Music Applications (credit 3)  
THEA 4500(5500). Creative Dramatics (credit 3)  
any 3000/4000 level HIST  
any 3000/4000 level PHIL  
any 3000/4000 level PSY  
any 3000/4000 level SOC

Total credit hours: 32

**To:**

**First Semester Junior Year**

Guided Electives (Advisor Approved) (credit 6)

LSCI 4570. Young Adult Literature (credit 3) OR  
Any 3000/4000 Level READ course (credit 3)

SPED 2010. Introduction to Special Education (credit 3) OR  
Any 3000/4000 Level SPED Course (credit 3) OR  
LIST 4050. Sign Language I (credit 3)

General Electives (credit 3)

Total credit hours: 15

**Second Semester Junior Year**

Guided Electives (Advisor Approved) (credit 3)

HEC 3500. Development: Mid Child/Adolesc (credit 3) OR  
PSY 4100. Child Psychology (credit 3)

SPED 2010. Introduction to Special Education (credit 3) OR  
Any 3000/4000 Level SPED Course (credit 3) OR  
LIST 4050. Sign Language I (credit 3)

General Electives (credit 6)

Total credit hours: 15

## 10. Senior Year

### From:

PSY 2210. Educational Psychology (credit 3) OR  
PSY 4100(5100). Child Psychology (credit 3)

CJ 3650. Youth and Society (credit 3) OR  
CJ 4250(5250). Drugs and Behavioral Pharmacology (credit 3) OR  
SOC 4510(5510). Social Deviance (credit 3) OR  
SOC 4500(5500). Scgly of Alcohol Abuse & Alcoholism (credit 3) OR  
PSY 4130(5130). Brain and Behavior (credit 3) OR  
PSY 4400(5400). Psychopharmacology (credit 3) OR  
EXPW 2160. Drug Use and Abuse (credit 2) OR  
READ 4570(5570). Young Adult Literature (credit 3) OR  
LSCI 4570(5570). Young Adult Literature (credit 3) OR  
PSY 4050(5050). Learning and Cognition (credit 3)

Guided Electives (credit 7)

Electives (total 36 hours at 3000/4000 level) (credit 10-19)

Total credit hours: 24-35

### To:

First Semester Senior Year

**Any three different areas to total 9 credit hours:**

Any 3000/4000 level COMM

Any 3000/4000 level ENGL

Any 3000/4000 level HIST

Any 3000/4000 level LIST

Any 3000/4000 level MUS or ART

Any 3000/4000 level PHIL

Any 3000/4000 level PSY

Any 3000/4000 level SOC or CJ

Any 3000/4000 level THEA

Any 3000/4000 Education Electives<sup>5</sup> (credit 6)

Total credit hours: 15

Second Semester Senior Year

**Any three different areas to total 9 credit hours:**

Any 3000/4000 level COMM

Any 3000/4000 level ENGL

Any 3000/4000 level HIST  
Any 3000/4000 level LIST  
Any 3000/4000 level MUS or ART  
Any 3000/4000 level PHIL  
Any 3000/4000 level PSY  
Any 3000/4000 level SOC or CJ  
Any 3000/4000 level THEA

Any 3000/4000 Education Electives<sup>5</sup> (credit 6)

Total credit hours: 15

#### **11. Notes for Program of Study**

**From:**

Note:

1 Complete a sequence (eight semester hours) or total of 12 semester hours selected from BIOL, CHEM, PHYS or GEOL.

2 Select two courses from: ANTH 1100(SOC 1100); ECON 2010, ECON 2020; GEOG 1012; POLS 1030; PSY 1030 or SOC 1010.

3 Select two courses from: ART 1035; HIST 2210, HIST 2220, HIST 2310, HIST 2320; MUS 1030; PHIL 1030; THEA 1030; ENGL 2130, ENGL 2235 or ENGL 2330.

Note: A minimum of 36 Upper Division hours are required for graduation.

**To:**

Notes:

1 Any University approved General Education Natural Sciences

2 Any University approved General Education Mathematics

3 Any University approved General Education Social/Behavioral Science

4 Any University approved General Education Humanities and/or Fine Arts

5 Select Education Electives from: CUED, ECSP, ELED, ESOL, ESLP, EXPW, FOED, MUED, SEED, SPED, or SVCL

#### **12. Special Education, Comprehensive/Interventionist Concentration, B.S. Second Semester Freshman Year**

**From:**

Total Credit hours: 15

**To:**

Humanities/Fine Arts (Gen Ed) (credit 3)

Total credit hours: 18

### 13. First Semester Sophomore Year

**From:**

Humanities/Fine Arts (Gen Ed) (credit 3)

GEOL 1070. Concepts of Geology (credit 3)

MATH 1130. College Algebra (credit 3) OR

MATH 1530. Introductory Statistics (credit 3)

**To:**

COMM 2025. Fundamentals of Communication (credit 3) OR

PC 2500. Communicating in the Professions (credit 3)

PHYS 1310. Concepts of Physics (credit 3)

SPED 2010. Introduction to Special Education (credit 3)

### 14. Second Semester Sophomore Year

**From:**

PHYS 1310. Concepts of Physics (credit 3)

SPED 2010. Introduction to Special Education (credit 3)

**To:**

MUS 1074. Music to Meet Exceptional Education Needs (credit 1)

SPED 3050. Universal Design for Special Education (credit 5)

### 15. First Semester Junior Year

**From:**

COMM 2025. Fundamentals of Communication (credit 3) OR

PC 2500. Communicating in the Professions (credit 3)

MUS 1074. Music to Meet Exceptional Education Needs (credit 1)

SPED 3050. Universal Design for Special Education (credit 5)

Total credit hours: 15

**To:**

FOED 3810. Field Experiences in Education (credit 1-2; 2 credit hours required)

READ 3315. Foundations of Literacy for Exceptional Learners (credit 7)

SPED 3031. Physical Mgmt & Support Svcs for Ortho, Motor, & Hlth Imp  
(credit 3)

Total credit hours 18

#### 16. Second Semester Junior Year

**From:**

FOED 3810. Field Experiences in Education (credit 1-2; 2 credit hours required)

READ 3313. Literacy for Special Populations (credit 5)

SPED 3031. Physical Mgmt & Support Svcs for Ortho, Motor, & Hlth Imp  
(credit 3)

Total credit hours: 18

**To:**

FOED 3850. Field Experiences in SPED (credit 1-3, 3 credit hours required)

SPED 4100. Collaborations & Inclusive Practice (credit 3)

Total credit hours: 14

#### 17. First Semester Senior Year

**From:**

SPED 4100. Collaborations & Inclusive Practice (credit 3)

SPED 4300. Individualized Educational Planning (credit 2)

Total credit hours: 15

**To:**

SPED 4400. Individualized Student Planning (credit 3)

Total credit hours: 13

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

#### C. Course Additions.

1. CUED 4780. Job-Embedded Seminar

Lec. 2. Credit 2.

Develop an understanding of state standards & curriculum, identify effective instructional strategies, and implement appropriate assessment methods to support and meet the needs of all learners. State specific licensure requirements for Job-Embedded educators will be addressed.

2. ECED 3600. Families, Communities, & Professionals Lec. 2. Credit 2.  
Integrated learning experiences with emphasis on developmentally appropriate approaches to working with families and communities.
3. FOED 3850. Field Experience in Special Education Lab. 4-12. Credit 1-3.  
Prerequisite: Full admission to the Teacher Education Program. Supervised work experiences in public schools for students who receive the continuum of special education services. A minimum grade of B is required to meet degree requirements for licensure candidates.
4. READ 3315. Foundations of Literacy for Exceptional Learners Lec. 7. Credit 7.  
Prerequisite: Full admission to the Teacher Education Program. Corequisite: FOED 3810. Literacy development from birth through middle grades. Topics include: integrating knowledge of foundational literacy skills and the developmental, cultural, linguistic, and motivational aspects of literacy to design and implement multi-sensory methods of structured literacy instruction; the selection, facilitation, and interpretation of valid assessments; and the evaluation and selection of materials for teaching reading, spelling, and writing based on individual students' strengths and needs. A minimum grade of B is required to meet degree requirements for licensure candidates.
5. SPED 4400. Individualized Student Planning Lec. 3. Credit 3.  
Prerequisite: Full admission to the Teacher Education Program; SPED 3030 and SPED 3050. Corequisite: SPED 4872. Intensive study of the educational process that includes writing appropriate Individual Education Plans (IEP) to meet individuals needs of a student who receives special education services in the public schools. A minimum grade of B is required to meet the requirements for licensure candidates.

#### **Course Changes.**

1. **From:**  
SPED 3020. Characteristics and Needs of Persons with Comprehensive Disabilities  
Lec. 3. Credit 3.  
Prerequisite: SPED 2010, SPED 3050 and full admission to the Teacher Education Program. This course is designed to provide an intensive study into the various types of disabilities that fall within the range of moderate to severe disabilities. In addition to the characteristics of these disabilities, students will explore a broad range of research-based teaching strategies and techniques for this population. A built-in practicum will provide hands-on experience while implementing systematic data driven instruction.

Additional emphasis is placed on core components that serve students who receive special education services with moderate to severe disabilities.

**To:**

SPED 3020. Characteristics and Needs of Persons with Comprehensive Disabilities

Lec. 3. Credit 3.

Prerequisite: SPED 2010, SPED 3050, and full admission to the Teacher Education Program. **Corequisite: FOED 3850.** Provide an intensive study into the various types of low incidence disabilities. In addition to the characteristics of these disabilities, students will explore a broad range of research-based teaching strategies and techniques for working with this population using systematic data-driven instruction. A minimum grade of B is required to meet degree requirements for licensure candidates

**Add:** Corequisite: FOED 3850

**Change:** update course description wording.

**2. From:**

SPED 3030. The Education of Persons with Learning Disabilities

Lec. 3. Credit 3.

Prerequisite: SPED 2010, SPED 3050 and full admission to the Teacher Education Program. This course will provide an intensive study of background information and current perspectives in specific learning disabilities. Concepts of neurological dysfunction, dyslexia, perceptual impairments, etc., are reviewed from an interdisciplinary perspective. Emphasis on knowledge, comprehension, and evaluation of these concepts as they apply to education and behavior management strategies. Considerations in diagnosis and educational programming are developed.

**To:**

SPED 3030. **Specific Learning Disabilities** Lec. 3. Credit 3.

Prerequisite: SPED 2010, SPED 3050, and full admission to the Teacher Education Program. **Corequisite: FOED 3850.** History and background of identification of specific learning disabilities, the characteristics of specific learning disabilities, diagnostic criteria, current Federal and state laws and policies, the role of Response to Intervention and Multi-Tiered Systems of Support, and designing data-based individualized instruction. **A minimum grade of B is required to meet degree requirements for licensure candidates.**

**Add:** Corequisite: FOED 3850. Add to course description: A minimum grade of B is required to meet degree requirements for licensure candidates.

**Change:** update course title and description wording

**3. From:**

SPED 3050. Universal Design for Special Education Lec. 5. Credit 5. Prerequisite: SPED 2010 and full admission to Teacher Education Program. This course is designed to provide candidates with an extensive overview of research- based strategies for improving student outcomes through universally designed planning of environment, instruction, and assessment. The course will also focus on service delivery models, methods, and procedures for including the use of state and federal mandates. A minimum grade of B is required to meet requirements for licensure candidates.

**To:**

SPED 3050. Universal Design for Special Education Lec. 5. Credit 5. Prerequisite: SPED 2010. Investigating research-based strategies for improving student outcomes through universally designed instruction, environments, and assessments. Topics include affective, environmental, and neurological aspects of learning; trauma informed practices, and designing and implementing accessible and equitable assessments and instruction.

**Change:** update course description

**Delete:** Remove pre-req of admission to Teacher Education Program. Remove B or better grade wording.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**D. Course Addition.**

- 1. READ 3314. Literacy for Middle School Lec. 3. Credit 3.**  
**Prerequisite: Full admission to the Teacher Education Program. Integration of concepts fundamental to the development of literacy from birth through middle grades. Includes a study of language development and communication skills, language arts, content area reading, and the assessment and selection of appropriate instructional strategies based upon student need. A minimum grade of B is required to meet degree requirements for licensure and practitioner candidates.**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**E. Combine Concentrations.**

Combine the following four (4) concentrations:

- (1) Special Education, SE Interventionist Biology, 6-12 Concentration, B.S.;
- (2) Special Education, SE Interventionist English, 6-12 Concentration, B.S.;
- (3) Special Education, SE Interventionist History, 6-12 Concentration, B.S.;
- (4) Special Education, SE Interventionist Math, 6-12 Concentration, B.S.

into one (1) concentration: Special Education, Interventionist for Secondary Education Concentration, B.S. - Effective Summer/Fall 2022

The combination of concentrations will better align with state licensure, while giving students stronger special education foundational skills. Students will seamlessly transition into the new, broader concentration with advisor guidance. The original concentrations will be phased out no later than August 2023.

The department is proposing the new combined concentration be titled *Special Education, Interventionist for Secondary Education Concentration, B.S.*

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## 7. Earth Sciences

### A. Course Change.

#### 1. From:

GEOL 3120. Mineralogy      Lec. 2. Lab 4. Credit 4.  
Prerequisite: CHEM 1120, GEOL 3110 and MATH 1720.

#### To:

GEOL 3120. Mineralogy      Lec. 3. Lab 2. Credit 4.  
Prerequisite: **GEOL 2500.**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## 8. Biology

### A. Course Addition.

1. **BIOL 4070 (5070) – Vertebrate Development**  
**Lec. 3. Lab. 2. Credit 4.**

**Prerequisite: BIOL 1113 and BIOL 1123. Development of vertebrates from the origin of gametes through hatching or birth, including embryonic anatomy and physiology and events, mechanisms, facts, and theories influencing vertebrate development.**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**9. History**

**A. Course Addition.**

- 1. DH 2030: Intro to Methods of Digital Humanities Credit: 3, Lec. 3**  
**Course Description:** An introduction to the interdisciplinary scholarship, theory, ethics, and practice of digital humanities.  
**Prerequisites:** None

The History Department proposes the creation of a new course, DH 2030, Intro to Methods of Digital Humanities. Open to any student, this course would also serve as a core requirement for a proposed new minor in Digital Humanities. Course design draws on the joint effort of faculty from Foreign Languages, Geology, Computer Science, the Volpe Library, and History, but the course will be located under the History Department in the Undergraduate Catalog.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**B. Addition of New Minor.**

In a joint effort with the Departments of Foreign Languages, Geology, Computer Science, and the Volpe Library, the Department of History proposes the creation of a new Minor in Digital Humanities. Students may earn this minor by completing 15 hours:

**REQUIRED: (6 Hours)**

- DH 2030 - Intro to Methods of Digital Humanities
- CSC 2220 - Data Science and AI for Everyone

And 9 hours from the following options:

- MATH 3070 - Statistical Methods I
- POLS 3000 - Data Analysis
- CSC 3220 - Fundamentals of Data Science
- HIST 3430 - Digital History
- HIST 3420 - Archives Management and Research
- GEOG 4510 - Theory of GIS I
- GEOG 4511 - Theory of GIS II
- GEOG 4210 - Cartography
- ART 2340 - Computer Aided Drafting for the Artist
- PC 3750 - Ethics in the Professions

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## 10. Mathematics

### A. Course Changes.

#### 1. From:

MATH 2610: Discrete Structures. Lec. 3. Cr. 3.

Pre-requisite: C or better in MATH 1920.

Course Description: Topics to be chosen from algebra of sets and relations, functions, algebras, graphs, and digraphs, monoids and machines, groups and subgroups, computer arithmetic, binary codes, logic and languages.

#### To:

MATH 2610: Discrete Structures.

Cross-listing CSC 2700

Lec. 3. Credit 3.

Prerequisite: C or better in MATH 1910.

Topics to be chosen from algebra of sets and relations, functions, algebras, graphs, and digraphs, monoids and machines, groups and subgroups, computer arithmetic, binary codes, logic and languages.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

### B. Addition of New Concentrations.

The Mathematics Department proposes the creation of four new concentrations in the Mathematics B.S. Degree. The currently existing tracks (Pure Mathematics, Applied Mathematics, Statistics, and Actuarial Mathematics) will be elevated to the new concentrations (Pure Mathematics, Applied Mathematics, Statistics and Data Science, and Actuarial Science). Most of the curricula in the new concentrations correspond to the current tracks. The significant changes are listed below:

1. Pure Mathematics. The two pure mathematics sequences (MATH 4110-4120 Advanced Calculus I-II and MATH 4010-4020 Modern Algebra I-II) will be required. In addition, students must complete at least one sequence from the applied mathematics sequence list. MATH 4993 Mathematical Research (3 credit hours) will be added as capstone course.
2. Applied Mathematics. The sequence of MATH 4210-4220 Numerical Analysis I-II, and MATH 4510 Advance Math for Engineers are required. In addition, the students must complete one sequence from each of the pure mathematics and the applied mathematics sequence list.
3. Statistics and Data Science. The two applied mathematics sequences (MATH 3070-3080 Statistical Methods I-II, and MATH 4470-4480 Probability & Statistics I-II) are required. In addition, students must complete at least one sequence from the pure mathematics sequence list. The significant change includes the additional courses (27 hours) from Computer Science, CSC 1300, 1310, 2220, 2310, 3300, 4220, and 4260. MATH 4993 Mathematical Research (3 credit hours) will be added as capstone course.
4. Actuarial Science. The three applied mathematics sequences (MATH 3070-3080 Statistical Methods I-II, MATH 4470-4480 Probability & Statistics I-II, and MATH 4550-4560 Mathematics of Investment I-II) are required. In addition, students must complete at least one sequence from the pure mathematics sequence list.

The significant change is the requirement of Minor in Business (21 hours) consisting of ECON 2010-2020, ACCT 3720, BMGT 3510, MKT 3400, FIN 3210, and **LAW 3810**.

*\*Friendly Amendment: In the Actuarial Science concentration the requirement of the Minor in Business should consist of LAW 2810 not LAW 3810 as originally listed.*

## **11. Accounting**

### **A. Course Changes.**

#### **1. From:**

ACCT 3180 – Financial Accounting and Reporting II

Lec. 3. Credit 3.

Prerequisite: ACCT 3170 with a grade of C or better. Continuation of ACCT 3170. In-depth treatment of accounting and reporting for current and non-current assets and current and non-current liabilities. Emphasis is placed on the development of technical accounting skills including basic theory, valuation, and measurement. Some assignments will incorporate Excel and other relevant technologies. Accounting majors must earn a grade of C or better to graduate.

ACCT 3330 – Federal Taxation I

Lec. 3. Credit 3.

Prerequisite: ACCT 3170 with a grade of C or better. A survey of the basic concepts of taxation and the impact of federal taxation on individuals, business income, and property transactions. An introduction to basic tax research methods using available tax research databases. Accounting majors must earn a grade of C or better to graduate.

ACCT 3620 – Auditing I

Lec. 3. Credit 3.

Prerequisite: ACCT 3170 with a grade of C or better. Introduction to the theory and practice of financial statement audits. Includes use of online professional standards and simulated electronic work papers. Accounting majors must earn a C or better to graduate.

#### **To:**

ACCT 3180 – Financial Accounting and Reporting II

Lec. 3. Credit 3.

Prerequisite: ACCT 3170 **and ACCT 3150 with grades of C or better.**

Continuation of ACCT 3170. In-depth treatment of accounting and reporting for current and non-current assets and current and non-current liabilities.

Emphasis is placed on the development of technical accounting skills including basic theory, valuation, and measurement. Some assignments will incorporate Excel and other relevant technologies. Accounting majors must earn a grade of C or better to graduate.

ACCT 3330 – Federal Taxation I

Lec. 3. Credit 3.

Prerequisite: ACCT 3170 and ACCT 3150 with grades of C or better. A survey of the basic concepts of taxation and the impact of federal taxation on individuals, business income, and property transactions. An introduction to basic tax research methods using available tax research databases. Accounting majors must earn a grade of C or better to graduate.

ACCT 3620 – Auditing I

Lec. 3. Credit 3.

Prerequisite: ACCT 3170 and ACCT 3150 with grades of C or better.

Introduction to the theory and practice of financial statement audits. Includes use of online professional standards and simulated electronic work papers.

Accounting majors must earn a C or better to graduate

*\*Friendly Amendment: Effective changes should be made in Fall 2023 not Fall 2022.*

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

#### **B. Course Addition.**

1. ACCT 3150 Accounting Analytics, Visualizations, and Information Technology  
Lec. 3. Credit. 3.

Pre-requisite ACCT 2110 and ACCT 2120. Specific terminology, data analytics, visualization, and technology applied to the practice of Accounting. Accounting majors must earn a C or better to graduate

*\*Friendly Amendment: Course name should be ACCT 3150 Accounting Analytics to fit the 30 character maximum of course names not ACCT 3150 Accounting Analytics, Visualizations, and Information Technology.*

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

#### **C. Curriculum Changes.**

##### **From:**

Accounting Major Courses:

- ACCT 3170 – Financial Accounting I
- ACCT 3180 – Financial Accounting II
- ACCT 3190 – Financial Accounting III
- ACCT 3210 – Cost Accounting
- ACCT 3330 – Taxation I
- ACCT 3620 – Auditing I
- 4000-Level Accounting Elective

##### **To:**

Accounting Major Courses:

- ACCT 3150 – Accounting Analytics

- ACCT 3170 – Financial Accounting I
- ACCT 3180 – Financial Accounting II
- ACCT 3190 – Financial Accounting III
- ACCT 3210 – Cost Accounting
- ACCT 3330 – Taxation I
- ACCT 3620 – Auditing I
- 4000-Level Accounting Elective

New Addition to the Accounting Major:

- Add an additional required course to the Accounting major: ACCT 3150 Accounting Accreditation, Visualization, and Information Technology
- The Accounting major will consist of 24 hours of upper division accounting courses.
- To accommodate this addition, 3-credit hours of Elective will be removed from the program.

Freshman Year

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First Semester

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- [DS 2810 - Computer Applications in Business](#) Credit: 3. or
- [Humanities/Fine Arts Elective](#) Credit: 3.<sup>3</sup>
- [ENGL 1010 - English Composition I](#) Credit: 3. <sup>1</sup>
- [MATH 1130 - College Algebra](#) Credit: 3. <sup>1</sup>
- Natural Science Credit: 4.<sup>2</sup>
- [UBUS 1020 - Success Skills for Business Studies](#) Credit: 1.

Total: 14

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Second Semester

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- [COMM 2025 - Fundamentals of Communication](#) Credit: 3. or
- [PC 2500 - Communicating in the Professions](#) Credit: 3.
- [DS 2810 - Computer Applications in Business](#) Credit: 3.
- [Humanities/Fine Arts Elective](#) Credit: 3.<sup>3</sup>
- [ENGL 1020 - English Composition II](#) Credit: 3. <sup>1</sup>
- MATH 1530 Introductory Statistics Credit: 3
- Natural Science Credit: 4.<sup>2</sup>

Total: 16

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Sophomore Year

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First Semester

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- [ACCT 2110 - Principles of Accounting I](#) Credit: 3.<sup>4</sup>
  - [ECON 2010 - Principles of Microeconomics](#) Credit: 3.
  - [HIST 2010 - Early United States History](#) Credit: 3.
  - [ENGL 2130 - Topics in American Literature](#) Credit: 3. or [ENGL 2235 - Topics in British Literature](#) Credit: 3. or [ENGL 2330 - Topics in World Literature](#) Credit: 3
  - [LAW 2810 - Business Legal Environment and Ethics](#) Credit: 3.
- Total: 15
- 

Second Semester

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- [ACCT 2120 - Principles of Accounting II](#) Credit: 3.<sup>4</sup>
  - [ECON 2020 - Principles of Macroeconomics](#) Credit: 3.
  - [HIST 2020 - Modern United States History](#) Credit: 3.
  - [Humanities/Fine Arts Elective](#) Credit: 3.<sup>3</sup>
  - Elective Credit: 3.<sup>6</sup>
- Total: 15
- 

Note:

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Junior Year

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First Semester

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- [ACCT 3170 - Financial Accounting and Reporting I](#) Credit: 3.<sup>4</sup>
  - [ACCT 3150 – Accounting Analytics](#) Credit: 3.<sup>4</sup>
  - [BMGT 3510 - Management and Organization Behavior](#) Credit: 3.
  - DS 3841 – Management Information Systems Credit: 3
  - [ECON 3610 - Business Statistics I](#) Credit: 3.
- Total: 15
- 

Second Semester

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- [ACCT 3180 - Financial Accounting and Reporting II](#) Credit: 3.<sup>4</sup>
- [ACCT 3210 - Cost Accounting](#) Credit: 3.<sup>4</sup>
- [FIN 3210 - Principles of Managerial Finance](#) Credit: 3.

- [MKT 3400 - Principles of Marketing](#) Credit: 3.
  - Elective Credit: 3.<sup>6</sup>
- Total: 15
- 

## Senior Year

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### First Semester

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- [ACCT 3190 - Financial Accounting and Reporting III](#) Credit: 3.<sup>4</sup>
  - [ACCT 3620 - Auditing I](#) Credit: 3.<sup>4</sup>
  - [BMGT 3720 - Business Communication I](#) Credit: 3.
  - [DS 3520 - Operations Management](#) Credit: 3.
  - Elective Credit: 3.
- Total: 15
- 

### Second Semester

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- [ACCT 3330 - Federal Taxation I](#) Credit: 3.<sup>4</sup>
  - ACCT Elective Credit: 3.<sup>5</sup>
  - [BMGT 4930 \(5930\) - Business Strategy](#) Credit: 3.
  - ~~Elective Credit: 3.<sup>6</sup>~~
  - [DS 3620 - Business Analytics: Data Driven Decision Making](#) Credit: 3.
  - Business Elective Credit: 3.<sup>6</sup>
- Total: 15
- 

<sup>1</sup>Must pass course with a grade of C or higher.

<sup>2</sup>Select two courses from the following: [ASTR 1010](#), [ASTR 1020](#); [BIOL 1010](#), [BIOL 1020](#), [BIOL 1123](#), [BIOL 2310](#), [BIOL 2010](#), [BIOL 2020](#); [CHEM 1010](#), [CHEM 1020](#), [CHEM 1110](#), [CHEM 1120](#); [GEOL 1040](#), [GEOL 1045](#); [PHYS 2010](#), [PHYS 2020](#), [PHYS 2110](#), [PHYS 2120](#) .

<sup>3</sup>Select two courses from the University approved [Humanities/Fine Arts list](#) .

<sup>4</sup>Accounting majors must earn a C or better in this course to graduate with a major in accounting.

<sup>5</sup>Accounting Electives. Select one course:

- ACCT 4230 (5230) – Advanced Managerial Accounting
- ACCT 4300 (5300) – Financial Statement Analysis
- ACCT 4530 – Governmental and Not-for-Profit Accounting
- ACCT 4600 (5600) – Fraud Auditing and Forensic Accounting
- ACCT 4700 (5700) – International Experience in Accounting

- ACCT 4800 – Internship in Accounting
- ACCT 4900 – Special Topics in Accounting

<sup>6</sup>Electives – Business students must take a minimum of one (1) three-hour upper division business elective. Additional electives are required to complete the credits required for the degree. The additional elective credits may be completed with courses from any discipline at any level. Electives should be chosen in consultation with an academic advisor.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## 12. Art, Craft & Design

### A. **Course Deletion.**

1. Delete: ART 4170: Ancient Mesoamerican Art, Credit 3.  
Effective: Fall 2022

### **Curriculum and Catalog Changes.**

2. CHANGE concentration name FROM General Fine Arts: Dual-Studio TO General Fine Arts: Dual-Focus  
Effective: Fall 2022
3. ART 1045 – Drawing I, Studio 6, credit 3  
ADD enrollment restriction, “for art majors only or by permission of the instructor”.  
Effective: Fall 2022
4. ART 1340 – Foundations Studio I, Studio 6, credit 3  
ADD enrollment restriction, “For art majors only or by permission of the instructor”.  
Effective: Fall 2022
5. Art 1320 – Creative Studio, Studio 6, credit 3  
ADD enrollment restriction, “for art majors only or by permission of the instructor”.
6. Art 1250 – Intro to Digital Imaging, Studio 6, credit 3  
ADD enrollment restriction, “for art majors only or by permission of the instructor”.  
Effective: Fall 2022
7. Art 2340 – Computer Aided Drafting for the Artist, Studio 6, credit 3  
ADD enrollment restriction, “for art majors only or by permission of the instructor”.  
Effective: Fall 2022

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

### **13. Music**

#### **A. New Concentration Option.**

The School of Music is proposing a new concentration option in Multiple Woodwinds under the Bachelor of Music Performance Concentration.

Currently, students who are admitted to the BM in Performance degree have the following options: instrumental, piano, vocal, musical theatre, composition, and jazz performance. We would like to propose a new concentration option, Multiple Woodwinds.

We have encountered students with an interest in careers as a private music instructor on multiple instruments as well as a performer in pit orchestras for musical productions (woodwind jobs in musical theatre often require a single musician to perform on 3-6 woodwind instruments). As our current performance degree offerings require specialization in only one instrument, we are currently unable to serve these students. This interest has come from current students as well as prospective students. The absence of this degree program has resulted in losing prospects to other programs and current students transferring to other institutions, as well as not fully utilizing the available career paths for our students in the Nashville area. Students in this program would also be able to contribute to and benefit from the newly created option in Musical Theatre here at TN Tech, by performing in future musical theatre productions on campus.

Our campus is a great fit for this concentration option, due to the abundance of musical theatre resources already available to us both in the greater Nashville area as well as at the Cumberland Playhouse in Crossville. Our current faculty, facilities, programs, and internship partnerships are perfectly suited for a musical theatre option. While this is a common Master's-level program, this offering is rare at the undergraduate level, with only a select few universities nationwide allowing an undergraduate concentration in multiple woodwinds (the University of North Texas, Indiana University, and the University of Michigan are the three main schools with this option). We would be the only public university in the Southeastern United States with this degree available, which would continue to distinguish our excellent music program from our local competing institutions.

Students who complete this option would leave Tech with proficiency in all five woodwind instruments (flute, oboe, clarinet, bassoon, saxophone), and will be well-placed to start careers in pit orchestra performance and in private studio teaching. In particular, there is tremendous need for music teachers in rural areas such as Middle Tennessee, and someone who can teach more than one instrument will be in high demand.

#### **Course Additions.**

- 1. MUS 3730 – Pedagogy and Literature III Credit: 2 (Lec: 2)**

Prerequisite: MUS 3720 – Pedagogy and Literature II

Description: MUS 3730 is the third course in a six-semester sequence covering repertoire, pedagogy, and teaching strategies for students pursuing the Multiple

Woodwinds option under the BM-Performance concentration. This specific course will focus on the student's first secondary instrument (out of four), and will focus on its historical development, repertoire available in different time periods, review of currently available teaching materials (method books, etc.), discussion of correct performing technique and teaching methodology for all aspects of performance, and the state of research in each of the above areas. Prior to taking this course, the student will have completed two semesters of Pedagogy and Literature focused on their primary instrument (MUS 3710 and MUS 3720).

All music majors must achieve a grade of "C" in each music course

2. MUS 4730 – Supervised Teaching Experience III Credit: 2 (Ind: 2)  
Prerequisites: MUS 4720 – Supervised Teaching Experience II

Description: MUS 4730 is the final course in a six-semester sequence covering repertoire, pedagogy, and teaching strategies for students pursuing the Multiple Woodwinds option under the BM-Performance concentration. This specific course will focus on the student's final secondary instrument (out of four), and will focus on its historical development, repertoire available in different time periods, review of currently available teaching materials (method books, etc.), discussion of correct performing technique and teaching methodology for all aspects of performance, and the state of research in each of the above areas. Prior to taking this course, the student will have completed three semesters of Pedagogy and Literature focused on their primary instrument and one secondary instrument (MUS 3710, 3720, and 3730), and two previous semesters of Supervised Teaching Experience focused on their second and third secondary instruments (MUS 4710 and 4720).

All music majors must achieve a grade of "C" in each music course.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

#### 14. Human Ecology

##### A. Course Additions.

1. HEC 4262 Nutrition Applications in the Community Lec 3. Credit 3  
Prerequisites: HEC 3201, HEC 4271 and Senior Standing  
Course Description: Application of nutrition skills in a variety of community-based settings.

##### Course Deletion.

2. HEC 4994 Field Experience Health Care Credit 3

##### Course Changes.

##### 3. From:

HEC 4200 Advanced Nutrition

Lec 3, Cr 3

Prerequisites: HEC 2020, CHEM 3005, and BIOL 2350, and admission to the HEC-DPD program. Principles of nutrition research, including research design and methodology, analysis of peer-reviewed research, effective scholarly writing, standards of responsible and ethical research, and understanding how research impacts evidence-based practice.

**To:**

HEC 4200 Advanced Nutrition Research Lec 3 Cr 3  
Prerequisites: HEC 2020, CHEM 3005, and BIOL 2350, and admission to the HEC-DPD program. Principles of nutrition research, including research design and methodology, analysis of peer-reviewed research, effective scholarly writing, standards of responsible and ethical research, and understanding how research impacts evidence-based practice.

**4. From:**

HEC 4215 Professional Preparation for Advancement in Nutrition and Dietetics Credit 1

Prerequisites: HEC 3210 and HEC 3270. Preparation of supervised practice applications and supporting documents. Options for professional credentials, graduate school and careers. Professional issues in dietetics.

**To:**

HEC 4215 Professional Preparation for Advancement in Nutrition and Dietetics Credit 2

Prerequisites: HEC 3210 and HEC 3270. Preparation of supervised practice applications and supporting documents. Options for professional credentials, graduate school and careers. Leadership and career management in dietetics.

**5. From:**

HEC 3560 Child Life Intervention Strategies Lec 3 Cr.3.

Prerequisite HEC 3550

Child Life clinical and play interventions to meet the needs of children and families during health care experiences.

**To:**

HEC 3560 Child Life Intervention Strategies Lec 3 Cr.3.

Grade of C or higher in HEC 3550.

Child Life clinical and play interventions to meet the needs of children and families during health care experiences.

**6. From:**

HEC 3570 Child Life Practicum Cr.1

Prerequisite or Corequisite: HEC 3560

**To:**

HEC 3570 Child Life Practicum Cr. 1

Prerequisite: Grade of B or higher in HEC 3560 and a 3.0 minimum overall GPA.

Applied service learning experience with children and families in a healthcare setting.

There are no costs associated with this change.

**7. From:**

HEC 4590 Child Life Clinical Experience Cr.12.

Prerequisite: Senior Standing, HEC 3570, HEC 4550

Supervised clinical (internship) experience in a health care facility to develop clinical child life skills. Direct supervision by a Certified Child Life Specialist in good standing with and meeting supervisor qualifications of the Association of Child Life Professionals is required. In order to meet Association of Child Life Professional's eligibility requirements to sit for the Professional Child Life Certification Exam, the Child Life clinical experience must be a minimum of 600 hours.

**To:**

HEC 4590 Child Life Clinical Experience Cr.12.

Prerequisite: Senior Standing, HEC 3570, HEC 4550, Minimum 3.0 GPA Overall and 3.0 GPA in HEC Major

Supervised clinical (internship) experience in a health care facility to develop clinical child life skills. Direct supervision by a Certified Child Life Specialist in good standing with and meeting supervisor qualifications of the Association of Child Life Professionals is required. In order to meet Association of Child Life Professional's eligibility requirements to sit for the Professional Child Life Certification Exam, the Child Life clinical experience must be a minimum of 600 hours

**8. From:**

HEC 4055 Developing Professional Resilience Credit 1 (changed to "Resilience in the Workplace" at the February Curriculum Meeting)

**To:**

HEC 4055 Resilience in the Workplace Lec 3 Credit 3

Prerequisites: Junior or Senior Standing

Integrating resilience and adaptability for success in the workplace, exploring the value of health and wellbeing, concepts of nurturing a self-care mindset.

**Curriculum Changes.**

**9. From:**

HEED Curriculum First Semester Junior Year

HEC 4055 Developing Professional Resilience

Total Credits 14 credits

**To:**

HEED Curriculum First Semester Junior Year  
Remove HEC 4055 1 Credit  
Replace with: Elective Credit 1 credit  
Total Credits 14 credits

**10. From:**

Nutrition and Dietetics Curriculum, Senior Year HEC 4994 Field Experience Health Care

\*Note: Requires professional liability insurance (Additional fee), background check (additional fee), proof of insurance, and proof of immunizations before entering HEC 4994.

**To:**

Nutrition and Dietetics Curriculum, Senior Year- Remove HEC 4994  
Replace with HEC 4262 Nutrition Applications in the Community  
Remove \*Note from Curriculum Sheet  
Total credits remain at 12 credits for second semester, Senior Year

**11. From:**

Nutrition and Dietetics Curriculum Sheet Note:

“In order to become a Registered Dietitian/Nutritionist (RDN) and to practice as an RDN, the following steps must be completed:

1. After successful graduation from Tennessee Tech’s DPD (Nutrition and Dietetics) program, gain acceptance and complete an accredited supervised practice program.
2. Pass the Academy of Nutrition and Dietetics Registration Exam
3. Obtain appropriate licensure in the state in which you will practice”.

**To:**

Nutrition and Dietetics Curriculum Sheet Note:

“In order to become a Registered Dietitian/Nutritionist (RDN) and to practice as an RDN, the following steps must be completed:

1. After successful graduation from Tennessee Tech’s DPD (Nutrition and Dietetics) program, gain acceptance and complete an accredited supervised practice program.
2. **Effective January 1, 2024, the minimum degree requirement to be approved for eligibility for the registration exam for RDNs will change from a bachelors’ degree to a graduate degree. All students will need to complete a graduate degree to sit for the credentialing exam, in addition to completing the supervised practice program.**
3. Pass the national credentialing examination administered by the Commission on Dietetic Registration (CDR).
4. Obtain appropriate licensure in the state in which you will practice”.

**12. Nutrition and Dietetics Curriculum Note 1:**

**From:**

The Nutrition and Dietetics concentration is an accredited Didactic Program in Dietetics (DPD); which requires a mandatory enrollment policy. A total of **20 students will be enrolled each year at the junior level,** and a total of **20 students will be enrolled each year at the senior level.** Students should plan to apply for admission into upper division dietetics during the sophomore year. See [www.tntech.edu/hec](http://www.tntech.edu/hec) for application details.  
No double asterisk

**To:**

The Nutrition and Dietetics concentration is an accredited Didactic Program in Dietetics (DPD); which requires a mandatory enrollment policy. A total of **20 students will be enrolled each year at the junior level,** and a total of **20 students will be enrolled each year at the senior level.** Students should plan to apply for admission into upper division dietetics during the sophomore year. **As part of the requirements for successfully completing the Didactic Program in Dietetics and to receive a Verification Statement: a minimum grade of C is required in all Science courses.** See [www.tntech.edu/hec](http://www.tntech.edu/hec) for application details as well as the DPD Student Handbook.

**13. From:**

Nutrition and Dietetics curriculum First semester, Senior Year  
HEC 3565 OR HEC 3100 OR EXPW 4420 OR EXPW 4440  
Total 13 credits

**To:**

Nutrition and Dietetics curriculum First Semester, Senior Year  
**HEC 3100 Cultural Competence for Professionals**  
**Remove all choice courses and require HEC 3100**  
**Total 14 credits**

**14. From:**

Second Semester Junior Year HEC 3275 Research in Family Sciences, 3  
credits  
Total 16 credits

**To:**

**Option of taking 1 of the following courses:**  
**HEC 3275 Research in Family Sciences OR EXPW 4042 Health Promotion OR**  
**EXPW 3170 Motor Learning OR Other Advisor Approved EXPW course**  
**Total 16 credits**

**15. From:**

Second Semester Senior Year, Nutrition and Dietetics Curriculum  
HEC 3025 Professionalism in the Workplace credit 1

Total Credits 12

**To:**

Second Semester Senior Year, Nutrition and Dietetics Curriculum

Remove HEC 3025 (1 credit)

Total Credits 11 – see below for next change to correct this

**16. From:**

First Semester Junior Year, Psy 1030 Introduction to Psychology

Total Credits 17

**To:**

Second Semester Senior Year, Move PSY 1030 to this semester on the curriculum sheet

Total Credits 14

**17. From:**

First semester Senior Year

HEC 4215 1 credit

Total credits 13

**To:**

First semester Senior Year

HEC 4215 2 credit

Total credits 14

**Child Life Concentration:**

**18. From:**

Junior Year Second Semester

HEC 3570 Child Life Practicum 1 credit

16 credits

**To:**

Junior Year Second Semester

HEC 3570 Child Life Practicum OR Guided Coursework 1 credit

16 credits

**19. From:**

Senior Year Second Semester

HEC 4590 Child Life Clinical Experience 12 credits

12 credits

**To:**

Senior Year Second Semester

HEC 4590 Child Life Clinical Experience 12 credits **OR Guided Coursework** 12 credits  
12 credits

### **Human Ecology Minor**

**20. From:**

Human Ecology Minor HEC 3025 Professionalism in the Workplace Credit 1  
HEC Electives (3 hours must be upper division) Credit 8

**To:**

Remove HEC 3025 Credit 1 from HEC minor  
HEC 1010 OR HEC 2065, and HEC 3011 6 credits  
HEC Electives (3 hours must be upper division) Credit 9.  
Total Credits: 15

### **Child Development and Family Relations Concentration**

**21. From:**

Junior Year Second Semester  
HEC 3025 1 credit  
Total Credits 16

**To:**

Junior Year Second Semester  
Remove HEC 3025  
Total credits 15

**22. From:**

Senior Year First Semester  
Elective Credit 1  
HEC 4055 Credit 1  
Total Credits 14

**To:**

Senior Year First Semester  
Remove Elective Credit 1  
Change HEC 4055 to 3 credits  
Total Credits 15

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

### **15. Agriculture**

**A. Course Deletion.**

1. AGHT 3480 - Horticultural Therapy

**B. Course Deletions.**

1. AGET 1500 – Practical Applications in Agricultural Systems
2. ANS 3010 – Animal Nutrition
3. ANS 4140 – Commercial Poultry Production and Management

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**C. Course Changes/Addition.**

1. Deletion of one of the two math requirements in the Agricultural Communications, Agricultural Education, Environmental Agri-Science Horticulture, Nursery and Landscape Management, Agronomy, Agricultural Science and Management, and Turfgrass Management Concentrations

**Addition of AGET 1600 – Practical applications in Agricultural Systems**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**D. Course Deletion/Addition.**

1. Deletion of MATH 1630 – Finite Mathematics, and MATH 1130 – College Algebra from math selection in all curricula in the School of Agriculture

2. **Addition of MATH 1710 – Pre-calculus Algebra as an approved selection to meet the Math requirement in all curricula in the School of Agriculture**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**E. Curriculum Changes.**

Livestock Management

1. **From:**

ANS 2020 – Livestock Management 3 credit hours (1 lecture, 4 lab hours)

**To:**

ANS 2020 – Livestock Management 3 credit hours (**2 lecture, 2 lab hours**)

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**16. Civil and Environmental Engineering**

**A. Course Addition.**

**1. CEE 4170 (5170) Introduction to Mechanics of Composites**

Lec. 3. Credit: 3.

Prerequisite: CEE 3110

Introduction to mechanics of fibrous, laminated composites. Micromechanics, mechanical properties, stiffness and strength, and classical laminate theory. Thermal and moisture effects. Effective engineering properties of laminates. Failure theories, design criteria, and computational implementation.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**B. Addition of New Concentration.**

Construction Engineering and Management (CEM)

Civil engineering is a broad engineering discipline consisting of many sub-disciplines. Construction engineering and management is a sub-discipline concerned with the actual construction process – “Build the Project” - as opposed to the traditional design fields such as structural engineering or transportation engineering – “Design the Project.” In the past, the construction industry has typically been separated from the design process. However, as construction projects are increasingly under strict cost controls, schedules, and safety as well as incorporating novel construction techniques, the gap between traditional civil engineering design and construction has disappeared.

Construction engineering and management incorporates principles of engineering and business. The new concentration will primarily focus on the engineering aspects with some introduction to the business aspects. It is also anticipated that the new concentration would also serve as a strong marketing tool for the department and College of Engineering. Graduates of the proposed CEM concentration in CEE would be highly sought after in the construction industries, expanding the focus and market for the civil engineering program.

The department is currently in the process of hiring a Lecturer in Construction Engineering and Management. This individual will have primary responsibility for teaching coursework for the concentration, combined with complementary coursework in the College of Business.

Summary of Curriculum Changes (compared to BSCE program)

18 credits of concentration coursework obtained by:

Removing MATH Elective (3cr)

Removing CEE Sequence (x2) (6cr)

Removing CEE Elective (x3) (9cr)

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Freshman Year

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First Semester

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- CHEM 1110 - General Chemistry I Credit: 4. <sup>1</sup>
- ENGL 1010 - English Composition I Credit: 3.
- ENGR 1110 - Engineering Graphics Credit: 2.
- Humanities/Fine Arts Elective Credit: 3.
- MATH 1910 - Calculus I Credit: 4.
- CEE 1020 - Connections to Civil and Environmental Engineering Credit: 1. <sup>2</sup>

Total: 16

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Second Semester

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- ENGL 1020 - English Composition II Credit: 3.
- Humanities/Fine Arts Elective Credit: 3.
- Social/Behavioral Science Elective Credit: 3.
- MATH 1920 - Calculus II Credit: 4.
- Natural Science Credit: 4. <sup>1</sup>

Total: 17

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Sophomore Year

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First Semester

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- CEE 2110 - Statics Credit: 3.
- ~~CEE 3710 - Principles of Engineering Economy Credit: 2.~~
  
- ENGL 2130 - Topics in American Literature Credit: 3. or
- ENGL 2235 - Topics in British Literature Credit: 3. or
- ENGL 2330 - Topics in World Literature Credit: 3.
  
- MATH 2110 - Calculus III Credit: 4.
- Natural Science Credit: 4. <sup>1</sup>
- ~~Social/Behavioral Science Elective Credit: 3.~~

Total: ~~17~~16

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## Second Semester

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- CEE 3110 - Mechanics of Materials Credit: 3.
  - CEE 3500 – Introduction to Construction Engineering Credit: 3.
  - CEE 3600 - Surveying Credit: 3.
  - ~~CEE 3710 – Principles of Engineering Economy Credit: 2.~~
  - MATH 2120 - Differential Equations Credit: 3.
  - ME 2330 - Dynamics Credit: 3.
- 
- COMM 2025 - Fundamentals of Communication Credit: 3. or
  - PC 2500 - Communicating in the Professions Credit: 3.

Total: ~~17~~18

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## Junior Year

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### First Semester

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- BMGT 3510 – Management and Organizational Behavior Credit: 3.
  - CEE 3320 - Structural Mechanics Credit: 3.
  - CEE 3413 - Environmental Engineering Credit: 3.
  - ~~CEE 3500 – Introduction to Construction Engineering Credit: 3.~~
  - CEE 3610 - Transportation Engineering Credit: 3.
  - Approved CEE Lab Elective Credit: 1.<sup>63</sup>
- 
- ME 3720 - Fluid Mechanics Credit: 3. or
  - CEE 3415 – Fluid Mechanics Credit: 3.

Total: 16

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### Second Semester

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- CEE 3030 - Civil Engineering Materials Credit: 3.
- CEE 3420 - Hydraulics Credit: 3.
- CEE 4310 - Structural Steel Design Credit: 3.

- GEOL 3210 - Geology for Engineers Credit: 3.
- CEM Elective Credit: 3.<sup>4</sup>
- ~~MATH Elective Credit: 3.<sup>3</sup>~~
- ~~CEE 3720 - Engineering Statistics Credit: 2. or~~
- ~~MATH 3470 - Introductory Probability and Statistics Credit: 3.~~

Total: ~~17~~-15

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Senior Year

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First Semester

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- CEE 4320 - Reinforced Concrete Design Credit: 3.
- CEE 4800 - Geotechnical Engineering Credit: 3.
- CEE 4920 - Professionalism and Ethics Credit: 1.
- CEE 4940 - Fundamentals of Civil Engineering Credit: 0.
- CEM Elective Credit: 6.<sup>4</sup>
- ~~ENGR 1120 - Programming for Engineers Credit: 2. or~~
- ~~ECE 2850 - Principles of Electric Circuit Credit: 3. or~~
- ~~ME 3210 - Thermodynamics I Credit: 3. or~~
- ~~CHE 3010 - Thermodynamics of Chemical Processes Credit: 3.~~
- CEE 3720 - Engineering Statistics Credit: 2. or
- MATH 3470 - Introductory Probability and Statistics Credit: 3.

Total: 15

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Second Semester

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- CEE 4950 - Senior Design Project Credit: 3.
- Approved CEE Lab Elective Credit: 1.<sup>-6 3</sup>
- CEM Elective Credit: 6.<sup>4</sup>
- ~~Approved CEE Sequence Credit: 3<sup>-5</sup>~~
- Social/Behavioral Science Elective Credit: 3.
- ENGR 1120 - Programming for Engineers Credit: 2. or
- ECE 2850 - Principles of Electric Circuit Credit: 3. or
- ME 3210 - Thermodynamics I Credit: 3. or
- CHE 3010 - Thermodynamics of Chemical Processes Credit: 3.

Total: ~~13~~-15

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Note:

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<sup>1</sup> CHEM 1110 and PHYS 2110 are required. Students select either CHEM 1120 or PHYS 2120. ~~Students who intend to pursue the environmental area of emphasis should take CHEM 1120.~~

<sup>2</sup> This course not included in 128-hour curriculum.

<sup>3</sup> Select 1 of the following 3 CEE lab courses: ~~CEE 3040, CEE 3120, CEE 3430~~. ~~Students who select or plan to select the structural mechanics or structures option should take CEE 3120; environmental students should take CEE 3430~~  
~~MATH 2010, MATH 3810, MATH 4210 (5210) or MATH 4510 (5510).~~

<sup>4</sup> Construction Engineering and Management (CEM) Electives: Any course numbered CEE 4500 through 4599, ENGR (CEE) 4510, ACCT 3720, BMGT 3630, BMGT 4410, BMGT 4520. At least 3 of the 5 courses must be CEE (ENGR) courses.

<sup>5</sup> Approved CEE Electives: ~~CEE 3100, Any 4000-level CEE course.~~

Approved CEE Sequences:

- |   |   |
|---|---|
| <del>• CEE 4130 (5130), CEE 4160 (5160), CEE 4190 (5190)</del>  | <del>• Structural Mechanics</del>       |
| <del>• CEE 4130 (5130), CEE 4350 (5350), CEE 4360 (5360), CEE 4370 (5370), CEE 4380 (5380), CEE 4810 (5810)</del> | <del>1. Structural Engineering</del>    |
| <del>• CEE 4410 (5410), CEE 4420 (5420), CEE 4430 (5430), CEE 4440 (5440), CEE 4450 (5450)</del>                  | <del>• Environmental Engineering</del>  |
| <del>• CEE 4600 (5600), CEE 4610 (5610), CEE 4630 (5630), CEE 4640 (5640), CEE 4660 (5660)</del>                  | <del>• Transportation Engineering</del> |

<sup>6</sup> ~~Select 1 of the following 3 CEE lab courses: CEE 3040, CEE 3120, CEE 3430. Students who select or plan to select the structural mechanics or structures option should take CEE 3120; environmental students should take CEE 3430.~~

**Motion to approve.** Julie Baker  
**Second.** Kumar Yelamarthi  
**Vote.** Motion carried

## 17. Chemical Engineering

### A. Course Addition.

1. CHE 3140. Biotechnology and Bioprocess Engineering. Lec. 3. Credit 3 | Lab 2. Credit  
Prerequisite: BIOL 3200 or BIOL 3230.  
Course Description: Biotechnology and bioprocess engineering represent important areas in which chemical engineers contribute to the design and development of solutions to complex problems in medicine, energy, food, and other areas. This course (with an integrated, hands-on lab component) involves a detailed exploration of these topics.

### Curriculum Changes.

2. **CHE 3140 Biotechnology and Bioprocess Engineering will replace BIOL 3140 Cellular Biology in the CHE Biomolecular Concentration Curriculum**

Course Description: Biotechnology and bioprocess engineering represent important areas in which chemical engineers contribute to the design and development of solutions to complex problems in medicine, energy, food, and other areas. This course (with an integrated, hands-on lab component) involves a detailed exploration of these topics

3. **CHE 4973 Special Topics in Chem Engr Lec. 3. Credit 3**

Prerequisite: none

Course Description: Special Topics in Chemical Engineering taught on an as needed basis.

Justification: This is to add CHE 4973 to the list of approved courses for CHE Tech Electives.

Current approved CHE Tech Electives:

CHE 4245 - Clinical Immersion

CHE 4330 (5330) - Polymer Engineering

CHE 4335 - Fuel Cells

CHE 4340 - Introduction to Rheology

CHE 4440 - Protein Engineering

CHE 4550 - Green Engineering

CHE 4560 - Agile Manufacturing

CHE 4661 (5661) - Transport in Biochemical and Biological Processes

CHE 4990 - Undergraduate Research

**CHE 4973 – Special Topics in Chem Engr**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**18. Computer Science**

**A. Cross Listing a Course.**

Computer Science department is requesting the cross-listing of CSC 2700 Discrete Structures for Computer Science with MATH 2610 Discrete Structures.

**B. Postponement of a Course.**

Computer Science department would like to request to have the removal of CSC 4620 Software Engineering II (3 credits) delayed through Fall 2022. The course was to be replaced with CSC 4615 Software Engineering II (2 credits), however, additional students that are still on older catalog years will need the older course number along with the additional credit.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## **19. Electrical & Computer Engineering**

### **A. Course Changes.**

ECE BSEE and BSCmpE Program

#### **1. From:**

ECE 3130 - Microcomputer Systems

Lec. 3. Lab. 3. Credit 4.

Prerequisite: C or better in CSC 1300 and C or better in ECE 2140.

Microcomputer system architecture. Software/hardware analysis.

Programming microcomputer system using Assembly and C languages. Design hardware subsystem and integration with microcontroller for engineering application.

#### **To:**

ECE 3130 - Microcomputer Systems

Lec. 3. Lab. 3. Credit 4.

**Prerequisite: C or better in CSC 1300; and either C or better in ECE 2140 or C or better in both ECE 2011 and ECE 2110.**

Microcomputer system architecture. Software/hardware analysis.

Programming microcomputer system using Assembly and C languages. Design hardware subsystem and integration with microcontroller for engineering application.

#### **2. From:**

ECE 3140 - Digital System Design

Lec. 3. Credit 3.

Prerequisite: C or better in ECE 2140.

Hierarchical, modular design of complex digital systems; synchronous and asynchronous sequential circuit analysis and design, testability, and circuit simulation for design verification and timing analysis. EDA tools, hardware-description languages, logic synthesis, and field programmable gate arrays.

#### **To:**

ECE 3140 - Digital System Design

Lec. 3. Credit 3.

**Prerequisite: C or better in ECE 2140 or C or better in both ECE 2110 and ECE 3160.**

Hierarchical, modular design of complex digital systems; synchronous and asynchronous sequential circuit analysis and design, testability, and circuit simulation for design verification and timing analysis. EDA tools, hardware-description languages, logic synthesis, and field programmable gate arrays.

#### **3. From:**

ECE 3210 - Control System Analysis

Lec. 3. Credit 3.

Prerequisite: PHYS 2110 and C or better in either ECE 3330 or ME 3050.

Modern and classical methods of control system analysis of continuous-time systems. Introduction to control systems design tools.

**To:**

ECE 3210 - Control System Analysis

Lec. 3. Credit 3.

**Prerequisite:** PHYS 2110 and C or better in any of ECE 3010, ECE 3330, or ME 3050.

Modern and classical methods of control system analysis of continuous-time systems. Introduction to control systems design tools.

**4. From:**

ECE 3270 - Programmable Logic Controller Lab

Lab. 3. Credit 1.

**Prerequisite:** C or better in ECE 2050, or C or better in ME 3023, or C or better in in CHE 2020, or C or better in CEE 3030, or C or better in MET 3200.

Introduction to Ladder Logic Programming, Relays, PLC in Automation & Control, Safety, Hardware Troubleshooting, Hands-on laboratory experiments and projects.

**To:**

ECE 3270 - Programmable Logic Controller Lab

Lab. 3. Credit 1.

**Prerequisite:** C or better in ECE 2050, or C or better in ECE 3060, or C or better in ME 3023, or C or better in in CHE 2020, or C or better in CEE 3030, or C or better in MET 3200.

Introduction to Ladder Logic Programming, Relays, PLC in Automation & Control, Safety, Hardware Troubleshooting, Hands-on laboratory experiments and projects.

**5. From:**

ECE 3330 - Signals and Systems

Lec. 4. Credit 4.

**Prerequisite:** C or better in ECE 2050 and C or better in MATH 2120.

Time-domain and frequency-domain analysis of signals and systems, Fourier series, Fourier transform, Laplace transform and Z transform and their applications, Analog filters. Signal sampling and reconstruction, Design and implementation of analog and digital filters.

**To:**

ECE 3330 - Signals and Systems

Lec. 4. Credit 4.

**Prerequisite:** C or better in MATH 2120; and either C or better in ECE 2050 or C or better in both ECE 2001 and ECE 2020.

Time-domain and frequency-domain analysis of signals and systems, Fourier series, Fourier transform, Laplace transform and Z transform and their applications, Analog filters. Signal sampling and reconstruction, Design and implementation of analog and digital filters.

**6. From:**

ECE 3610 - Introduction to Power Systems

Lec. 3. Credit 3.

Prerequisite: PHYS 2120 and C or better in ECE 2050.

Overview of electric power systems, magnetic circuits and transformers, electromechanical energy conversion, rotating machines, power system operation and control, and current issues in power systems.

**To:**

ECE 3610 - Introduction to Power Systems

Lec. 3. Credit 3.

Prerequisite: PHYS 2120 and C or better in either ECE 2020 or ECE 2050.

Overview of electric power systems, magnetic circuits and transformers, electromechanical energy conversion, rotating machines, power system operation and control, and current issues in power systems.

**7. From:**

ECE 3710 - Introduction to Telecommunications

Lec. 3. Credit 3.

Prerequisite: C or better in ECE 3330 and C or better in MATH 3470 (MATH 3470 may be taken concurrently).

Introduction to analog and digital communication systems: modulation and demodulation, signal spectra, coding for data compression and error correction.

**To:**

ECE 3710 - Introduction to Telecommunications

Lec. 3. Credit 3.

Prerequisite: C or better in either ECE 3010 or ECE 3330; and C or better in MATH 3470 (MATH 3470 may be taken concurrently).

Introduction to analog and digital communication systems: modulation and demodulation, signal spectra, coding for data compression and error correction.

**8. From:**

ECE 3920 - Professional Issues in Electrical and Computer Engineering

Lec. 1. Rec. 1. Credit 1.

Prerequisite: C or better in ECE 1000, Junior Standing, and C or better in either COMM 2025 or PC 2500.

Professional topics in Engineering, verbal technical communications.

**To:**

ECE 3920 - Professional Issues in Electrical and Computer Engineering

Lec. 1. Rec. 1. Credit 1.

Prerequisite: C or better in either ECE 1000 or ECE 2010, Junior Standing, and C or better in either COMM 2025 or PC 2500.

Professional topics in Engineering, verbal technical communications.

**9. From:**

ECE 4010 - Analog Electronic Circuits

Lec. 3. Credit 3.

Prerequisite: C or better in ECE 3050 and C or better in ECE 3330.

Frequency response, multi-stage amplifiers, feedback, power output stages, circuit design.

**To:**

ECE 4010 - Analog Electronic Circuits

Lec. 3. Credit 3.

Prerequisite: C or better in either ECE 3050 or ECE 3300 and C or better in either ECE 3010 or ECE 3330.

Frequency response, multi-stage amplifiers, feedback, power output stages, circuit design.

**10. From:**

ECE 4020 (5020) - Digital Signal Processing

Lec. 3. Credit 3.

Prerequisite: C or better in CSC 1310, C or better in ECE 3130, and C or better in ECE 3330.

Theory and practice of discrete-time signals and systems, A/D and D/A conversion, filter design, DSP Architecture and implementation, programming, DSP applications.

**To:**

ECE 4020 (5020) - Digital Signal Processing

Lec. 3. Credit 3.

Prerequisite: C or better in ECE 3130; and C or better in either ECE 3020 or ECE 3330.

Theory and practice of discrete-time signals and systems, A/D and D/A conversion, filter design, DSP Architecture and implementation, programming, DSP applications.

**11. From:**

ECE 4120 (5120) - Fundamentals of Computer Design

Lec. 3. Credit 3.

Prerequisite: C or better in ECE 3130 and C or better in ECE 3140.

Continuation of digital system design concepts and applications with emphasis on computer hardware design: CPU sequencers, arithmetic/logic units, fixed and floating point arithmetic implementations, and computer peripheral interfacing, utilizing programmable logic.

**To:**

ECE 4120 (5120) - Fundamentals of Computer Design

Lec. 3. Credit 3.

Prerequisite: C or better in ECE 3130 and C or better in either ECE 3140 or ECE 4110.

Continuation of digital system design concepts and applications with emphasis on computer hardware design: CPU sequencers, arithmetic/logic units, fixed and floating point arithmetic implementations, and computer peripheral interfacing, utilizing programmable logic.

**12. From:**

ECE 4130 (5130) - Introduction to Digital VLSI

Lec. 3. Credit 3.

Prerequisite: C or better in ECE 2140 and C or better in ECE 3050.

Analysis, design and layout of complex digital integrated circuits in MOS technology. The course emphasizes design through projects and requires extensive use of simulation and layout VLSI CAD tools.

**To:**

ECE 4130 (5130) - Introduction to Digital VLSI

Lec. 3. Credit 3.

**Prerequisite: C or better in either ECE 2110 or ECE 2140; and C or better in either ECE 3050 or ECE 3300.**

Analysis, design and layout of complex digital integrated circuits in MOS technology. The course emphasizes design through projects and requires extensive use of simulation and layout VLSI CAD tools.

**13. From:**

ECE 4630 (5630) - Power Electronics

Lec. 3. Credit 3.

Prerequisite: C or better in ECE 3050 and C or better in ECE 3610.

Uncontrolled and controlled rectifiers, voltage controllers, chopper, dc motor control, pulse-width modulation inverters, induction motor control, and power supplies.

**To:**

ECE 4630 (5630) - Power Electronics

Lec. 3. Credit 3.

**Prerequisite: C or better in either ECE 3050 or ECE 3300; and C or better in ECE 3610.**

Uncontrolled and controlled rectifiers, voltage controllers, chopper, dc motor control, pulse-width modulation inverters, induction motor control, and power supplies.

**14. From:**

ECE 4961 - Capstone Design I

Lec. 2. Lab. 4. Credit 3.

Prerequisite: C or better in CSC 1310, C or better in ECE 3050, C or better in ECE 3130, C or better in ECE 3330, C or better in ECE 3920, C or better in MATH 2010, C or better in MATH 3470, Senior Standing, and C or better in either MATH 2110 or MATH 2610.

The first in a sequence of two capstone design project courses. Student

teams will complete a comprehensive system design project. Teamwork, leadership, project planning and management, specification, budgeting, design review, subsystem development, testing, weekly reporting, documentation, and oral presentation.

**To:**

ECE 4961 - Capstone Design I

Lec. 2. Lab. 4. Credit 3.

**Prerequisite:** C or better in either ECE 3050 or both of ECE 3060 and ECE 3300; C or better in ECE 3130; C or better in either ECE 3010 or ECE 3330; C or better in ECE 3920; C or better in MATH 2010; C or better in MATH 3470; Senior Standing; and C or better in either MATH 2110 or MATH 2610.

The first in a sequence of two capstone design project courses. Student teams will complete a comprehensive system design project. Teamwork, leadership, project planning and management, specification, budgeting, design review, subsystem development, testing, weekly reporting, documentation, and oral presentation.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**20. General & Basic Engineering**

**A. Course Addition.**

**1. ENGR 4750 – Mechanical Engineering Laboratory**

**Lab. 3. Credit 1.**

**Prerequisite:** ME 3010, ME 3210, ME 3023, ME 3720.

**Basic instrumentation, lab experimentation, measurements and evaluation related to the disciplines in Mechanical Engineering**

**Curriculum changes for BS Engineering (BSE) Program**

- 1.** Remove the following TTU courses from the required courses list:
  - a. ECE 2850 Principles of Electric Circuits (3)
  - b. ECE 2851 Principles of Electric Circuits Lab (1)
  - c. ECE 3850 Intermediate Principles of Electric Circuits (3).
- 2.** Remove the following ETSU courses from the technical elective list:
  - a. MGMT 3000 Organizational Behavior and Management (3)
- 3.** Remove the following TTU courses from the technical elective list:
  - a. ECE 3010 Signals and Systems (3)
  - b. ECE 3300 Electronics I (3)
- 4.** Include (add) the following TTU courses in the required courses list:
  - a. ECE 2050 Circuits and Electronics I (4)
  - b. ECE 2140 Introduction to Digital Systems (4)
  - c. ENGR 4750 Mechanical Engineering Laboratory (1)

5. Include (add) the following TTU courses in the technical electives list:
  - a. ECE 3330 Signals and Systems (4)
  - b. ECE 3610 Introduction to Power Systems (3)
  - c. CEE 3320 Structural Mechanics (3)
  - d. CEE 3413 Environmental Engineering (3)
  - e. CEE 3610 Transportation Engineering (3)
  
6. Include (add) the following ETSU course in the technical electives list:
  - a. SURV 2530 Basic Construction Surveying (4)

The results of these changes are shown in the attached tables. Table 1A applies strictly to TTU’s catalog for TTU-based students. Table 1B applies to ETSU-based students (physics courses are 5 credit hrs at ETSU).

**Transition Plan:**

Because the BS in Engineering is a joint degree program between TTU and ETSU, each university must teach at least 32 credit hours in the program to satisfy SACSCOC. Table 1A (for TTU-based students) shows the agreed-to teaching responsibilities going forward with the 2022-23 academic year. Table 1B (for ETSU-based students) shows the agreed-to teaching responsibilities for 2022-23 as well.

Currently, there are no TTU-based sophomores, juniors, and seniors in the joint degree program. Thus, Tables 2 and 3 apply only to ETSU-based students based on the new catalog year 2022-23.

- Table 2 applies to ETSU-based sophomores in 2022-23 (the freshman year is completed). For these students, ETSU faculty will teach ENGR 3710 in Fall 2022 (the last time ETSU faculty will teach the course).
- Table 3 applies to ETSU-based juniors 2022-23 (the first two years are completed). For these students, ETSU faculty teach ECE 2050 in Fall 2022 and ECE 2140 in Spring 2023 (both are first-time offerings).

For ETSU-based seniors in 2022-23, they should stay on a previous catalog as they have not take 8 cr. hrs of ECE courses.

All tables show a summary of hours each university is teaching in the program to ensure that the 32-hr requirement of SACSCOC is met.

**Table 1A: BS in Engineering Curriculum for TTU-based students after revisions.\***

Freshman 32 hrs (+1)			
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ENGL 1010	3	ENGL 1020	3
HUFA Approved Elective	3	HUFA Approved Elective	3
MATH 1910	4	MATH 1920	4
CHEM 1110	4	CHEM 1120	4
ENGR 1110	2	ENGR 1120	2
ENGR 1020	1**		
	16+1		16
Sophomore 32 hrs			
ENGL 2130, 2230 or 2330	3	SPCH 2410	3
MATH 2110	4	MATH 2010	3
PHYS 2110	4	MATH 2120	3
CEE 2110—ETSU	3	PHYS 2120	4
ENGR 3710—TTU	2	ME 2330—ETSU	3
	16		16
Junior 34 hrs			
ECE 2050—ETSU	4	ECE 2140—ETSU	4
ENGR 3120—ETSU	3	ME 3023—ETSU	3
CEE 3110—TTU	3	ME 3010—TTU	3
ME 3210—TTU	3	ME 3720—TTU	3
SBS Approved Elective	3	ENGR 3720—ETSU	2
		SBS Approved Elective	3
	16		18
Senior 30 hrs			
ENGR 4900—TTU	3	ENGR 3020—TTU	3
ENGR 4950—ETSU	3	ENGR 4960—ETSU	3
ENGR 4510—TTU	3	Technical Elective***—TTU	3
ENGR 4750 – ETSU	1	Technical Elective***—ETSU	3
Technical Elective***—TTU	3	Free Elective	2
Technical Elective***—TTU	3		

	16		14
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\* Teaching responsibilities listed as either TTU or ETSU for SACSCOC joint degree programs. The teaching responsibility labels “TTU” and “ETSU” will not be included in the catalog.

*SACSCOC requirement for joint degrees: 32 hrs at least taught by each university*

TTU teaching hours by year: 0+2+12+18=32;

ETSU teaching hours by year: 0+6+16+10=32.

\*\* ENGR 1020 is not part of the 128 hr curriculum at TTU or ETSU.

\*\*\* The catalog gives a list of approved technical electives, some taught by TTU, some by ETSU. The revised list includes the following TTU courses: CEE 3320, CEE 3413, CEE 3610, ECE 3210, ECE 3330, ECE 3610, ME 3610, ME 3710, ME 4010 and the following ETSU-taught courses: ENTC 4037, ENTC 4237, ENTC 4257, MGMT 4617, SURV 2530.

**Table 1B: BS in Engineering Curriculum for ETSU-based students after revisions.\***

Freshman 32 hrs (+1)			
ENGL 1010	3	ENGL 1020	3
HUFA Approved Elective	3	HUFA Approved Elective	3
MATH 1910	4	MATH 1920	4
CHEM 1110	4	CHEM 1120	4
ENGR 1110	2	ENGR 1120	2
ENGR 1020	1**		
	16+1		16
Sophomore 34 hrs			
ENGL 2130, 2230 or 2330	3	SPCH 2410	3
MATH 2110	4	MATH 2010	3
PHYS 2110	5	MATH 2120	3
CEE 2110—ETSU	3	PHYS 2120	5
ENGR 3710—TTU	2	ME 2330—ETSU	3
	17		17
Junior 34 hrs			
ECE 2050—ETSU	4	ECE 2140—ETSU	4
ENGR 3120—ETSU	3	ME 3023—ETSU	3
CEE 3110—TTU	3	ME 3010—TTU	3
ME 3210—TTU	3	ME 3720—TTU	3

SBS Approved Elective	3	ENGR 3720—ETSU	2
		SBS Approved Elective	3
	16		18
Senior 28 hrs			
ENGR 4900—TTU	3	ENGR 3020—TTU	3
ENGR 4950—ETSU	3	ENGR 4960—ETSU	3
ENGR 4510—TTU	3	Technical Elective***—TTU	3
ENGR 4750 – ETSU	1	Technical Elective***—ETSU	3
Technical Elective***—TTU	3		
Technical Elective***—TTU	3		
	16		12

\* Teaching responsibilities listed as either TTU or ETSU for SACSCOC joint degree programs. The teaching responsibility labels “TTU” and “ETSU” will not be included in the catalog.

*SACSCOC requirement for joint degrees: 32 hrs at least taught by each university*

TTU teaching hours by year: 0+2+12+18=32;

ETSU teaching hours by year: 0+6+16+10=32.

\*\* ENGR 1020 is not part of the 128 hr curriculum at TTU or ETSU.

\*\*\* The catalog gives a list of approved technical electives, some taught by TTU, some by ETSU. The revised list includes the following TTU courses: CEE 3320, CEE 3413, CEE 3610, ECE 3210, ECE 3330, ECE 3610, ME 3610, ME 3710, ME 4010 and the following ETSU-taught courses: ENTC 4037, ENTC 4237, ENTC 4257, MGMT 4617, SURV 2530.

**Table 2: BS in Engineering Curriculum ETSU-based students after revisions—Cohort VI (students who started in 2021-22). Students have completed first year already (grayed out below).\***

Freshman 32 hrs (+1)			
ENGL 1010	3	ENGL 1020	3
HUFA Approved Elective	3	HUFA Approved Elective	3
MATH 1910	4	MATH 1920	4
CHEM 1110	4	CHEM 1120	4
ENGR 1110	2	ENGR 1120—TTU	2
ENGR 1020	1**		
	16+1		16
Sophomore 34 hrs			

ENGL 2130, 2230 or 2330	3	SPCH 2410	3
MATH 2110	4	MATH 2010	3
PHYS 2110	5	MATH 2120	3
CEE 2110—ETSU	3	PHYS 2120	5
ENGR 3710—ETSU (last time)	2	ME 2330—ETSU	3
	17		17
Junior 34 hrs			
ECE 2050—ETSU	4	ECE 2140—ETSU	4
ENGR 3120—ETSU	3	ME 3023—ETSU	3
CEE 3110—TTU	3	ME 3010—TTU	3
ME 3210—TTU	3	ME 3720—TTU	3
SBS Approved Elective	3	ENGR 3720—ETSU	2
		SBS Approved Elective	3
	16		18
Senior 28 hrs			
ENGR 4900—TTU	3	ENGR 3020—TTU	3
ENGR 4950—ETSU	3	ENGR 4960—ETSU	3
ENGR 4510—TTU	3	Technical Elective***—TTU	3
ENGR 4750 – ETSU	1	Technical Elective***—ETSU	3
Technical Elective***—TTU	3		
Technical Elective***—TTU	3		
	16		12

\* Teaching responsibilities listed as either TTU or ETSU for SACSCOC joint degree programs. The teaching responsibility labels “TTU” and “ETSU” will not be included in the catalog.

*SACSCOC requirement for joint degrees: 32 hrs at least taught by each university*

TTU teaching hours by year ENGR 1120 as well: 2+0+12+18=32;

ETSU teaching hours by year: 0+8+16+10=34.

\*\* ENGR 1020 is not part of the 128 hr curriculum at TTU or ETSU.

\*\*\* The catalog gives a list of approved technical electives, some taught by TTU, some by ETSU. The revised list includes the following TTU courses: CEE 3320, CEE 3413, CEE 3610, ECE 3210, ECE 3330, ECE 3610, ME 3610, ME 3710, ME 4010 and the following ETSU-taught courses: ENTC 4037, ENTC 4237, ENTC 4257, MGMT 4617, SURV 2530.

**Table 3: BS in Engineering Curriculum ETSU-based students after revisions—Cohort V (students who started in 2020-21). Students have completed first two years already (grayed out below).\***

Freshman 32 hrs (+1)			
ENGL 1010	3	ENGL 1020	3
HUFA Approved Elective	3	HUFA Approved Elective	3
MATH 1910	4	MATH 1920	4
CHEM 1110	4	CHEM 1120	4
ENGR 1110—TTU	2	ENGR 1120—TTU	2
ENGR 1020	1**		
	16+1		16
Sophomore 34 hrs			
ENGL 2130, 2230 or 2330	3	SPCH 2410	3
MATH 2110	4	MATH 2010	3
PHYS 2110	5	MATH 2120	3
CEE 2110—ETSU	3	PHYS 2120	5
ENGR 3710—ETSU	2	ME 2330—ETSU	3
	17		17
Junior 34 hrs			
ECE 2050—ETSU (first time)	4	ECE 2140—ETSU (first time)	4
ENGR 3120—ETSU	3	ME 3023—ETSU	3
CEE 3110—TTU	3	ME 3010—TTU	3
ME 3210—TTU	3	ME 3720—TTU	3
SBS Approved Elective	3	ENGR 3720	2
		SBS Approved Elective	3
	16		18
Senior 28 hrs			
ENGR 4900—TTU	3	ENGR 3020—TTU	3
ENGR 4950—ETSU	3	ENGR 4960—ETSU	3
ENGR 4510—TTU	3	Technical Elective***—TTU	3

ENGR 4750 – ETSU	1	Technical Elective***—ETSU	3
Technical Elective***—TTU	3		
Technical Elective***—TTU	3		
	16		12

\* Teaching responsibilities listed as either TTU or ETSU for SACSCOC joint degree programs. The teaching responsibility labels “TTU” and “ETSU” will not be included in the catalog.

*SACSCOC requirement for joint degrees: 32 hrs at least taught by each university*

TTU teaching hours by year: 4+0+12+18=34;

ETSU teaching hours by year: 0+8+14+10=32.

\*\* ENGR 1020 is not part of the 128 hr curriculum at TTU or ETSU.

\*\*\* The catalog gives a list of approved technical electives, some taught by TTU, some by ETSU. The revised list includes the following TTU courses: CEE 3320, CEE 3413, CEE 3610, ECE 3210, ECE 3330, ECE 3610, ME 3610, ME 3710, ME 4010 and the following ETSU-taught courses: ENTC 4037, ENTC 4237, ENTC 4257, MGMT 4617, SURV 2530.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## B. Course Additions/Changes.

- ENGR 2400. Engineering Design: A Mechanics, Materials, and Manufacturing Approach. Lec. 2, Lab. 2, Credit 3.**

Prerequisite: ENGR 1210 and either CHEM 1010 or CHEM 1110.

This course introduces the non-engineer to the subject of engineering design. Emphasis is placed on how mechanics, materials, and manufacturing are connected with each and with engineering design. Laboratory experiences to emphasize the connections are included.

### Course Changes.

#### 1. From:

ENGR (CEE) 3720 – Engineering Statistics

Lec. 2. Credit 2.

Prerequisite: MATH 1920. Engineering applications of probability, hypothesis testing, and confidence intervals.

#### To:

ENGR (CEE) 3720 – Principles of Engineering Statistics

Lec. 2. Credit 2.

Prerequisite: MATH 1920. Engineering applications of probability, hypothesis testing, and confidence intervals.

#### 2. From:

ENGR 1000. Introduction to Engineering Analysis. Lec. 3. Credit 3.

Prerequisite: ACT Math score of 22 or higher, or equivalent placement exam score, or C or better in MATH 1000.

This course introduces the math required in the first two years of most engineering curricula. It is an analysis course that provides a comprehensive

introduction to what math topics are used in undergraduate engineering, but it does not provide comprehensive coverage of any single topic. It increases preparation and provides motivation for the required math courses in engineering.

**To:**

**ENGR 1000. Introduction to Engineering Analysis. Lec. 3. Credit 3.**

**Prerequisite: ACT Math score of 22 or higher, or equivalent placement exam score, or C or better in MATH 1710.**

**This course introduces the math required in the first two years of most engineering curricula. It is an analysis course that provides a comprehensive introduction to what math topics are used in undergraduate engineering, but it does not provide comprehensive coverage of any single topic. It increases preparation and provides motivation for the required math courses in engineering**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## 21. Mechanical Engineering

### A. Concentration Curriculum Modification.

The ECE department has informed the ME department that they are making these changes to the ECE curriculum, effective Fall 2022:

- ECE 2011 Circuits 1 lab (1) is going away;
- ECE 2110 Intro to Digital Systems is going to 4 credit hours ECE 2140 (not 3 any more);
- ECE 2140 will be a prerequisite for ECE 3130 Microcomputer Systems (3).

Summary of the modifications to the Mechatronics concentration:

- Require ECE 2050 Circuits and Electronics (4), and remove ECE 2850 Circuits (3) and ECE 2011 Circuits I Lab (1);
- Require ECE 2140 Intro to Digital Systems (4), now 4 hours (adds 1 hour);
- Require ECE 3270 PLC (1) (adds 1 hour);
- Replace PHYS 2119 Physics II no lab (3) with PHYS 2120 Physics II with lab (4) (adds 1 hour);
- Drop ME 3220 Thermodynamics II (3), so the curriculum remains 128 hours total.

#### • Degree Map

- **BULLETIN YEAR: 2022-2023 Degree: BSME Mechatronics Concentration**

**MAJOR: Mechanical Engineering**

- *The major map illustrates one path to completing your major, based on faculty members' advice on course sequence and a department's tentative plans for scheduling courses. This document provides general direction.*

Course	Cr. Hrs.	Course	Cr. Hrs.
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<b>FIRST YEAR</b>				
Semester: Fall Total Credit Hours: 16			Semester: Spring Total Credit Hours: 18	
ENGL 1010 Writing	3		ENGL 1020 Writing II	3
Humanities/Fine Arts Elective 1	3		CSC 1300 Comp. Pro.	4
MATH 1910 Calculus 1	4		MATH 1920 Calculus II	4
CHEM 1110 Gen Chemistry	4		PHYS 2110 Physics I	4
ENGR 1110 Graphics	2		MATH 2010 Matrix Algebra	3
<b>Course</b>	<b>Cr. Hrs.</b>		<b>Course</b>	<b>Cr. Hrs.</b>
<b>SOPHOMORE YEAR</b>				
Semester: Fall Total Credit Hours: 17			Semester: Spring Total Credit Hours: 18	
ENGL 2130, 2230, or 2330 Lit.	3		COMM 2025 or PC 2500 Communication	3
MATH 2120 Diff. Equations	3		MATH 2110 Calculus III	4
ECE 2140 Intro Digital Systems	4		ECE 2050 Circuits & Electronics	4
PHYS 2120 Physics	4		ME 3001 Mech Engr Analysis	3
CEE 2110 Statics	3		ME 2330 Dynamics	3
			ME 2910 Prof. & Ethics	1
<b>Course</b>	<b>Cr. Hrs.</b>		<b>Course</b>	<b>Cr. Hrs.</b>
<b>JUNIOR YEAR</b>				
Semester: Fall Total Credit Hours: 15			Semester: Spring Total Credit Hours: 14	
ME 3010 Materials	3		ME 3050 DMC	3
ME 3023 Measurements	3		ME 3060 DMC Lab	1
ME 3210 Thermodynamics I	3		ECE 3270 PLC Lab	1
ME 3610 ME Dynamics of Machines	3		ME 3710 Heat Transfer	3
CEE 3110 Mech of Materials	3		ME 3720 Fluid Mechanics	3
			ME 4010 Machine Design	3
<b>Course</b>	<b>Cr. Hrs.</b>		<b>Course</b>	<b>Cr. Hrs.</b>
<b>SENIOR YEAR</b>				
Semester: Fall Total Credit Hours: 15			Semester: Spring Total Credit Hours: 15	
ME 4410 Senior Design I	3		ME 4370 Mechatronics	3
ME 4020 Aplied Mac Design or ME 4720 Thermal Design	3		ME 4420 Senior Design II	3
ME 4751 Energy Sys Lab	2		ECE 3210 or ME 4810	3
ECE 3130 Microprocessors	4		Social Behavior Sc. Elective	3
Social Behavior Sc. Elective 1	3		Humanities/Fine Arts Elective 2	3

**128 hours minimum required for graduation**

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## 22. Manufacturing & Engineering Technology

### A. Course Additions/Curriculum Changes.

1. MET 1115 - Introduction to Manufacturing Engineering Technology and Engineering Ethics  
Pre-requisite: None  
Lec. 2, Lab 2, Cr. 3  
Course Description: Introduction to the materials and processes used in the manufacturing of metals, ceramics, polymers, composites, and wood products. Added would be an ethics component to instill the values and ethics early in the academic careers of our students.  
Justification: This 3-credit hour course will replace MET 1100 (2 credit hours) and MET 2615 (1 credit hour), and better prepare students in the first-year.  
Effective date: Fall 2022
2. MET 3270 - Industrial Electronics and PLCs  
Prerequisites: MET 3200  
Lec. 2, Lab 2, Cr. 3  
Course Description: The fundamentals of process control, transducers, signal processing, feedback loops, activators, analog and digital controllers and PLCs.  
Justification: This 3-credit hour course will replace the ME 3260 & ECE 3270 combination and better prepare students prior to graduation.  
Effective date: Fall 2022

### Curriculum Changes.

Program Changes: BS in Engineering Technology

1. Replace the combination of (MET 1100 & MET 2615) with MET 1115
2. Replace the combination of (MET 3260 & ECE 3270) with MET 3270

### Curriculum

#### Freshman Year

##### *First Semester*

CHEM 1010 - Introductory Chemistry I Credit: 4. or  
CHEM 1110 - General Chemistry I Credit: 4.

ENGL 1010 - English Composition I Credit: 3.  
ENGR 1110 - Engineering Graphics Credit: 2.  
ENGR 1020 - Connections to Engineering and Technology Credit: 1. 1  
MATH 1730 - Pre-calculus Mathematics Credit: 5.

~~MET 1100 - Introduction to Manufacturing Engineering Technology Credit: 2.~~

MET 1115 - Introduction to Manufacturing Engineering Technology and Engineering Ethics

Total: ~~16-17~~ 17-18

##### *Second Semester*

ENGL 1020 - English Composition II Credit: 3.  
HIST 2010 - Early United States History Credit: 3.  
Humanities/Fine Arts Electives Credit: 6.

MATH 1845 - Technical Calculus Credit: 3.  
MET 2000 - Occupational Safety Credit: 2.  
Total: 17

### **Sophomore Year**

#### *First Semester*

ECON 2010 - Principles of Microeconomics Credit: 3.

ENGL 2130 - Topics in American Literature Credit: 3. or  
ENGL 2235 - Topics in British Literature Credit: 3. or  
ENGL 2330 - Topics in World Literature Credit: 3.

ENGR 1120 - Programming for Engineers Credit: 2.  
MET 2065 - Metal Manufacturing Technology Credit: 2.  
~~MET 2615 - Engineering Technology Ethics and Professionalism Credit: 1.~~

PHYS 2010 - Algebra-based Physics I Credit: 4. or  
PHYS 2110 - Calculus-based Physics I Credit: 4.  
Total: ~~15~~ 14

#### *Second Semester*

ECON 2020 - Principles of Macroeconomics Credit: 3.  
HIST 2020 - Modern United States History Credit: 3.  
MET 2400 - Statics and Strength of Materials Credit: 3.  
PHYS 2020 - Algebra-based Physics II Credit: 4. or  
PHYS 2120 - Calculus-based Physics II Credit: 4.

PSY 1030 - Introduction to Psychology Credit: 3.  
Total: 16

### **Junior Year**

#### *First Semester*

ACCT 3720 - Survey of Accounting Credit: 3.  
BMGT 3510 - Management and Organizational Behavior Credit: 3.

ME 3010 - Materials and Processes in Manufacturing Credit: 3. or  
MET 3100 - Applied Physical Metallurgy Credit: 3.

MET 3303 - CAD for Technology Credit: 3.  
MET 3713 - Methods Design and Work Measurement Credit: 3.  
Total: 15

#### *Second Semester*

COMM 2025 - Fundamentals of Communication Credit: 3. or  
PC 2500 - Communicating in the Professions Credit: 3.

ECON 3610 - Business Statistics I Credit: 3.  
MET 3003 - Principles of Metal Casting Credit: 3.  
MET 3200 - Applied Electricity and Electronics Credit: 3.

MET 3403 - Applied Machine Elements Credit: 3.  
Total: 15

### **Senior Year**

#### *First Semester*

Area of Concentration Credit: 6.<sup>2</sup>  
FIN 3210 - Principles of Managerial Finance Credit: 3.  
MET 3150 - Maintenance Technology I Credit: 2.  
MKT 3400 - Principles of Marketing Credit: 3.  
Total: 14

#### *Second Semester*

Area of Concentration Credit: 9.<sup>2</sup>  
LAW 2810 - Business Legal Environment and Ethics Credit: 3.  
MET 4620 - Senior Projects Credit: 3.  
Total: 15

#### Note:

- 1 ENGR 1020 does not count as part of the 123 credit hours BSET degree program
- 2 Select one of the following concentrations (15 credits):  
Concentration I - Mechatronics Engineering Technology  
MET 3060, ~~MET 3260~~, ~~ECE 3270~~, **MET 3270**, MET 4250 (5250) are required;  
select two courses from: MET 4000, MET 4210 (5210), MET 4220 (5220), MET 4990 (5990).

Concentration II - Engineering Technology Management  
MET 4310 (5310), MET 4550 (5550), and MET 4650 (5650) are required;  
select ~~two courses~~ **one course** from MET 3703, MET 4600 (5600), and MET 4990 (5990).

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

## **23. General Education**

### **A. Course Deletion.**

Deletion of MATH 1130 College Algebra from the list of approved General Education Mathematics courses

At a meeting held on 19 November 2021, the General Education Committee voted to delete MATH 1130 College Algebra from the list of mathematics courses that meet the General Education mathematics requirement. MATH 1130 and MATH 1710 Pre-Calculus Algebra are almost identical in content. MATH 1710 will remain on the list of mathematics courses that fulfill General Education requirements.

The list of courses that will fulfill the General Education mathematics requirement will change

**From:**

Mathematics (3 hours)

MATH 1010 Math for General Studies	3 hours
MATH 1130 College Algebra	3 hours
MATH 1420 Geometry Concepts for Teachers	3 hours
MATH 1530 Introductory Statistics	3 hours
MATH 1630 Finite Mathematics	3 hours
MATH 1710 Pre-Calculus Algebra	3 hours
MATH 1720 Pre-Calculus Trigonometry	3 hours
MATH 1730 Pre-Calculus Mathematics	3 hours
MATH 1830 Applied Calculus	3 hours
MATH 1910 Calculus I	3 hours

**To:**

Mathematics (3 hours)

MATH 1010 Math for General Studies	3 hours
MATH 1420 Geometry Concepts for Teachers	3 hours
MATH 1530 Introductory Statistics	3 hours
MATH 1630 Finite Mathematics	3 hours
MATH 1710 Pre-Calculus Algebra	3 hours
MATH 1720 Pre-Calculus Trigonometry	3 hours
MATH 1730 Pre-Calculus Mathematics	3 hours
MATH 1830 Applied Calculus	3 hours
MATH 1910 Calculus I	3 hours

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**24. Other Such Matters**

**A. Chair Election.**

Committee members were Melinda Anderson, Christy Killman, and Tom Timmerman.

Nominations for Dr. Jeremy Wendt to chair the committee for the next academic year.

**Motion to approve.** Julie Baker

**Second.** Kumar Yelamarthi

**Vote.** Motion carried

**No other such matters being presented, the meeting was adjourned at 4:28pm.**