MICHIGAN STATE UNIVERSITY  
University Committee on Curriculum  
SUBCOMMITTEE A – AGENDA  

Via Zoom  
January 20, 2022  
1:30 p.m.

PART I – NEW ACADEMIC PROGRAMS AND PROGRAM CHANGES

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

1. Request to change the requirements for the Bachelor of Arts degree in Interior Design in the School of Planning, Design and Construction.

   a. Under the heading Admission, replace paragraph three with the following:

   Selective admissions are made at the end of spring semester for Michigan State University and transfer students from those students who have met the criteria referenced. The final selection of students to be admitted to the major is based on the cumulative grade–point average of all courses taken and a grade–point average calculated for selected courses and portfolio review by faculty members.

   b. Under the heading Requirements for the Bachelor of Arts Degree in Interior Design, make the following changes:

      (1) In item 1., replace paragraph two with the following:

      The University’s Tier II writing requirement for the Interior Design major is met by completing Interior Design 442. This course is referenced in item 3. below.

      (2) Delete items 3. b. and 3. c.

      (3) Reletter item 3. d. to 3. b. and replace with the following:

      Any two of the following History of Arts options (6 to 9 credits):

      (1) Any History of Art course (3 to 4 credits).

      (2) Any History of Art course (3 to 4 credits).

      (3) IDES 490 Independent Study (3 to 5 credits) earned through the Interior Design Education Abroad program.

      (4) IDES 456 Historic Preservation and Sustainability (3 credits).

   Effective Fall 2022.

2. Request to change the requirements for the Agricultural Technology Certificate in Agricultural Industries in The Institute of Agricultural Technology.

   a. Under the heading Requirements for Agricultural Industries make the following changes:

      (1) In item 4. delete the following course:

      CSS 143 Introduction to Soil Science 2

      Add the following course:

      CSS 203 World of Soils 2

   Effective Summer 2022.
3. Request to change the requirements for the Agricultural Technology Certificate in Agricultural Operations in The Institute of Agricultural Technology.
   a. Under the heading Requirements for Agricultural Operations make the following change:
      (1) Change the total credits for the program from '60' to '60 to 65'.
      (2) In item 1. delete the following course:
           ABM 130 Farm Management I     3
           Add the following course:
           AFRE 130 Farm Management I     3
      (3) In item 3., add the following last sentence:
           Students at Muskegon Community College are required to complete 28 additional credits of course work. Students at Southwestern Michigan College are required to complete 30 to 31 additional credits of course work.

   Effective Spring 2022.

4. Request to change the requirements for the Agricultural Technology Certificate in Food Processing, Technology and Safety in The Institute of Agricultural Technology.
   a. Under the heading Requirements for Food Processing, Technology and Safety make the following changes:
      (1) In item 1., delete the following course:
           ABM 100 Decision-making in the Agri-Food System   3
           Add the following course:
           AFRE 100 Decision-making in the Agri-Food System   3
      (2) In item 3., delete ‘Lansing Community College’ and ‘Northwestern Michigan College’.
      (3) In item 3., add ‘Wayne County Community College District’.
      (4) In item 3., add ‘Students at Muskegon Community College are required to complete 28 additional credits of course work’.

   Effective Spring 2022.

5. Request to change the requirements for the Agricultural Technology Certificate in Fruit and Vegetable Crop Management in The Institute of Agricultural Technology.
   a. Under the heading Requirements for Fruit and Vegetable Crop Management make the following changes:
      (1) In item 1., delete the following course:
           ABM 130 Farm Management I     3
           Add the following course:
           AFRE 130 Farm Management I     3
(2) In item 1., change the credits of HRT 218 from ‘3’ to ‘2’.

(3) In item 2., change the elective credits from ‘7’ to ‘8’.

(4) In item 3., delete ‘Montcalm Community College’.

(5) In item 3., add ‘Students at Muskegon Community College are required to complete 32 additional credits of course work’.

Effective Spring 2022.

6. Request to change the requirements for the Agricultural Technology Certificate in Landscape Management in The Institute of Agricultural Technology.

a. Under the heading Requirements for Landscape Management make the following change:

   (1) In item 1., change the credits of HRT 218 from ‘3’ to ‘2’.

   (2) In item 2., change the elective credits from ‘3’ to ‘4’.

   (3) In item 3., delete ‘Montcalm Community College’ and ‘Southwestern Michigan College’.

   (4) In item 3., add ‘Students at Muskegon Community College are required to complete 32 additional credits of course work’.

Effective Spring 2022.

COLLEGE OF ENGINEERING

1. Request to change the Admission to the College statement in the College of Engineering. The University Committee on Undergraduate Education (UCUE) will consider this request at its January 10, 2022 meeting.

a. Under the heading Admission to the College replace the last paragraph with the following:

   Students interested in applying for a degree granting major in the College of Engineering may apply for admission during each semester, and applications will be reviewed after the end of each semester. Students must be admitted to a degree-granting college at the time they have completed 56 credits.

Effective Fall 2022.

2. Request to establish a Graduate Certificate in Secure and Connected Cyber-Physical Systems in the Department of Electrical and Computer Engineering. The University Committee on Graduate Studies (UCGS) recommended approval of this request at its October 18, 2021 meeting.

a. Background Information:

   The most recent U.S. Bureau of Labor Statistics 2019-2029 employment projections show that cyber security jobs are expected to grow at more than 8 times the rate for all occupations, about 4 times the rate for all STEM occupations, and more than 2.7 times the rate for all computer occupations. This demand is driven by the need to secure and build trust in a growing digitized economy as more and more consumers and businesses connect devices to the internet and more sensitive data is stored online and in the cloud. The increased demand for cybersecurity has led to academic departments across the nation to develop courses and programs for undergraduate and graduate students to build knowledge in cybersecurity and address the growing demand for cybersecurity-related workers. Federal departments and agencies such as NSF, NIST, DHS, DOE, and DoD emphasize cybersecurity education, training, and workforce development.

   The Department of Electrical and Computer Engineering (ECE) within the College of Engineering is well positioned to offer focused training to graduate students on secure and connected cyber-
physical systems (CPS), an important part of cybersecurity dealing with the security of networked intelligent devices and systems that have both computational and physical elements. Some CPS application areas include smart grid, autonomous transportation, healthcare, civil infrastructure, manufacturing, and consumer appliances. Courses associated with the certificate are already part of the ECE graduate curriculum.

b. **Academic Programs Catalog Text:**

The Graduate Certificate in Secured and Connected Cyber-Physical Systems is intended for students with interest in the modeling, design, and analysis of secure and networked cyber-physical systems (CPS). The certificate prepares students for both research work as well for jobs in government and industry insecure and connected CPS, which are growing rapidly.

**Requirements for the Graduate Certificate in Secure and Connected Cyber-Physical Systems**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 816</td>
<td>Cryptography and Network Security</td>
<td>3</td>
</tr>
<tr>
<td>ECE 830</td>
<td>Embedded Cyber-Physical Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 842</td>
<td>Performance Modeling of Communication Networks</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must have a minimum 3.00 grade-point average over the courses applied to the certificate for it to be awarded.

Effective Summer 2022.

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**COLLEGE OF NATURAL SCIENCE**

1. Request to delete the curriculum and degree requirements for the Master of Arts for Teachers degree in Mathematics in the Department of Mathematics. The University Committee on Graduate Studies (UCGS) will provide consultative commentary to the Provost after considering this request. The Provost will make a determination after considering the consultative commentary from the University Committee on Graduate Studies.

No new students are to be admitted to the program effective Spring 2020. No students are to be readmitted to the program effective Spring 2020. Effective Fall 2021, coding for the program will be discontinued and the program will no longer be available in the Department of Mathematics. Students who have not met the requirements for the Master of Arts for Teachers Degree in Mathematics through the Department of Mathematics prior to Fall 2021 will have to change their major.

2. Request to change the requirements for the Master of Science degree in Plant Biology in the Department of Plant Biology. The University Committee on Graduate Studies (UCGS) will consider this request at its January 20, 2022 meeting.

   a. Under the heading Requirements for the Master of Science Degree in Plant Biology make the following changes:

   (1) In item 1. a. delete the following course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLB 804</td>
<td>Frontiers in Plant Biology</td>
<td>2</td>
</tr>
</tbody>
</table>

Effective Fall 2022.
COLLEGE OF VETERINARY MEDICINE

1. Request to change the requirements for the Doctor of Veterinary Medicine degree in Veterinary Medicine in the College of Veterinary Medicine. The University Committee on Graduate Studies (UCGS) will consider this request at its January 24, 2022 meeting.

   a. Under the heading Admission to the Professional Program in Veterinary Medicine replace paragraph seven with the following:

      All prerequisite courses must be completed by the spring semester of the year of matriculation with a minimum grade of 2.0 in each course. One hundred percent of the science prerequisite courses must be completed at the time of application, with a minimum grade of 2.0 in each course.

Effective Fall 2022.
PART II - NEW COURSES AND CHANGES

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

FSC 421  Food Laws and Regulations
Spring of odd years. Summer of even years. 3(3-0) P: HNF 150 or FSC 211 or ABM 100 P: HNF 150 or FSC 211 or AFRE 100
Adoption, interpretation, and enforcement of laws and regulations governing food processing and foodservice systems. Impact of regulation on food production, availability, marketing, and safety. Effective Fall 2018 Effective Spring 2022

FSC 423  Functional Foods and Human Health
Spring of even years. 3(3-0) P: (HNF 150 or (HNF 311 or concurrently)) and (MMG 205 or MMG 301 or FSC 342) and ((BMB 200 or concurrently) or (BMB 401 or concurrently)) P: ((HNF 150) or HNF 150 and (MMG 201 or MMG 301 or FSC 342) and ((BMB 200 or concurrently) or (BMB 401 or concurrently)))

FOR 861  Applied Urban Forest Management
Fall of every year. 3(3-0) RB: FOR 461
NEW  Applications of software for integrated planning and management of urban forest resources. Effective Fall 2022

HRT 102  Plants for Food, Fun, and Profit
Fall of every year. Spring of every year. 2(2-0)
Introduction to the science and art of horticulture including plant breeding, ornamental plant and food production (organic and traditional), postharvest handling, horticultural industries and landscaping. Educate consumers about horticultural plants, products, and their relationship to the environment. Effective Summer 2016 Effective Fall 2022

HRT 362  Applied Crop Improvement
Spring of every year. Spring of odd years. 1(3-0) P: HRT 203 and PLB 105
History of plant improvement. Basic genetic principles of crop breeding and biotechnology. Class meets weeks 6 to 10 of the semester. Effective Fall 2014 Effective Fall 2022

HRT 403  Handling and Storage of Horticultural Crops
Fall of every year. 3(2-2) 3(3-0) P: BS 161 or PLB 105 R: Not open to freshmen or sophomores.
Biological principles involved in quality maintenance of horticultural products. Control of deterioration during harvesting, handling, transport, and storage. Biological principles involved in quality maintenance of horticultural products. Control of deterioration during harvesting, handling, transport, and storage. Food security. SA: HRT 482 Effective Fall 2014 Effective Fall 2022

HRT 405  Sustainable Practices for Horticultural Food Crop Production
Spring of every year. 1(1-0) P: HRT 203
Effects of horticultural practices on ecosystem services, integrated efficiency across perennial and annual food crop production systems. Impact of crops on the land and biodiversity. Management decision-making. Global forces impacting sustainability. DELETE COURSE Effective Fall 2022
HRT 460  Green Roofs and Walls
Fall of every year. Spring of every year. 2(2-0) Interdepartmental with Fisheries and Wildlife and Geography and Planning, Design and Construction. P: HRT 203 or FW 101 or GEO 206 or PDC 120 or EGR 100 R: Open to juniors or seniors or graduate students. Green roof and wall design and installation practices including plant species and substrates. Environmental impact, ecosystem services, integration with other environmental practices. Influence of economics, public policy, and industry organizations on the implementation of green roofs on a wide scale. Multidisciplinary nature of planning and implementation of successful green roof and wall projects.
**Effective Fall 2016 Effective Fall 2022**

CSS 105  Agricultural Industries Seminar
Fall of every year. 1(2-0) R: Open to agricultural technology students in the Agricultural Industries Major. Preparation for academic and professional success. Introduction to opportunities in the agriculture industry.
SA: AEE 105
DELETE COURSE
Effective Spring 2022

CSS 143  Introduction to Soil Science
Fall of every year. Spring of every year. 2(2-0) R: Open to agricultural technology students in the Institute of Agricultural Technology. Not open to students with credit in CSS 210. Soil and its impact on plant growth, plant and water relations, drainage, nutrients, soil as a resource, and erosion control techniques.
DELETE COURSE
Effective Spring 2022

CSS 201  Forage Crops
Fall of every year. 3(2-2) R: Open to undergraduate students or agricultural technology students. Forage crop production, management, and utilization; crop identification; soil fertilization; planting and harvesting of grasses and legumes. Identification, production, management, and use of grass and legume forage crops as hay, silage, and pasture.
**Effective Spring 2014 Effective Spring 2022**

CSS 203  World of Soils
Fall of every year. Spring of every year. 2(2-0) Not open to students with credit in CSS 210. Importance of soils in all ecosystems focusing on agriculture and urban landscapes.
Effective Spring 2022

NEW

CSS 460  Plant-Microbe Interactions
Spring of every year. 3(3-0) P: CSS 360 or MMG 301 or approval of department
NEW Plant responses to the surrounding microbial communities, including pathogens and mutualists. Evaluation of the role of microbial communities in plant health
Effective Spring 2022

CSS 485  Physiology in Plant Nutrition
Spring of every year. 3(3-0) Interdepartmental with Horticulture. P: PLB 301 or HRT 361 or approval of department
NEW Nutrient uptake, transport and storage in plants. Regulation of nutrient homeostasis in crop plants and genetic variation in plant nutrition.
Effective Summer 2021

CSS 898  Master's Research
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. R: Open to graduate students in the Crop and Soil Sciences major. Approval of department; application required. R: Open to graduate students in the Crop and Soil Sciences major. Approval of department; application required. A student may earn a maximum of 10 credits.
NEW Scholarly project for non-thesis (Plan B) master's degree Request the use of the Pass-No Grade (P-N) system.
Effective Fall 2021
PLP 105  Fundamentals of Applied Plant Pathology
Spring of every year. 2(2-2) 1(1-0) R: Open to students in the Institute of Agricultural Technology. Not open to students with credit in PLP 405. C: PLP 105L concurrently. Diseases of major agronomic and horticultural plants. Disease management. Offered first ten weeks of the semester. Effective Spring 2014 Effective Spring 2023

PLP 105L  Fundamentals of Applied Plant Pathology Lab
Spring of every year. 1(0-2) R: Open to students in the Agricultural Industries Major. C: PLP 105 concurrently. Identification of disease signs and symptoms in major agronomic and horticultural plants. Disease management techniques. Effective Spring 2023

PLP 898  Master's Research
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. R: Open to graduate students in the Plant Pathology major. Approval of department; application required. A student may earn a maximum of 6 credits. Effective Spring 2022

NEW  Identification of disease signs and symptoms in major agronomic and horticultural plants. Disease management techniques. Effective Spring 2023

COLLEGE OF ENGINEERING

CHE 872  Polymers and Composites: Manufacturing, Structure and Performance
Spring of even years. 3(3-0) Interdepartmental with Materials Science and Engineering. R: Open only to graduate students in the College of Engineering or in the Department of Chemistry. Structure-Property Relations of Polymers, Fibers, Fabrics and Composites, Material Selection, Manufacturing Processes, Process Induced Microstructure, Prediction of Composite Mechanical Properties, Dimensional Stability, Design of Cure Cycles, Mold Design. Effective Spring 2000 Effective Fall 2022

CHE 972  Viscoelasticity and Flow of Polymeric Materials
Spring of odd years. 3(3-0) Interdepartmental with Materials Science and Engineering. R: Open only to graduate students in the College of Engineering. Time dependent and steady flow properties of polymeric materials related to molecular and structural parameters. Examples of polymeric blends and composites with thermoplastic and thermoset components. Effective Spring 2021 Effective Fall 2022

MSE 801  Foundations of Materials Science and Engineering
Summer of every year. 3(3-0) RB: Undergraduate degree in science or engineering related to Materials Science. RB: Students who are considering a graduate degree in materials science and engineering but do not have an undergraduate degree in materials science and engineering. Structure-Property-Processing-Performance interrelationship of metals, ceramics and polymers. Phase diagrams, thermomechanical treatments, physical and mechanical properties, processing, diffusion, microstructure studies, environmental effects. Effective Summer 2024 Effective Summer 2022
MSE 876  Advanced Polymeric Materials  
Fall of even years. 3(3-0)  
Interdepartmental with Chemical Engineering. RB: At least one semester of undergraduate level course in Polymeric Materials. R: Open to graduate students in the College of Engineering or approval of department.  
Advanced topics in polymer structure and properties. Thermoplastics, thermosets, polyblends and elastomers. Processing techniques. Deformation and mechanical properties. Thermal, optical and chemical properties. Composites.  
SA: MSM 876  
Effective Fall 2002 Effective Fall 2022

CE 800  Structural Dynamics  
Fall of every year. 2(2-0)  
NEW  
Effective Spring 2022

CE 802  Introduction to Dynamics and Earthquake Engineering  
Fall of every year. 2 credits. RB: MSM 306 Not open to students with credit in ME 461.  
DELETE COURSE  
Effective Spring 2022

CE 803  Structural Dynamics  
Fall of every year. 1(1-0) C: CE 802 concurrently.  
DELETE COURSE  
Effective Spring 2022

CE 839  Smart Materials and Structures  
Spring of even years. 3(3-0) RB: CE 407 and CE 804  
NEW  
This course provides an introduction to the field of smart materials and structures. The content focuses on the characteristics of different types of smart materials, their properties, and constituent behavior.  
Effective Spring 2022

CSE 232  Introduction to Programming II  
Fall of every year. Spring of every year. Summer of every year. 4(3-2) P: (CSE 231 or CMSE 202) and (LB 118 or MTH 124 or MTH 132 or MTH 152H)  
Continuation of object-centered design and implementation in C++. Building programs from modules. Data abstraction and classes to implement abstract data types. Static and dynamic memory allocation. Data structure implementation and algorithm efficiency. Lists, tables, stacks, and queues. Templates and generic programming.  
SA: CSE 330  
Effective Fall 2017 Effective Fall 2022

CSE 260  Discrete Structures in Computer Science  
Fall of every year. Spring of every year. Summer of every year. 4(5-0) P: MTH 133 or MTH 126 or MTH 153H or LB 119  
SA: CPS 260  
Effective Fall 2018 Effective Fall 2022
CSE 290  
Independent Study in Computer Science  
Fall of every year. Spring of every year. **Summer of every year**, 1 credit. A student may earn a maximum of 3 credits in all enrollments for this course. R: Approval of department; application required. 
Supervised individual study in an area of computer science.  
SA: CPS 290  
**Effective Spring 2014** Effective Fall 2022

CSE 320  
Computer Organization and Architecture  
Fall of every year. Spring of every year. **Summer of every year**, 3(3-0) P: CSE 232 and CSE 260  
R: Open to students in the Department of Computer Science and Engineering or in the Computer Engineering Major or in the Lyman Briggs Computer Science Coordinate Major or in the Lyman Briggs Computer Science Major or in the Computer Science Disciplinary Teaching Minor. Not open to students with credit in ECE 331.  
Boolean algebra and digital logic. Combinational and sequential circuits. Representations of data and instructions. Architecture and major components of computer systems. Assembly language programming and interfacing to high level languages. Assembler and linker processing.  
SA: CPS 320  
**Effective Spring 2014** Effective Fall 2022

CSE 490  
Independent Study in Computer Science  
Fall of every year. Spring of every year. **Summer of every year**, 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. R: Open to students in the Computer Engineering Major or in the Computer Science Major. Approval of department; application required. 
Supervised individual study in an area of computer science.  
SA: CPS 490  
**Effective Fall 2015** Effective Fall 2022

CSE 498  
Collaborative Design (W)  
Fall of every year. Spring of every year. 4(2-4) P: (CSE 402 or CSE 415 or CSE 422 or CSE 431 or CSE 440 or CSE 450 or CSE 471 or CSE 476 or CSE 477 or CSE 482) and (CSE 402 or CSE 420 or CSE 425 or CSE 435 or CSE 440 or CSE 460 or CSE 472 or CSE 477 or CSE 480 or CSE 482) and (CSE 335 and completion of Tier I writing requirement) and (CSE 300 and CSE 325 and CSE 335) and completion of Tier I writing requirement) R: Open to students in the Computer Science Major or in the Lyman Briggs Computer Science Coordinate Major.  
Development of a comprehensive software and/or hardware solution to a problem in a team setting with emphasis on working with a client. Participation in a design cycle including specification, design, implementation, testing, maintenance, and documentation. Issues of professionalism, ethics, and communication. Development of a comprehensive software and/or hardware solution to a problem in a team setting with emphasis on working with a client. Participation in a design cycle including specification, design, implementation, testing, maintenance, and documentation. Issues of professionalism, ethics, and communication. Students may be asked to sign a non-disclosure agreement ("NDA") or an assignment of intellectual property rights ("IP Assignment") to work with some project sponsors.  
SA: CSE 449, CSE 478, CSE 479  
**Effective Fall 2019** Effective Fall 2022

ECE 855  
Non-cooperative Game Theory  
Fall of even years. 3(3-0) A student may earn a maximum of 3 credits in all enrollments for this course.  
NEW  
Elements of a game, zero-sum games, non-zero-sum games, dynamic games, stochastic games  
**Effective Fall 2022**
ECE 858  Networked Control Systems  
Fall of every year. 3(3-0) A student may earn a maximum of 3 credits in all enrollments for this course. P: ECE 851

NEW  
Fundamentals on dynamics, estimation, and control of network systems, algebraic graph theory, multi-agent coordination.
Effective Fall 2022

ECE 871  Micro-electro-mechanical Systems Fabrication  
Spring of every year. 3(3-0) P: ECE 870 or ECE 477 RB: ECE 477  
Development of a complete integrated microsystem from inception to final test. Design, fabrication and testing of integrated Microsystems. Development of a complete multichip microsystem containing sensors, signal processing, and an output interface. Basic MOS device and circuit processes, wafer bonding and micromachining, low power portable devices and diamond MEMS chips. Design, simulation, fabrication (at Lurie Nanofabrication Facility, U of Michigan) and testing of integrated microsystems. Development of a complete microsystem containing sensors and actuators using Silicon On Glass (SOG) MEMS process. Basic E/D MOS circuits will be designed and simulated but will not be fabricated. The fabricated MEMS chips will be tested at MSU.  
Effective Spring 2004 Effective Spring 2023

ECE 960C  Networked and Embedded Control Systems  
Spring of odd years. 3(3-0) P: ECE 851  
Effective Fall 2016 Effective Fall 2022

EGR 102  Introduction to Engineering Modeling  
Fall of every year. Spring of every year. Summer of every year. 2(1-3) P: (MTH 132 or concurrently) or (MTH 152H or concurrently) or (LB 118 or concurrently) R: Open to students in the College of Engineering or in the Lyman Briggs College. Not open to students with credit in CSE 131.  
Application of systematic approaches to engineering problems. Problem decomposition and identification of a solution approach. Solution using tools such as advanced spreadsheet features and MATLAB. Data representation, curve fitting and analysis. Mathematical modeling of engineering systems. Application of principles through team-based engineering projects.  
Effective Fall 2014 Effective Fall 2022

COLLEGE OF HUMAN MEDICINE

HM 591  Special Problems in Human Medicine  
Fall of every year. Spring of every year. Summer of every year. 1 to 34 credits. A student may earn a maximum of 36 credits in all enrollments for this course. A student may earn a maximum of 54 credits in all enrollments for this course. R: Open only to graduate-professional students in the College of Human Medicine. R: Open to graduate-professional students in the College of Human Medicine.  
Work under the direction of a faculty member on an experimental, theoretical, or applied problem that requires a broad, interdisciplinary approach. Request the use of the Pass-No Grade (P-N) system. Request the use of ET-Extension to postpone grading. The work for the course must be completed and the final grade reported within 6 semesters after the end of the semester of enrollment. The work for the course must be completed and the final grade reported within 2 semesters after the end of the semester of enrollment.  
Effective Fall 1992 Effective Fall 2021
COLLEGE OF NATURAL SCIENCE

BLD 805 Communication in the Sciences
Fall of every year, Summer of every year. 2(2-0)
Professional communication in clinical laboratory science, including article and proposal writing, thesis writing, posters, and presentations.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.
Effective Summer 2015 Effective Spring 2021

NSC 495 HBIO 495 Capstone in Human Biology (W)
Fall of every year. Spring of every year. 3(3-0) P: Completion of Tier I writing requirement. R: Open to seniors in the Human Biology Major.
Integration of human biology disciplines with a focus on health and disease.
Effective Fall 2019 Effective Fall 2022

NSC 496 HBIO 496 Directed Study in Human Biology
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: Completion of Tier I writing requirement.
Directed studies in human biology.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 1 semester after the end of the semester of enrollment.
Effective Fall 2014 Effective Fall 2022

NSC 497 HBIO 497 Internship in Human Biology
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: Completion of Tier I writing requirement. Not open to students with credit in NSC 493.
Practical experience applying human biology training outside the classroom setting.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 2 semesters after the end of the semester of enrollment.
Effective Fall 2014 Effective Fall 2022

NSC 498 HBIO 498 Research in Human Biology
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: Completion of Tier I writing requirement.
Research in faculty laboratories
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 2 semesters after the end of the semester of enrollment.
Effective Fall 2014 Effective Fall 2022

STT 421 Statistics I
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: MTH 103 or MTH 110 or MTH 116 P: MTH 103 or MTH 116 or MTH 116 or MTH 103B or MTH 124 or (MTH 132 or concurrently) or (MTH 133 or concurrently) or (MTH 234 or concurrently) or (MTH 299 or concurrently) Not open to students with credit in STT 200 or STT 201.
Basic probability, random variables, and common distributions. Estimation and tests for one-, two-, and paired sample problems. Introduction to simple linear regression and correlation, one-way ANOVA.
Effective Fall 2014 Effective Summer 2020
STT 422  Statistics II
Fall of every year.  Spring of every year.  Summer of every year.  3(3-0) P: STT 421 or STT 441 P:
STT 421 or STT 442 Not open to students with credit in STT 464.
Goodness of fit and other non-parametric methods. Linear models including multiple
regression and ANOVA for simple experimental designs.
Effective Fall 2017  Effective Summer 2020

STT 461  Computations in Probability and Statistics
Spring of every year.  3(3-0) P: (STT 441 and CSE 231) and (MTH 309 or MTH 314 or MTH 317H
or MTH 415) P: (CMSE 201 or CSE 231) and (MTH 309 or MTH 314 or MTH 317H or MTH 415)
and STT 441
Computer algorithms for evaluation, simulation and visualization. Sampling and
prescribed distributions. Robustness and error analysis of procedures used by statistical
packages. Graphics for data display, computation of probabilities and percentiles.
Effective Fall 2014  Effective Spring 2022

COLLEGE OF OSTEOPATHIC MEDICINE

OST 594  Spirituality and Osteopathic Medicine
Fall of every year. Spring of every year.  1(1-0) A student may earn a maximum of 6 credits in all
enrollments for this course. R: Open to osteopathic medicine students in the College of
Osteopathic Medicine.
NEW  An introduction to the role of Spirituality in Osteopathic Philosophy.
Request the use of the Pass-No Grade (P-N) system.
Effective Spring 2022