College of Science Curriculum Committee

Minutes

September 10, 2020

https://unt.zoom.us/j/98741941283

3:30 pm – 5:00 pm

**Voting**:

☒ Sushama Dandekar ☒ David Hoeinghaus ☒ Kris Sherman

☒ Nirmala Naresh ☒ Duncan Weathers

**Non-Voting**:

☒ Brandy Ellis ☒ John Quintanilla ☐ Guido Verbeck

**Visitors:**

☒ Jody Acker ☒ Warren Burggren ☒ Vince Lopes

☒ Becky Weber ☒ Hong Wang

1. Welcome
2. Notes from UCC / Graduate Council
3. Undergraduate Program (for 2021-22 catalog)
	1. Department of Biological Sciences
4. **BIOL 4030 – Physiological Ecology APPROVED**

[**https://unt.curriculog.com/proposal:8951/form**](https://unt.curriculog.com/proposal%3A8951/form)

**Proposed: 2021-22 New Course**

*Justification: This course will serve as an additional elective choice for fulfilling the lecture and laboratory course requirements for the Ecology degree program. Considering the rapid growth in this program, additional courses such as this provide options for students to meet their elective requirements while specializing in areas of interest. Moreover, this course will fill an important niche by addressing topics that bridge physiological and ecological concepts. In particular, our students are increasingly interested in training related to addressing ecological responses to environmental changes, such as climate change, and physiological ecology provides a primary avenue for assessing effects of warming climate and other environmental changes on populations. The laboratory component will give students hands-on experience to foster a deeper understanding of these concepts and introduce them to the scientific methods for investigating these topics.*

1. **BIOL 4250 – Pharmacology: Biological Basis of Drug Action APPROVED**

[**https://unt.curriculog.com/proposal:8959/form**](https://unt.curriculog.com/proposal%3A8959/form)

**Proposed: 2021-22 Change in Existing Course (NOT Core Curriculum)**

*Justification: Over the last several years, the instructor compiled data which indicate that students that have not completed some physiology coursework prior to taking this course typically perform poorly or do not complete the course. The proposed prerequisite change to include a physiology course is expected to improve student performance and reduce DFWI rates.*

1. **BIOL 4506 – Biology of Extreme Environments APPROVED**

[**https://unt.curriculog.com/proposal:8953/form**](https://unt.curriculog.com/proposal%3A8953/form)

**Proposed: 2021-22 New Course**

*Justification: This course is intended to fill in some of the “skills development” gaps for our undergraduate students, using extreme environments and the variety of unique adaptations across the domains of life that enable species to thrive under harsh conditions as the scientific context. While some students are probably attracted by the time of day the course is offered (evening) or the fact there are no exams per se, each student must write essays (which receive line-by-line feedback), give presentations (which are formally critiqued with a rubric), prepare a cv and application letter (which are also evaluated), etc. The course is designed as an upper level elective, but has somewhat morphed into what several students have called a “capstone” course (their words). By nature of the broad topics covered, it ‘brings it all together’ for the students. In the three years that the course has been taught as a special topics course, enrolled students have included Biology and Ecology majors, but also students from Psychology and Geography. The course has been evaluated very favorably. The last time it was offered, the Challenge and Engagement Index was 6.2/7, the combined medial evaluation was 5.0/5.0 and the Adjusted Combined Media was 4.4/5.0, with 56% of the class (28 enrolled) responding to the SPOT evaluations.*

1. **BIOL 4810 – Biocomputing APPROVED**

[**https://unt.curriculog.com/proposal:8957/form**](https://unt.curriculog.com/proposal%3A8957/form)

**Proposed: 2021-22 Change in Existing Course (NOT Core Curriculum)**

*Justification: Changed prerequisite from 'Consent of department' to 'Consent of instructor' because the course is cross-listed across multiple departments and departments defer to the instructor for decisions on enrollment. The proposed change simply formalizes the currently used decision-making practice and makes the process more clear for students.*

1. **BIOL 4820 – Computational Epidemiology APPROVED**

[**https://unt.curriculog.com/proposal:8958/form**](https://unt.curriculog.com/proposal%3A8958/form)

**Proposed: 2021-22 Change in Existing Course (NOT Core Curriculum)**

*Justification: Changed prerequisite from 'Consent of department' to 'Consent of instructor' because the course is cross-listed across multiple departments and departments defer to the instructor for decisions on enrollment. The proposed change simply formalizes the currently used decision-making practice and makes the process more clear for students.*

1. **Biological Sciences Minor APPROVED**

[**https://unt.curriculog.com/proposal:8956/form**](https://unt.curriculog.com/proposal%3A8956/form)

**Proposed: 2021-22 Change in Program**

*Justification: Added BIOL 2302/2312 Human A&P II with lab to increase options available for students. This is particularly relevant for pre-health students, kinesiology majors, and similar. Clarified in the program notes that students are required to complete prerequisites for all Biology electives, including those from other departments such as Chemistry.*

1. **Ecology for Environmental Science, BS APPROVED**

[**https://unt.curriculog.com/proposal:8954/form**](https://unt.curriculog.com/proposal%3A8954/form)

**Proposed: 2021-22 Change in Program**

*Justification: Added recently developed courses (i.e. BIOL 4085) or courses with renewed offerings (i.e. BIOL 4501/4502) that serve as upper level electives. Removed BIOL 4580 from electives as it is not regularly offered nor expected to be offered in the near future. This change will eliminate confusion by students about which courses are or are not eligible as electives, as well as eliminate the need for advisors to individually approve courses as electives.*

1. **Medical Laboratory Sciences, BS APPROVED**

[**https://unt.curriculog.com/proposal:8955/form**](https://unt.curriculog.com/proposal%3A8955/form)

**Proposed: 2021-22 Change in Program**

*Justification: Since CHEM 2370/3210 Organic Chemistry and Lab is in the Foundation of the other majors within the department, students are expected to understand this material in all advanced biology courses. Moving these courses from the science course requirements into the foundation requirements will ensure that Medical Laboratory Science students are adequately prepared for their advanced coursework. MGMT 3721 Essentials of Organizational Behavior for Non-Business Majors was added as an option in place of MGMT 3720 Organizational Behavior as MGMT 3721 was developed specifically for non-majors and MGMT 3720 is expected to be reserved for majors only in the near future.*

1. **Biochemistry BS with a Concentration in Forensic Science APPROVED**

[**https://unt.curriculog.com/proposal:8967/form**](https://unt.curriculog.com/proposal%3A8967/form)

**Proposed: 2021-22 Add New or Delete Existing Major/Professional Field, Concentration, Option, Minor, Certificate, or Specialization**

*Justification: The College of Science and Department of Biological Sciences wish to combine the existing requirements for our students interested in forensic science within a new concentration for our BS Biochemistry degree.*

*At present, undergraduate students interested in forensic science choose one of three majors (BS Biology, BS Biochemistry, or BS Chemistry) and also our Forensic Science certificate. As these requirements appear in two different places in these students' degree audits, some students have been confused as to what was required of them over the years. Furthermore, since forensic science courses do not appear in the major requirements, the existing split of requirements between major and certificate has unnecessarily troubled past students who are veterans and using VA benefits to finance their education.*

*With the proposed change, there would be absolutely no changes in the courses that are currently required of students interested in forensic science. The courses would merely be collected into one place, a concentration within the major.*

*Under this proposal, we do not plan to eliminate the existing Forensic Science certificate, as has been utilized by post-baccalaureate students in the past. However, language would be included to prevent students from majoring under this new concentration and also earning the Forensic Science certificate.*

1. **Biology BS with a concentration in Forensic Science APPROVED**

[**https://unt.curriculog.com/proposal:8964/form**](https://unt.curriculog.com/proposal%3A8964/form)

**Proposed: 2021-22 Add New or Delete Existing Major/Professional Field, Concentration, Option, Minor, Certificate, or Specialization**

*Justification: The College of Science and Department of Biological Sciences wish to combine the existing requirements for our students interested in forensic science within a new concentration for our BS Biology degree.*

*At present, undergraduate students interested in forensic science choose one of three majors (BS Biology, BS Biochemistry, or BS Chemistry) and also our Forensic Science certificate. As these requirements appear in two different places in these students' degree audits, some students have been confused as to what was required of them over the years. Furthermore, since forensic science courses do not appear in the major requirements, the existing split of requirements between major and certificate has unnecessarily troubled past students who are veterans and using VA benefits to finance their education.*

*With the proposed change, there would be absolutely no changes in the courses that are currently required of students interested in forensic science. The courses would merely be collected into one place, a concentration within the major.*

*Under this proposal, we do not plan to eliminate the existing Forensic Science certificate, as has been utilized by post-baccalaureate students in the past. However, language would be included to prevent students from majoring under this new concentration and also earning the Forensic Science certificate.*

* 1. Department of Chemistry
1. **Chemical Technicians Minor APPROVED**

[**https://unt.curriculog.com/proposal:8774/form**](https://unt.curriculog.com/proposal%3A8774/form)

**Proposed: 2021-22 Program Deletion**

*Justification: We are no longer offering this minor, as the organization that provided the certificate for students no longer does so. The minor in Chemistry allows students to get the same experience as is offered by this minor.*

* 1. Department of Mathematics
1. **MATH 0350 – Beginning Algebra APPROVED**

[**https://unt.curriculog.com/proposal:8678/form**](https://unt.curriculog.com/proposal%3A8678/form)

**Proposed: 2021-22 New Course**

*Justification: There are students who are declaring majors in the College of Science, College of Engineering and the College of Business who are not college ready and are lacking the skills to be successful in the co-requisite course. This course will develop and strengthen the beginning algebra skills and prepare students for future enrollment in the co-requisite course, whether it be MATH 1100 or MATH 1180.*

1. **MATH 1581 – Survey of Mathematics with Applications and Algebra Review**

[**https://unt.curriculog.com/proposal:8457/form**](https://unt.curriculog.com/proposal%3A8457/form) **APPROVED**

**Proposed: Deletion of Course from Core Curriculum**

*Justification: Math 1581 has not been offered for several years. Students will take Math 1580 instead.*

1. **MATH 1581 – Survey of Mathematics with Applications and Algebra Review**

[**https://unt.curriculog.com/proposal:8526/form**](https://unt.curriculog.com/proposal%3A8526/form) **APPROVED**

**Proposed: 2021-22 Course Deletion**

*Justification: Math 1581 has not been offered for several years. Students will take Math 1580 instead.*

* 1. Department of Physics
1. **PHYS 3910 – Intermediate Computational Modeling of Physical Systems**

[**https://unt.curriculog.com/proposal:8376/form**](https://unt.curriculog.com/proposal%3A8376/form) **APPROVED**

**Proposed: 2021-22 New Course**

*Justification: This course offers an intermediate-level survey of computer-based modeling of physical systems. The content of the course includes the theory and hands-on implementation of computational approaches to solve problems related to classical mechanics, nonlinear dynamics, oscillations, electromagnetic fields, simple random problems, and thermal systems. For this purpose, the course will describe intermediate-level numerical methods related to function analysis (roots of linear and non-linear equations, derivatives, integrals), linear algebra (linear systems, eigenvalues and eigenvectors), optimization and ordinary differential equations. In addition, the course covers data analysis, regression, function fitting and an introduction to machine learning approaches on large datasets.*

IV. Graduate Program for the (2021-22 catalog)

1. Department of Biological Sciences
2. **BIOL 5030 – Physiological Ecology APPROVED**

[**https://unt.curriculog.com/proposal:8952/form**](https://unt.curriculog.com/proposal%3A8952/form)

**Proposed: 2021-22 New Course**

*Justification: This is the graduate level offering of a new course that will primarily contribute to the undergraduate Ecology and Biology degree programs. Graduate and undergraduate courses will be taught concurrently. This course will serve as an additional elective choice for fulfilling the lecture and laboratory course requirements for the Ecology degree program, and provide formal coursework for graduate students with research interests in physiology and ecology. Considering the rapid growth in this program, additional courses such as this provide options for students to meet their elective requirements while specializing in areas of interest. Moreover, this course will fill an important niche by addressing topics that bridge physiological and ecological concepts. In particular, our students are increasingly interested in training related to addressing ecological responses to environmental changes, such as climate change, and physiological ecology provides a primary avenue for assessing effects of warming climate and other environmental changes on populations. The laboratory component will give students hands-on experience to foster a deeper understanding of these concepts and introduce them to the scientific methods for investigating these topics.*

1. Department of Chemistry

 1. **Chemistry, MS APPROVED**

[**https://unt.curriculog.com/proposal:8899/form**](https://unt.curriculog.com/proposal%3A8899/form)

 **Proposed: 2021-22 Change in Program**

 *Justification: In the program requirements, we wish to only require completion of two core courses. We also are adding an additional core area in chemical biology.*

*Concerning the admission requirements: over the last several years, the GRE has come under fire for being a cost-prohibitive and biased exam. Research has indicated GRE scores only had a slight predictive effect on first semester grades, and there was no correlation on any other measures of student success, including in obtaining funding fellowships or grants. The GRE examination appears to serve as a barrier to equitable admission. A large number of universities have made the move to not require the GRE. The faculty in the Chemistry Department have come to recognize the bad consequences of GRE requirement, and has thus decided to eliminate GRE requirement for graduate admission. This change will affect both the MS and PhD programs.*

 2. **Chemistry, PhD APPROVED**

[**https://unt.curriculog.com/proposal:8901/form**](https://unt.curriculog.com/proposal%3A8901/form)

 **Proposed: 2021-22 Change in Program**

 *Justification: Concerning program requirements: We wish to make a slight modification in the number of core courses that students must pass.*

*Concerning admission requirements: Over the last several years, the GRE has come under fire for being a cost-prohibitive and biased exam. Research has indicated GRE scores only had a slight predictive effect on first semester grades, and there was no correlation on any other measures of student success, including in obtaining funding fellowships or grants. The GRE examination appears to serve as a barrier to equitable admission. A large number of universities have made the move to not require the GRE. The faculty in the Chemistry Department have come to recognize the bad consequences of GRE requirement, and has thus decided to eliminate GRE requirement for graduate admission. This change was included in the parallel proposed changes to the MS program.*

1. Department of Mathematics
2. **Departmental Description APPROVED**

[**https://unt.curriculog.com/proposal:8997/form**](https://unt.curriculog.com/proposal%3A8997/form)

**Proposed: 2021-22 Change in Program**

*Justification: Throughout, we have improved the outdated wording of the document. In particular, the current research areas of the department are now listed under Research. Moreover, we revised the admission requirements by stating that we require the general GRE scores, but that the Math Subject GRE is only recommended.*

1. Department of Physics
2. **Physics BS with Grad Track Option leading to Physics MS APPROVED**

[**https://unt.curriculog.com/proposal:8925/form**](https://unt.curriculog.com/proposal%3A8925/form)

**Proposed: 2021-22 Add Grad Track Pathway**

*Justification: Physics has always been a core of academics, and closely associated areas such as computation, quantum computing, material science, and nanophysics are growing. Students trained in physics can work in either the academic or industry fields. UNT has a strong presence in theoretical and experimental physics, and has an increasing presence in computational physics, so we are well-positioned to train students with problem solving and critical thinking skills in all areas in order to meet the demand of such skills in the current job market.*

*The BS Grad Track program is designed to encourage talented undergraduates to consider remaining at UNT for an advanced degree, with a view to attracting them to the PhD program. Currently there are 19 UNT physics graduate students having a BS from UNT (27%). This percentage has been steadily growing over the past several years. However, we do have many top students pursuing graduate study in other schools. A physics grad track would make UNT even more attractive to UNT physics majors considering graduate school due to the benefits students would receive such as early training in research, double counted courses, and graduate earlier. We expect it will also encourage some TAMS students to pursue MS study with physics here.*

V. Approve the minutes