

Tuesday, January 25, 2022, 9:00am, Zoom

Chair Jill Anderson called the meeting to order at 9:00am on Tuesday, January 25, 2022, via Zoom Meeting ID: 81034195588; a quorum was present.

**Members Present**

Ramesh Adhikari, Jill Anderson (Chair), Brad Ballinger, Kayla Begay, Vincent Biondo, Travis Brunner, Carmen Bustos-Works, Christine Cass, Eden Donahue, Heather Madar, Cindy Moyer, Marissa Ramsier, Cutcha Risling-Baldy, Justus Ortega, Jenni Robinson, Sheila Rocker-Heppe, Marisol Ruiz-Gonzalez, Mark Wicklund, George Wrenn, Rick Zechman

**GEAR Chair:** Lisa Tremain

**CDC Chair:** Lucy Kerhoulas

**APC Chair:** Maxwell Schnurer

**Student Representatives:** Vacant

**Administrative Coordinator:** Mary Watson

**Curriculum Coordinator:** Bella Gray

Current Vacancies: Graduate Council representative, Student representatives (2)

**Consent and Voting Action Calendar**

**Voting Action Calendar:**

Discussion ensued about German Studies 22 unit minor, and is summarized below:

Bella noted that according to the new minor policy, any new minor above 18 units would be required to have nine units of upper division courses, so the CDC was wondering if the German Studies minor would have to abide by that or whether it could be “grandparented in” with the current course configuration, since it is an edit to an existing program, and not a new program entirely.

Chair Anderson and Maxwell agreed that this and others like it could be grand-parent-ed in with the old minor policy.

Justus noted that whatever is decided should be recorded somewhere for posterity. Jill clarified that this is a University policy (Minors, Certificates, and Concentrations Policy) and noted that this decision could be recorded in Curriculog and will be in the minutes of this meeting.

Jenni cautioned that not all minors submitting edits should be grandparented in, just to be consistent with the policy. Maxwell noted that the policy was written to allow new programs to be created and moved through while the policy was being written over the course of a few months, but that it isn’t meant to allow a shell of a minor to be completely changed and still follow the old policy—he also noted that the APC is going to make an amendment to navigate

the differences between certificates and minors, so if further clarity is needed in this case, then the committee would be happy to add clarity here.

Jill summarized that since this program was in the works while the new policy was being written, it should be allowed to abide by the old unit requirement, but that from now on any future proposals related to minors and certificates, even if they're changes to existing ones, would need to abide by the new policy. At the same time, existing minors and certificates that are working fine right now and aren't undergoing new edits aren't expected to be revised to align with the policy

Cindy noted she is in favor of the APC amending the policy to answer these questions clearly and in plain sight, not just in meeting minutes somewhere.

Discussion ensued about the Environmental systems changes, and is summarized below:

Justus asked, in regard to the Environmental Systems Course Requirements changes, whether it is the case that there are two concentrations which allow for a route to completion via certain electives that would allow a student to graduate without achieving the minimum 15 units of graduate coursework within the 30 total units.

Jenni noted that this possibility would hopefully be avoided through both advising and the path to candidacy process, which lists the graduate degree requirements, but it might be helpful if there is a note at the top of such programs reminding folks that a minimum of 50% of your degree must be made of graduate course level units.

Lucy pointed out that there is language to that point in the course catalog about the requirement.

Rick pointed out that some students with whom he has met have been confused by this 50% rule, in that they often think that 50% of the totality of courses that they take has to be graduate level when in fact it's 50% of the program requirements. He urged that whatever language ends up being used must make that distinction clear.

The following voting action calendar items were approved via general consent:

[BOT - 330 - 21-1439](#) "Plant Ecology" (2). Current prerequisites: BIOL 330 or WLDF 301, or FOR 131. Add an alternative prerequisite course, ESM 303 "Applied Natural History and Ecology". Additionally, the course's C-classification is updated from C-04 to C-01 to better reflect the past and planned course enrollment.

[DANC - 389 - 2021-1491](#). "Choreography II" (2). Course prerequisite changes necessitated by the suspension of DANC 288 and 289 and their replacement with DANC 287. New course prerequisite: DANC 287. Course repeatability changed from up to 2 times to up to 3 times.

[EDUC - 318 - 21-1361](#) and [WS - 318 - 21-1361](#). Proposal seeking to change the title and description of the crosslisted EDUC 318/WS 318 in order to improve course currency. Both courses are seeking identical changes.

**Current: Gay & Lesbian Issues in Schools.** Explores the ways in which K-12 public education responds to the open inclusion of gay, lesbian, bisexual, and transgender students, teachers, and parents. Special focus on topics such as homophobia in girls' sports, gender nonconforming sports, and teachers' decisions to be closeted or openly gay

**Proposed: LGBTQIA+ Issues in Schools.** Examine policy and pedagogical issues related to full participation of LGBTQIA+ people of diverse races, classes, abilities, and ethnicities in K-12 schools in the United States.

[Environmental Resources Engineering, B.S. - Change Core Requirements - 21-1465](#). The ERE program would like to add NAS 331 and OCN 320 to upper division Science/Natural Resources electives to formalize existing advising and substitution practices. Prerequisite changes to OCN 320 now make this course accessible to ERE students. Adding NAS 331 to the list of electives will allow students to take this course without having to ask their advisors to make an exception to their DARs. The ERE department has been accepting this course as an upper division science elective since it was reactivated in 2016.

[Environmental Systems - Change Core Requirements - 21-1226](#). The Environmental Systems graduate program is redesigning its curriculum in order to align with EO 1071.

The 3 concentrations of this program (Geology, Environmental Resources Engineering, and Environmental Technology & Policy) will share a 16 unit core composed of:

- 1 unit of SCI 698 Graduate Colloquium,
- 3 units of Independent Study (ENRG 699 or GEOL 699)
- 6 units of Thesis (ENGR 690 or GEOL 690)
- 4 units of Statistics/Analysis (ENGR 322, GSP 510, or STAT 630)
- 2-4 units of Methods (ECON 423/D, ECON 550, or GEOL 554)

The Geology concentration will be comprised of:

- GEOL 550 (3) Fluvial Processes
- GEOL 551 (3) Hillslope Processes
- GEOL 553 (4) Quaternary Stratigraphy
- GEOL 555 (3) Neotectonics
- additional course(s) from the approved electives list in order to bring the total degree units to no fewer than 30.

The Environmental Resources Engineering concentration will be comprised of:

- a minimum of 3 engineering design courses (9 units) from the approved list of courses
- a minimum of 1 policy course (3-4 units) from the approved list of courses
- additional course(s) from the approved electives list in order to bring the total degree units to no fewer than 30.

The Environmental Technology & Policy concentration will be comprised of:

- ENGR 532 (4) Energy, the Environment, and Society
- additional course(s) from the approved electives list in order to bring the total degree units to no fewer than 30 (no more than 2 engineering electives).

[FISH - 446 - 21-1289](#) and [FISH - 546 - 21-1308](#). "Aquatic Ecosystem Modeling" (3) new co-listed courses that will become electives for the Fisheries Biology BS and Natural Resources, Fisheries Biology concentration. Course description: "Using statistical and theoretical models to understand the processes that influence the structure and function of aquatic populations and communities. Methods may include spatial analyses, time-series, bioenergetics, and individual based models." This course was previously offered as a 480/580 special topic course and will be comprised of 2 units of C-04 and 1 unit of C-13.

[Fisheries Biology, B.S. - Change Concentration/Emphasis Requirements - 22-1451](#). Add newly proposed course FISH 446 "Aquatic System Modelling" to the list of elective courses for all Fisheries Biology concentrations.

[Natural Resources, M.S. Fisheries Biology Concentration Change - 21-1452](#). Add newly proposed course FISH 546 "Aquatic System Modelling" to the list of elective choices for the Fisheries Biology concentration.

[Forestry, Forest Restoration Concentration, B.S. - Change Concentration/Emphasis Requirements - 21-1434](#). The Forestry department would like to move FOR 431 "Forestry Restoration" from the list of concentration electives into the list of required upper division courses for the Forest Restoration concentration. Conversely, the department would like to move the currently required by the concentration FOR 321 "Fire Ecology" course to the list of electives. Because the courses "swap" between the list of required courses and electives and each of them is worth 3 units, there are no unit implications for the students.

[FREN - 420 - 20-1104](#). "French Peer Tutoring" is currently 1-3 units and is not repeatable. The program would like to make it repeatable for up to a maximum total of 4 units. This change will have no effect on resources, will improve student learning (to teach something is to know something), and will decrease time to graduation; it will also make FREN 420 in line with its sibling Spanish course (SPAN 313 "Spanish Peer Tutoring").

Note: For parity, CDC recommends that SPAN 313 be changed to 1-3 units and repeatable for up to 4 units (it is currently 1-4 units, which seems unrealistic, that students are spending 180 hours per semester [12 hours per week] on this course).

[Geology, BS and BA - Change Concentration/Emphasis Requirements - 21-1176](#). Geology department wants to add GEOL 452, 453, and 456 (which are all co-listed with the corresponding graduate courses GEOL 552, 553, and 556) to count towards the Area of Specialization requirement, which requires BA and BS Geology majors to complete 5 units of upper-division geology courses. Each 400-level undergraduate course will be co-listed with a 500-level graduate course, which will be taught by the geology department and offered to graduate students on a rotation. If one of the co-listed 400-level courses is completed for credit, the 500-level co-listed course may not be taken for credit at a subsequent time, unless explicitly stated on the student's program of study and approved by the student's graduate committee.

[GEOL - 452 - 21-1322](#) and [GEOL - 552 - 21-1338](#). "Glacial & Periglacial Processes" (3). New co-listed courses. **Course Description:** *"Principles of glacier formation and flow, glacial landforms, and using glaciers as climate and paleoclimate indicators. Includes field trips."* GEOL 452 will count toward the Area of Specialization for Geology BA & BS majors (5 units required). GEOL 552 will count towards Geology electives in the Environmental Systems, M.S. Geology concentration. These new courses will maximize faculty expertise, allow more BA & BS Geology majors to understand glaciers, and address recommendations from external review for the GEOL department to co-list 400 and 500 courses to make course schedules more predictable.

[GEOL - 453 - 21-1294](#). "Quaternary Stratigraphy" (4). New co-listed course proposal. 3 units of C-04 lecture plus 1 unit of C-16 lab. **Course Description:** *"Examination of stratigraphic records of global change during the past 2.6 million years, including changes in climatic, geomorphic, sedimentologic, and biologic systems, and discussion of causes and implications of those changes both in theory and practice. Includes field trips."* GEOL 453 will count toward the Area of Specialization for Geology BA & BS majors (5 units required). This new course will be co-listed with the existing [GEOL - 553 - 21-1321](#), which will count towards Geology electives in the Environmental Systems, M.S. Geology concentration. These new courses will maximize faculty expertise, allow more BA & BS Geology majors to understand glaciers, and address recommendations from external review for the GEOL department to co-list 400 and 500 courses to make course schedules more predictable.

[GEOL - 456 - 20-1103](#) "Hydrogeology" (4). New co-listed course proposal. 3 units of C-05 lecture plus 1 unit of C-16 lab. **Course Description:** *"Quantitative exploration of movement and retention of water through the subsurface. Physics of saturated and unsaturated zone hydrology. Modeling of moisture change in the root zone, and vegetative water uptake. Geologic and environmental factors affecting water resources with a focus on water extraction and stream flow in northern California."* GEOL 456 will count toward the Area of

Specialization for Geology BA & BS majors (5 units required). This new course will be co-listed with the existing [GEOL - 556 - 21-1507](#), which will count towards Geology electives in the Environmental Systems, M.S. Geology concentration. These new courses will maximize faculty expertise, allow more BA & BS Geology majors to understand glaciers, and address recommendations from external review for the GEOL department to co-list 400 and 500 courses to make course schedules more predictable.

[German Studies - Change Core Requirements - 20-1082](#). The World Languages and Cultures Department would like to change two courses in their German Studies Minor. Previously the minor core curriculum had required GERM 311 (German Level V) and 312 (German Level VI), but these two classes have not been offered since 2015-16. So, they would like to suspend GERM 311 and 312 from the curriculum and replace them with GERM 105 (German Level I) and 106 (German Level II). This will not change the number of units for the minor, will make it easier for students to earn the minor, and will avoid confusion that arises when courses are required but no longer offered. Further, because minors require at least 6 UD courses and they are removing 311 & 312 and replacing them with 105 & 106, this means that all of the 16 units of required courses are LD. Thus, all 6 elective units need to be UD and ENGL 240 therefore is being removed from the list of potential elective courses.

[GERM - 311 - 21-1469](#). The Department of World Languages and Cultures would like to suspend GERM 311 (German Level V), as it has not been offered in years due to low enrollment. The course was part of the German Minor core, but GERM 105 (German Level I) is being swapped in as a replacement.

[GERM - 312 - 21-1474](#). The Department of World Languages and Cultures would like to suspend GERM 312 (German Level VI), as it has not been offered in years due to low enrollment. The course was part of the German Minor core, but GERM 106 (German Level II) is being swapped in as a replacement.

[GSP - 318 - 21-1456](#) "Geospatial Programming I". Current prerequisite: GSP 101 and GSP 101L. Adding alternate pre-requisite of GSP 510.

[History, B.A. - Change Concentration/Emphasis Requirements - 21-1489](#). The History department is reactivating the suspended in 2015 HIST 305 "The American West" (3) and HIST 305M "The American West Depth Experience" (1) and adding them to the US History Area elective course list.

[HIST - 305 - 21-1480](#) "American West" (3). Reactivation of a course suspended in 2015. C-class of the class updated from C-02 to C-04 to better reflect the planned and agreed-upon with the dean's office enrollment - no WTU or unit repercussions.

[HIST - 305 - 21-1481](#) "The American West Depth Experience" (1). Reactivation of a course suspended in 2015. C-class of the class updated from C-02 to C-05 to better reflect the planned and agreed-upon with the dean's office enrollment - no WTU or unit repercussions.

[JMC - 305 - 21-1324](#) "Global Media and Society" (3). UDD, DCG-ND. Course title and description change to update course currency:

**Current:** **International Mass Communication.** Comparative press systems and theories; international and cross-cultural communications; the role of international media as the intersection between social, political and economic institutions.

**Proposed:** **Global Media and Society.** Diversify knowledge of the global media landscape by examining international cross-cultural communications and the role of international media in social, political, technological and economic change.

[JMC - 326 - 21-1458](#) "Investigative Reporting" (3). The content of this course has been offered for the past several years as a special topic. The JMC department would like to update the course description for currency as this course will be once again offered as the 326 and used as an elective by the Cannabis Studies BA Equity and Social Justice concentration and the Journalism Minor.

**Current:** An advanced reporting and writing class. You will learn to apply in-depth reporting techniques and synthesize large amounts of information into a compelling story about an important community issue.

**Proposed:** Apply in-depth reporting techniques and synthesize large amounts of information into a compelling story about an important community issue.

[JMC - 429 - 21-1368](#). Advanced Public Relations. Addition of the "Sustainability-related" designation confirmed by the Sustainability Fellow J. Ortega. Course description updated to improve course currency:

**Current:** PR problems of industry and public institutions; managing effective public relations campaigns. Projects, discussion, writing of various communication tools.

**Proposed:** Practical experience working with community partners, media and other stakeholders to create and manage public relations campaigns.

[Liberal Studies, Child Development Elementary Education Concentration, B.A. - Change Concentration/Emphasis Requirements - 21-1522](#). This proposal replaces the suspended by the History Department HIST 311 and replaces it with the newly proposed HIST 200, which will meet the subject matter requirements of the ESM standards.



[Liberal Studies, Child Development / Elementary Education ITEP Concentration, B.A. - Change Concentration/Emphasis Requirements - 21-1523](#). Program requirements are updated to account for the suspension of HIST 311 and its replacement with HIST 200. Additionally, SPED 777 "Education of Exceptional Individuals" (2) is being replaced in the program with CD 467 "Working with Culturally Diverse Families" (3) thus increasing the number of units in the program by 1 unit.

[LSEE - 312 - 22-1521](#). The School of Education would like to suspend LSEE 312 (Social Studies & Science Fieldwork Observation & Seminar, 1.5 units) because it is no longer used in the LSEE program. The course has been replaced with LSEE 315 (Social Studies for Elementary Education, 4 units) and LSEE 313 (Science for Elementary Education, 3 units). No other LS programs appear to use this course either. The suspension was prompted by the fact that LSEE 312 has a prereq of HIST 311, which was recently suspended.

[MATH - 311 - 22-1498](#). "Vector Calculus". Course prerequisite changes necessitated by the suspension of MATH 241 and its replacement with MATH 107. New course prerequisites: MATH 107 and MATH 210.

[MATH - 313 - 22-1499](#). "Ordinary Differential Equations" (4). Course prerequisite changes necessitated by the suspension of MATH 241 and its replacement with MATH 107. New course prerequisites: MATH 107 and MATH 210.

[Philosophy, History of Western Philosophy Minor - Change Core Requirements - 22-1502](#). Reflecting approved changes to Philosophy BA: delete PHIL 341, PHIL 342, and PHIL 343 and add PHIL 210 and PHIL 211 as core requirements of the minor. Replace "Complete one lower or upper division 3-unit elective in philosophy" with "Complete two upper division 3-unit electives in philosophy" in the minor.

[PHYX - 450 - 21-1343](#) "Quantum Physics I". Department would like to add PHYX 340, "Mathematical & Computational Methods" (which has a prereq of PHYX 211 already required by the major) as a prerequisite. Current prerequisites: PHYX 320, "Modern Physics" and MATH 313, "Ordinary Differential Equations". Rationale: the majority of physics majors will have already taken PHYX 340 prior to taking PHYX 450. PHYX which was previously offered in the spring will now be offered in the fall allowing the transfer students to take this junior-level course before they sign up for the senior-level 450. This change is proposed to improve student learning.

[REC - 365 - 21-1298](#) "Travel Industry Management". Changing number from REC 365 to REC 315, as it is an Intro to Travel Industry Management course. Change to description to reflect the sequence of Tourism Emphasis courses.



**Current:** This is a conceptual and experiential course that provides an overview of hospitality management, meeting and convention planning, travel modes and methods, and destination marketing.

**Proposed:** This course provides a broad overview of the travel industry and the many participants in it. As the foundational course in the tourism management emphasis, students will develop a conceptual understanding of the tourism industry approaches and practices, as well as career opportunities. Students will explore management methods, goals, issues, and challenges through classroom and field experiences.

[REC - 472 - 21-1299](#). "Leadership Diving: Assistant Instructor" (4). Currently, this course does not require any prerequisites. This proposal adds the following prerequisites: REC 252 ("Diving First Aid, Introduction to HSU Diving"), REC 262 ("Beginning SCUBA"), REC 362 ("Master Diver"), and REC 383 ("Rescue Diver").

[SCI - 100G - 21-1345](#). "Becoming a STEM Professional" (3). 2 hrs/2 units of C-01 lecture + 2 hrs/1 unit of C-07 activity. This proposal creates a version of SCI 100 designated for Among Giant learning community students only. **Course description:** *"This course provides an introduction to the academic skills of a student in STEM, an introduction to the practical aspects of these disciplines, and their role in our multicultural society. Course designated for the Among Giants learning community participants."*

The Biological Sciences department determined that the current C-05 1 unit/1 hr break-out session does not provide sufficient instructional time for their place-based learning community, Among Giants and would like to create this version of SCI 100 (with G for Giants) that affords an additional hour of instruction. According to the Biological Sciences department, this will not increase WTU for this course compared to SCI 100, as faculty already get an extra WTU for summer immersion and have agreed to include the increased 0.33 WTU from the C-07 unit in this extra WTU. The assigned time would then have to be adjusted from 1 to 0.67 WTU.

[Sustainable Food Systems Minor - 20-1086](#). The Department of Anthropology would like to create a new Sustainable Food Systems Minor. This degree will be 18 units total. There will be three core classes: ANTH 308 (a new course, 3 units, Sustainable Food Systems, approved for GE Area B), NAS 331 (3 units, Indigenous Natural Resource Management Practices), and HED 231 (3 units, Basic Human Nutrition). As the 4th core course students then either take WLDF 309 (3 units, Case Studies in Environmental Ethics) or RRS 306 (3 units, Wildland Resource Principles). Finally, students take two classes (minimum 6 units) from a list of 37 electives. The minor will be housed in Anthropology and there is an MOU from the three deans outlining how this minor will be tended by an interdisciplinary team.

[ANTH - 308 - 20-997](#). "Sustainable Food Systems" (3) The Anthropology Department would like to create a new course, which will be part of the core curriculum in the newly-proposed Sustainable Food Systems Minor (20-1086) and will fulfill upper division GE Area B. **Course description:** "This interdisciplinary course explores the scientific, historical, ethical, economic, and cultural aspects and considerations of growing, harvesting, processing, transporting, marketing, eating, and disposing of food. Food systems are complex and multifaceted. Which foods are made available to us and why, is often highly political. Food directly impacts our health, the economy, the environment and the

wellness and resiliency of our communities. This course will critically explore the scientific and pertinent social factors of what makes a food system sustainable."

[PSCI - 305 - 20-994](#). "Food Politics and the American Dream" (3). The Political Science Department would like to reactivate PSCI 305, which was suspended in 2009 (and was then called The American Political Dream). **Course description:** "Explores a variety of topics in the politics of food, including political, economic, social, and cultural dynamics of food production and consumption; the intersection of food and identity; food and the environment; food regulatory policy; alternative food systems." Via this new course proposal, the department is reactivating, changing the name, and changing the description of this course as part of a curriculum update. Since 2009, it has been offered numerous times as a Special Topics/capstone course for PSCI and ENST majors and had good enrollment and student success. PSCI Will be used as an elective in the 1) Politics of Environment and Sustainability concentration within the PSCI major (the department submitted related [Political Science - Change Concentration/Emphasis Requirements - 20-1166](#) to update this concentration), 2) the PSCI minor, 3) the Food Justice career path track for the newly proposed Sustainable Food Systems Minor (20-1086), and 4) UD GE Area D (approved by the GEAR committee).

### **Cannabis Studies Program**

See attached Resolution for the University Senate (09-21/22-ICC - Resolution to Recommend New Bachelors of Arts in Cannabis Studies)

Professor Josh Meisel attended this portion of the meeting to answer questions as needed.

Ramesh asked how this course fulfills the Area E lifelong learning outcomes, since it is a different process than other area E classes. Josh clarified that the course being referred to was created in order to provide students an opportunity through the study of cannabis in this region to use that as a vehicle to reflect upon how their life experiences have been shaped by the places in which they've lived and where they grew up. From his understanding this is a key element of Area E in terms of drawing those connections and being reflective on one's own lived experiences.

Lisa pointed out that she and Cutcha brought a broader question to AVP Bustos-Works around GEAR and the purpose of GEAR, she pointed out that the revised GEAR policy to illustrate the recertification and certification process. This program met the Area E certification as far as GEAR is concerned, citing for example an auto-geography exercise in this program, which asks students to provide a one page description of the place students call home, where it's located, why do you believe its location significant for why it is populated, what do you believe are important historical events associated for this place.

Maxwell pointed out that since Area E in general is a little fuzzy and lots of programs on campus take care of that requirement in a variety of ways, this should be passed. Mark and Lisa noted that GEAR is experiencing growing pains in their new capacity as a standing subcommittee of the ICC, and they have brought this issue to the Provost and Vice Provost, who suggested that

HSU really should do a full GEAR program review toward the end of this year so that we have a set of clear policies and frameworks for GE at HSU. Cutcha pointed out that with the new law coming down the road regarding UC and CSUs having the same pathway through GE, so we'll need to go through an overhaul anyway.

### **Data Science Program**

See attached Resolution for the University Senate (10-21/22-ICC - Resolution to Recommend New Bachelors of Science in Data Science)

### **Marine Biology Program**

See attached Resolution for the University Senate (11-21/22-ICC - Resolution to Recommend New Bachelors of Science in Marine Biology)

See attached letter from the Department of Oceanography in response

Chair Anderson briefly went over the history of this program proposal, and explained that it is really an elevation of the marine biology concentration that already exists. She noted however, there are different philosophies on campus about the approach to take for a marine biology bachelor's standalone program through this lens is good solid curriculum and movement forward is appropriate.

Rick Zechman explained that the Biology department has wanted a Marine Biology program for decades, and stated that he stands with folks in Oceanography and Fisheries in that this is a biology degree it's not really a marine degree, it does have a marine flavor but it's a biology degree by and large.

Jenni Robinson noted that the prerequisites should be laid out in the proposal, and asked whether as part of this there is a request to suspend the Biology Marine concentration or whether that will be kept. She also noted that it lists Physics 188, but most of the other biology programs in the last year or so had changed so that students can either take a 118 or 107, which is a second semester of physics, and is a very common pathway for transfer students. She also reminded folks that part of AB 928 is that ADTs are going to be the preferred pathway for Community College student transfers. She noted that in the new degree program proposal from the CEO clarifies clearly that we shouldn't have hidden prerequisites. Discussion about the pre requisites listing and the unit impacts inherent there ensued, and it was noted by many that more discussion will need to be had, but the program should be moved forward to the Senate, with the understanding that further movement would be halted if negative feedback about the possibility of listing 0-6 units, which is a question for the Chancellor's Office.

Chair Anderson also replied that it is her understanding that the concentration will not be continued if this program is approved.

### **Psychology Program Packet**

[Psychology - Change Core Requirements - 21-1066](#). The Psychology Department is changing their program core curriculum. They are removing the differentiation from the graduate study pathway so that there will be one major pathway. They have also removed discussion courses that were offered every other year, as well as the capstone requirement. This streamlining will improve educational equity among students, reduce major units from 45 to 41, and decrease time to graduation for GI 2025. They have also modified several courses and course sequences to improve success bottlenecks. Having one pathway should create a more cohesive undergraduate experience to improve student success and retention. The curricular changes involve three new courses and 13 course deletions/suspensions. The core will consist of 3 LD courses and 6 UD courses representing the major fields within Psychology. There will then be roughly 4 elective courses that students pick based on interest from a long list of UD options.

One notable change that has been exhaustively discussed at ICC is the proposal to make PSYC 109 (Introduction to Psychological Statistics, 4 units) count as LD GE B4 Math. We feel that by requiring PSYC 198 (Supplemental Instruction, 1 unit) to be taken concurrently with PSYC 109 for Category III/IV students, the EO 1110 requirements are met such that PSYC 109 can serve as a B4 course. In Fall 2024, the Psychology Department will present to ICC summary data on Category III/IV student success in PSYC 109; if success is a problem, CDC recommends that PSYC 198 co-requisite be replaced with a new faculty-taught course PSYC 9 (1 unit, 2 hours per week).

#### New Courses:

[PSYC - 198 - 21-1054](#). "Supplemental Instruction" (1). This course will be taught by student staff at the Learning Center and will be to support students in PSYC 109 (previously PSYC 241, now titled Introduction to Psychological Statistics, 4 units). This supplemental support will be very important for Category III and IV students.

[PSYC - 342 - 21-1052](#). "Application of Research Methods in Psychology" (4). Course description: "Students learn about the application of the different types of research design and methods used in the field of Psychology. Students will learn how to consider ethics, hypothesis development, study design, data collection, data analysis, interpretation of results, and dissemination of their research." Previously, students took PSYC 242 "Introduction to psychological research design & methodology" (4) that covered foundation and application of research methods. PSYC 242 had a success bottleneck issue and an equity gap issue. So, the program is deleting PSYC 242 and creating a new sequence that will better support student success. First, students will take 240 "Understanding Research Methods in Psychology" (changing to "Foundations of Research Methods in Psychology" (3)) and then take this new upper division course PSYC 342. This new sequence should address bottleneck and equity gap issues in the program.

[PSYC - 484 - 21-646](#). "Culture and Diversity in Psychology" (3). This course will bring the major curriculum in alignment with national guidelines to support student success. Course description: "The course examines the intersectionality of culture, race, ethnicity, and diversity in the field of psychology. It focuses on how issues of culture and diversity relate to the interpretation and perception of people's experience/beliefs/values as well as how to apply this information in the field of psychology overall."

Course Deletions:

[PSYC - 236 - 21-1073](#). "Choices & Changes in Sexuality" (1). Reduce courses required for the major. This course is not in line with current perspectives or research on this topic and has not been taught for quite some time.

[PSYC - 242 - 21-1049](#). "Introduction to Psychological Research Design & Methodology" (4). This course will be replaced by PSYC 342 "Application of Research Methods in Psychology" (4). Making this course upper division will address a success bottleneck issue and support a program change curricular redesign. This change will also remove PSYC 242 as a prerequisite to upper division Psychology courses.

[PSYC - 303 - 21-1087](#). "Family Relations in Contemporary Society" (3). This will have minimal impact on Psychology majors, as the course had only been offered on a 2-yr basis and Child Development offers a similar course on this topic (CD 467, Working with Culturally Diverse Families). This course deletion will also have minimal impact on non-major students, as the department offers alternative upper division Area D courses: PSYC 300 (Psychology of Gender) and PSYC 302 (Psychology of Prejudice).

[PSYC - 304 - 21-1089](#). "Business Psychology" (3). This course has always been taught by an instructor from the Business Administration Department and cross-listed with BA 304. Deleting this course from the Psychology program will have minimal effect on majors because there are many other upper division courses offered, including other upper division Area D GE. The Business department would like to retain BA 304 as a standalone course.

[PSYC - 311D - 21-1030](#). "Human Development Discussion" (2). The research training content from this course will now be covered in the new course PSYC 342 Application of Research Methods in Psychology. Deleting this discussion course will reduce the coursework required for the major and will therefore decrease time to graduation. They have removed the requirement for a discussion or lab course from the major graduate pathway.

[PSYC - 324D - 21-1048](#). "Cognitive Psychology Discussion" (2). Reduce courses required for the major and time to graduation. This change is part of the program curriculum redesign. Some of the PSYC 324D course content will now be covered in PSYC 342 (new course, "Application of Research Methods in Psychology" (4)).

[PSYC - 335D - 21-1075](#). "Social Psychology Discussion" (2). Reduces courses required for the major and time to graduation. This change is part of the program curriculum redesign. Some of the course content will now be covered in PSYC 342 new course, "Application of Research Methods in Psychology" (4).

[PSYC - 337D - 21-1047](#). "Personality Theory & Research Discussion" (2). Reduce courses required for the major and time to graduation. This change is part of the program curriculum redesign. Some of the course content will now be covered in PSYC 342 new course "Application of Research Methods in Psychology" (4).

[PSYC - 419 - 21-1060](#). "Family Violence" (3). It was only offered every two years and other departments teach related content, so this course deletion should have minimal impacts on students. For PSYC majors, there are many other upper division options to choose from. For PSYC majors seeking a minor in Women's Studies, they will have to take an extra class because previously PSYC 419 could double-count towards major and minor. For Criminal Studies majors, they will have to choose a different course.

[PSYC - 437 - 21-1059](#). "Sexual Diversity" (3). This course is a single-counting DCG-domestic course, but the department offers two other DCG-d courses (PSYC 300 & 302). PSYC Majors will be minimally affected, as there are numerous other upper division course options to fulfill major requirements. Similarly, there will be minimal impact on other majors. PSYC Majors minoring in Multicultural Queer Studies will have to take an additional class, as PSYC 437 could count towards both major and minor.

[PSYC - 496 - 21-1053](#). "Psychology Research Seminar" (3). As part of their program curriculum redesign, the Psychology Department would like to delete PSYC 496 because the content is covered in PSYC 490 "Senior Honors Thesis" (3) or PSYC 495 "Research Practicum in Psychology" (1-4).

#### Course Suspensions:

[PSYC - 482 - 21-1112](#). To reduce curricular redundancies, the Psychology Department would like to suspend PSYC 482 "Field Study" (1-4), as similar content/training is available via PSYC 499 "Independent Study" (1-3).

[PSYC - 485 - 21-1058](#). As part of their program curriculum redesign, the Psychology Department would like to suspend PSYC 485 "Senior Seminar" (3); in this restructuring, the senior capstone requirement has been removed.

#### Course Changes:

[PSYC - 240 - 21-1028](#). Change the title "Understanding Research Methods in Psychology" to "Foundations of Research Methods in Psychology" to better reflect course content. Add

PSYC 109 (previously PSYC 241 "Introduction to Psychological Statistics" (4)) as a corequisite (which can be taken first or concurrently), in addition to the existing prerequisite of PSYC 104 ("Introduction to Psychology" (3) C- or higher).

[PSYC - 241 - 18-228](#). Change course number of PSYC 241 "Introduction to Psychological Statistics" (4) to PSYC 109. This 100-level course will fulfill GE B4 requirements for Psychology majors. To meet EO 1110, Category I and II students will be able to take this course in their second semester. Category III/IV students will take PSYC 109 with a co-requisite PSYC 198. This will be tried for two years and then success assessed. The department is also creating a new Supplemental Instruction class (PSYC 198, 1 unit) that will be taught via students at the Learning Center, and will encourage students to take this course concurrently.

[PSYC - 311 - 21-1072](#). "Human Development" (3). Change the name to "Developmental Psychology" to better align with national guidelines for an undergraduate degree in psychology. Reduce the prerequisites from PSYC 240 (C) ("Understanding Research Methods in Psychology") soon to be changed to Foundations of Research Methods in Psychology") or PSYC 242 (C) ("Introduction to Psychological Research Design & Methodology", soon to be deleted and re-made as PSYC 342 "Application of Research Methods in Psychology") to simply PSYC 240.

[PSYC - 320 - 21-1080](#). "Behavior Analysis" (4). Change prerequisite to solely PSYC 240 "Understanding Research Methods in Psychology" (soon to be changed to "Foundations of Research Methods in Psychology"). Previously, the prerequisite for PSYC 320 had been PSYC 240 (C) or PSYC 242 (C) ("Introduction to Psychological Research Design & Methodology", soon to be deleted and re-made as PSYC 342 "Application of Research Methods in Psychology"). This change will align with program curriculum redesign.

[PSYC - 322 - 21-1090](#). "Learning & Motivation" (3). Change prerequisites to solely PSYC 240 "Understanding Research Methods in Psychology" (soon to be changed to "Foundations of Research Methods in Psychology"). Previously, the prerequisite for PSYC 322 had been PSYC 240 (C) or PSYC 242 (C) (Introduction to "Psychological Research Design & Methodology", soon to be deleted and re-made as PSYC 342 "Application of Research Methods in Psychology"). This change will align with program curriculum redesign.

[PSYC - 323 - 21-1084](#). "Sensation and Perception" (3). Prerequisite change. Previously, prereqs were either PSYC 240 (C) "Understanding Research Methods in Psychology" or PSYC 242 (C) "Introduction to Psychological Research Design & Methodology". PSYC 242 is being deleted and replaced with an upper division version 342, so the program would like to make PSYC 240 the sole prerequisite for PSYC 323 (not a corequisite). This change is part of the program curriculum redesign.



[PSYC - 324 - 21-1091](#). Cognitive Psychology (3). Prerequisite change. Previously, prereqs were either PSYC 240 (C) "Understanding Research Methods in Psychology" or PSYC 242 (C) "Introduction to Psychological Research Design & Methodology". PSYC 242 is being deleted and replaced with an upper division version 342, so the program would like to make PSYC 240 the sole prerequisite for PSYC 324 (not a corequisite). This change is part of the program curriculum redesign.

[PSYC - 325 - 21-1092](#). "Advanced Behavioral Neuroscience" (4). Change prerequisites from PSYC 242 "Intro to Psychological Research Design & Methodology" (4) and PSYC 321 "Intro Behavioral Neuroscience" (3) or ZOOL 310 "Animal Physiology" (4) or BIOL 350 "Cell Biology" (3). Moving forward they want the sole prereq for PSYC 325 to be PSYC 240 "Understanding Research Methods in Psychology", soon changing to "Foundations of Research Methods in Psychology" (3). This is part of the program curriculum redesign and will support proposed changes in research methods courses.

[PSYC - 335 - 21-1094](#). "Social Psychology" (3). Prerequisite change. Previously, prereqs were either PSYC 240 (C) "Understanding Research Methods in Psychology" or PSYC 242 (C) "Introduction to Psychological Research Design & Methodology". PSYC 242 is being deleted and replaced with an upper division version 342, so the program would like to make PSYC 240 the sole prerequisite for PSYC 335 (not a corequisite). This change is part of the program curriculum redesign.

[PSYC - 337 - 21-1095](#). "Personality Theory & Research" (3). Prerequisite change. Previously, prereqs were either PSYC 240 (C) "Understanding Research Methods in Psychology" or PSYC 242 (C) "Introduction to Psychological Research Design & Methodology". PSYC 242 is being deleted and replaced with an upper division version 342, so the program would like to make PSYC 240 the sole prerequisite for PSYC 337 (not a corequisite). This change is part of the program curriculum redesign.

[PSYC - 345L - 21-1107](#). "Psychological Tests & Measurements" (4). Prerequisite change. Previously, prereqs were either PSYC 240 (C) "Understanding Research Methods in Psychology" or PSYC 242 (C) "Introduction to Psychological Research Design & Methodology". PSYC 242 is being deleted and replaced with an upper division version 342, so the program would like to make PSYC 240 the sole prerequisite for PSYC 345L (not a corequisite). This change is part of the program curriculum redesign.

[PSYC - 411 - 21-1113](#). "Social Neuroscience" (3). Prerequisite change. Current prereqs are PSYC 240 "Understanding Research Methods in Psychology" (3), soon to be changed to "Foundations of Research Methods in Psychology" or PSYC 242 "Intro to Psychological Research Design & Methodology" (4) and PSYC 321 "Intro Behavioral Neuroscience" (3) or BIOL 104 "General Biology" (3) or BIOL 105 "Principles of Biology" (4). PSYC 242 is becoming PSYC 342 "Application of Research Methods" (4) with PSYC 240 as a prereq. So, PSYC 411

prereqs should now be PSYC 342 and PSYC 321 or BIOL 104 or BIOL 105. These changes are part of the program curriculum redesign.

[PSYC - 415 - 21-1083](#). "Psychology of Aging & Older Adulthood" (3). Prerequisite change. Previously, prereqs were either PSYC 240 (C) "Understanding Research Methods in Psychology" or PSYC 242 (C) "Introduction to Psychological Research Design & Methodology". PSYC 242 is being deleted and replaced with an upper division version 342, so the program would like to make PSYC 240 the sole prerequisite for PSYC 415 (not a corequisite). This change is part of the program curriculum redesign.

[PSYC - 438 - 21-1074](#). "Dynamics of Abnormal Behavior (3). Change course number and title to PSYC 338 "Abnormal Psychology" to better reflect that this course should be taken before senior year and to better align with national guidelines for undergraduate psychology majors. To align with program curriculum redesign, they would also like to remove PSYC 242 "Introduction to Psychological Research Design & Methodology" (4) as a prereq for PSYC 338, as PSYC 242 is being deleted. As such, the sole prereq for PSYC 338 will be PSYC 240 "Understanding Research Methods in Psychology" (soon to be changed to "Foundations of Research Methods in Psychology" (3)).

[PSYC - 490 - 21-1051](#). "Senior Honors Thesis" (3). As part of their program curriculum redesign to improve student success, the Psychology Department would like to add prerequisites to PSYC 490, which currently has no prerequisites. The prerequisite courses will be PSYC 109 (changing from 241, "Introduction to Psychological Statistics" (4)) or STAT 109 "Introductory Biostatistics" (4) or STAT 108 "Elementary Statistics" (3) and PSYC 342, new course, "Application of Research Methods in Psychology" (4).

[PSYC - 495 - 21-1110](#). "Research in Psychology" (1-4). As part of their program curriculum redesign, the Psychology Department would like to change the title of PSYC 495 to "Research Practicum in Psychology" to better reflect the course content and purpose.

[PSYC - 497 - 21-1111](#). "Mentoring" (1-3). As part of their program curriculum redesign, the Psychology Department would like to change the name of PSYC 497 to "Mentoring in Teaching Psychology" to better reflect course content and purpose.

[PSYC - 498S - 21-1093](#). "Community Psychology" (3). Prerequisite change. Originally, prereqs were PSYC 240 (C) "Understanding Research Methods in Psychology" (soon to be changed to "Foundations of Research Methods in Psychology" (3) or PSYC 242 (C) "Introduction to Psychological Research Design & Methodology" (4) (soon to be deleted) to just PSYC 240 (not as a co-req) to be in line with program curriculum redesign.

### **Assigned Time and Program Review**

Item remained undiscussed at adjournment

**Survey on AB 928**

The survey on AB 928 was shared briefly and will be taken up again at the next meeting.

**Subcommittee Reports:**

APPC Chair Anderson reported the APPC as well as the CDC have been looking at further new programs.

GEAR Chair Tremain reported the committee also talked among themselves about the topics around the purpose of GE courses at Humboldt is.

APC Chair Schnurer reported the committee is excited that Jenni has joined the committee, and the committee is continuing work on the minors policy, and they continue to work on an aspirational potentially innovative approach for the syllabus policy. He encouraged the ICC to send him feedback as needed.

**CAL POLY HUMBOLDT**  
**University Senate**

**Resolution to Recommend New Bachelors of Arts in Cannabis Studies**

09-21/22-ICC February 8, 2022 – First Reading

**RESOLVED:** That the University Senate of Humboldt State University recommends to the Provost that the new Bachelors of Arts in Cannabis Studies detailed in proposal [21-1181](#) be approved.

**RATIONALE:** The proposed Bachelors of Arts in Cannabis Studies is an interdisciplinary program designed to engage students in the historical, cultural, social, political, and legal contexts of cannabis through social and environmental justice frameworks. Through this program, students will choose between concentrations in Equity and Social Justice or Environmental Stewardship to prepare them for occupations in the developing field of Cannabis Studies. The Department of Sociology and the ICC believe this major will provide students with knowledge and skills for future careers and endeavors in public policy and law, equity and justice advocacy, human services and regulatory agency work, research, and Masters or Doctoral degrees. There are eight new courses being proposed to support this program. Deans of all three colleges have supported this proposal with a signed MOU included in the curriculum proposal materials.

**Bachelors of Arts in Cannabis Studies Program Learning Outcomes**

1. Graduates will be able to identify historical impacts of prohibition on socioeconomically marginalized communities;
2. Graduates will be able to propose equitable policies for legalization;
3. Graduates will be able to describe ecosystem impacts of cannabis cultivation and explain practices of environmental stewardship and sustainability;
4. Graduates will be able to use ecological and socioeconomic data to represent environmental and social justice impacts in order to formulate improved cannabis policy outcomes;
5. Graduates will be able to critically evaluate how cannabis shapes place, both in Humboldt and around the world; and
6. Students will be able to effectively communicate in writing about cannabis issues from a variety of disciplinary perspectives.

**Bachelors of Arts in Cannabis Studies Curriculum**

## **Core Courses (30 units)**

The following core courses are required for all majors

### Lower Division

CANN 120 (3) Introduction to Cannabis Studies  
CANN 202 (3) Humboldt and Cannabis [LD GE Area E]  
CANN 240 (3) Global Cannabis  
GSP 101 (3) Geospatial Concepts and Lab

### Upper Division

BOT 300 (3) Plants and Civilization [UD GE Area B]  
CANN 325 (3) Cannabis and Social Equity  
CANN 335 (3) Cannabis and Environmental Sustainability  
CANN 420 (3) Cannabis Law and Public Policy  
NAS 332 (3) Environmental Justice [DCG-D]  
SOC 372 (1) Proseminar OR  
SOC 472 (1) Graduate School Planning  
CANN 482 (2) Internship

## **Concentrations**

### **Equity and Social Justice**

Complete the following:

CRIM 420 (4) Drugs and Society  
SOC 282L (1) Sociological Statistics Lab [Prerequisite: STAT 108 or STAT 108i]  
SOC 303 (3) Race and Inequality [UD GE Area D][DCG-D]

Complete one of the following methods courses:

ANTH 318 (4) Ethnography [Prerequisite ANTH 104]  
ENST 395 (3) Environmental Studies Research & Analysis [Prerequisite ENST 295 which has a prerequisite of ENST 120]  
GEOG 311 (3) Geographic Research and Writing AND GEOG 310L (1) Geographic Research Laboratory  
HIST 210 (4) Historical Methods  
SOC 382 (4) Introduction to Research Methods [Prerequisite STAT 108]

Complete at least two classes from each of the following categories for a minimum of 15 units:

## Policy

CANN 345 (3) Cannabis Regulatory & Environmental Requirements

CRGS 360 (4) Race, Gender, & US Law [DCG-D]

NAS 364 (4) Federal Indian Law I

NAS 365 (4) Federal Indian Law II

PSCI 313 (4) Politics of Criminal Justice

PSCI 317 (4) Public Policy Process

PSCI 352 (4) Water Politics

PSCI 360 (4) Political Economy

PSCI 365/GEOG 365 (4) Political Ecology

PSCI 373 (4) Politics of Sustainability

SOC 320 (4) Environmental Sociology

SOC 350 (4) Social Movements

SOC 363 (4) Environmental Crime

SOC 370 (4) Environmental Inequality and Globalization

## Social Action

COMM/CRGS/POLS/ES 235(1) Act to End Sexualized Violence

COMM 315 (4) Communication and Social Advocacy [DCG-D][Prerequisite COMM 100]

CRGS 313 (3) Community Activism [DCG-D]

ECON 470S (4) Sustainable Rural Economic Development

ESM 435 (2) Grant Proposal Writing

FILM 362 (4) Social Change Digital Production

FILM 455 (4) Grant Writing

GSP 270 (3) Geographic Information Science [Prerequisite GSP 101]

JMC 326 (3) Investigative Reporting

PSCI 358 (4) Political Advocacy

PSCI 412 (4) Legal Research

SOC 475 (4) Community Organizing

## Environmental Stewardship

Complete the following courses:

SOIL 260 (3) Introduction to Soil Science [Prerequisite: CHEM 107 or 109]

CANN 345 (3) Cannabis Regulatory and Environmental Requirements

Complete at least two courses from each of the following categories for at least 19 units:

### Watershed Management

GEOL 306 (3) Geomorphology [UD Area B][Prerequisite: GEOL 109]

GEOL 456(4) Hydrogeology [Prerequisite: MATH 105 or MATH 109]

WSHD 310 (4) Hydrology & Watershed Management [Prerequisite: LD GE Area B Phys Universe]

WSHD 333 (3) Wildland Water Quality [Prerequisite: CHEM 107]

WSHD 424 (3) Watershed Hydrology [Prerequisite: WSHD 310]

### Natural Resource Management

ECON 423 (3) Environmental & Natural Resource Economics

FOR 315 (3) Forest Management

FOR 431 (3) Forest Restoration [Prerequisite: FOR 131 or FOR 315]

NAS 331 (3) Indigenous Natural Resource Management [DCG-D]

RRS 306 (3) Wildland Resource Principles [UD Area B]

RRS 430 (3) Wildland Restoration & Development [Prerequisite:

RRS 306 or WLDF 301

SOC 302 (3) Forest and Culture [UD Area D]

### Policy and Law

ESM 305 (3) Environmental Conflict Resolution [UD Area D]

ESM 325 (3) Environmental Law & Regulation [Prerequisite: ESM 105]

ESM 360 (3) Introduction to Environmental Planning Methods

ESM 365 (3) Local Government Planning [Prerequisite: ESM 360]

ESM 425 (3) Environmental Impact Assessment

NAS 366 (4) Tribal Water Rights

NAS 364 (4) Federal Indian Law I

NAS 365 (4) Federal Indian Law II

### **Descriptions of New Courses Proposed as Part of the Major**

CANN 120 (3) Introduction to Cannabis Studies- Introduction to Cannabis Studies curriculum and focal areas: focus on basic plant botany, chemistry, and endocannabinoid system; human/cannabis relationships; ecological issues; and economic development and policy.

CANN 202 (3) Humboldt and Cannabis- How cannabis shapes Humboldt: social history and geography before and following the arrival of cannabis; ecology, native epistemology, settler colonialism, counter-cultures and social movements, prohibition/criminalization, markets, medicalization, and legalization.



CANN 240 (3) Global Cannabis- Survey of how cannabis shapes places globally. Focuses on international landscapes of cannabis as a plant providing food, fiber, fuel, and medicine.

CANN 325 (3) Cannabis and Social Equity- Students will complete an equity assessment of a community they select. The purpose of this assignment is for students to apply equity concepts to analyze disproportionate impacts of cannabis criminalization and the war on drugs.

CANN 335 (3) Cannabis and Environmental Sustainability- Covers natural resource issues regarding cannabis production. Topics include: sustainability of cannabis regarding water, soil, wildlife, and energy use, general botany, biotic/abiotic requirements, and best practices to mitigate environmental impacts.

CANN 345 (3) Cannabis Regulatory and Environmental Requirements- Examination of local, state and federal regulations relating to water, fish and wildlife, and land use necessary to obtain licensing. Focus on historical and contemporary policy, goals, implementation, and impacts.

CANN 420 (3) Cannabis Law and Public Policy- Focuses on the politics, policy process, and outcomes of efforts to legalize cannabis from the local to the global. Course emphasis on public health, justice, environmental, and economic policy change.

CANN 482 (3) Internship- Design and carry out internship-based culminating project in partnership with local agency, community organization, research institute, or faculty. Proposal due in semester before enrollment to receive permission number.

**CAL POLY HUMBOLDT**  
**University Senate**

**Resolution to Recommend New Bachelors of Science in Data Science**

10-21/22-ICC – February 8, 2022 – First Reading

**RESOLVED:** That the University Senate of Humboldt State University recommends to the Provost that the new Bachelors of Science in Data Science detailed in proposal [21-1441](#) be approved.

**RATIONALE:** The proposed Bachelors of Science in Data Science is intended to support students in developing and practicing skills in synthesizing knowledge and applying contemporary statistics, data analysis, and computational science methods to solve social and environmental problems. Through this program, students will engage in the processes of obtaining, wrangling, curating, managing and processing, and exploring data, defining questions, performing analyses and communicating the results. The Department of Mathematics and the ICC believe this major will provide students with knowledge and skills for future careers in data management as it applies to a variety of fields and specialty areas. There are six new courses being proposed to support this program. This program is being proposed as part of the transition to a Polytechnic University.

**Bachelors of Science in Data Science Program Learning Outcomes**

1. Students will demonstrate computational skills to extract different types and quantities of data from multiple sources and create visualizations and other data products for various audiences;
2. Students will demonstrate statistical knowledge to build mathematical models and ensure the validity of data and its analysis;
3. Students will demonstrate domain knowledge in one or more key areas of application to gain domain specific information from data and its analysis and to communicate insights from that data that support understanding of and solutions for critical problems within the domain;
4. Students will demonstrate contemporary computer-based and data-oriented analytical skills and related ethical considerations to support a broad synthesis of knowledge including contributions from humanities, sciences and applied sciences, traditional ecological knowledges, and other foundational frameworks for understanding; and
5. Students will communicate effectively with a diverse range of audiences.

## **Bachelors of Science in Data Science Curriculum**

### **Requirements for the major (63 – 69 units)**

#### **Prerequisite (0 – 6 units)**

Students may demonstrate calculus readiness by achieving an appropriate score on a department administered placement test, by successful completion of a course in precalculus, or by completing one of the following prerequisite course pathways, or their equivalent:

MATH 102 (4) Algebra and Elementary Functions, OR  
MATH 101 (3) College Algebra AND MATH 101T (3) Trigonometry

#### **Lower Division (27 units)**

CS 111 (4) Computer Science Foundations  
DATA 111 (4) Intro to Programming and Comp Thinking for Data Science  
MATH 107 (3) Intro Linear Algebra  
STAT 109 (4) Introductory Statistics for the Applied Sciences  
MATH 109 (4) Calculus I  
MATH 110 (4) Calculus II  
DATA 271 (4) Data Structures, Wrangling, and Visualization for Data Science

#### **Upper Division Core (17 units)**

DATA 311 (3) Applied Data Analysis  
DATA 322 (3) Machine Learning for Data Science  
CS 325 (4) Database Design\*  
DATA 422 (4) Advanced Topics in Data Science  
DATA 450 (3) Capstone, Data Science

#### **Upper Division Statistics (4 units)**

Select one of the following statistics courses:

STAT 323 (4) Probability and Statistics\*\*  
STAT 333 (4) Linear Regression  
STAT 404 (4) Multivariate Statistics  
STAT 406 (4) Sampling Design and Analysis  
STAT 410 (4) Modern Statistical Modeling

Or an advisor approved statistics-related course in an area of application

\*CS 111 and DATA 111 will satisfy prerequisites for CS 325

\*\*Requires an additional prerequisite of MATH 210 (4 units) Calculus III

**Area of Application/Emphasis (15 units)**

To complete the Data Science degree, students are expected to gain expertise in an area to which Data Science may be applied. The area of application/emphasis must be an advisor-approved cohesive set of at least 15 units, 9 of which must be at the upper division level, drawn from existing coursework offered at the university. Suggested areas of emphasis include:

- Mathematics. For students who desire access to more technically demanding careers requiring extensive knowledge of mathematics.
- Biological Sciences. For students who wish to use data science to tackle a diverse set of biological questions in areas ranging from medicine to genomics to evolution.
- Business/Economics. For students with career goals that demand specialized business training. This emphasis will help students appreciate how data science methods support business or economic decision-making and can improve products, services, and organizations.
- Energy. For students interested in combining engineering and environmental science with data science. Career paths include engineering consulting firms, state or federal policy agencies, and private energy industry firms.
- Natural Resources and/or Environmental Planning. For students interested in careers as industry representatives, advocates, consultants, analysts and government planners working on natural resource and/or environmental issues.
- Justice. For students interested in careers which critically analyze crime patterns, access to justice, policy, or advocacy.
- Political Science. For students interested in using data science to help predict, explain, or analyze political phenomena and behavior.

Students also have the option, with advisor approval, to complete a minor or certificate program to complete the area of application/emphasis requirement.

**Descriptions of New Courses Proposed as Part of the Major**

DATA 111 (4) Introduction to Programming and Computational Thinking for Data Science- Intertwines three perspectives: inferential thinking, computational thinking, and real-world relevance. Students explore real data to understand relationships and patterns while learning critical skills in computer programming and basic statistical inference.

DATA 271 (4) Data Wrangling and Visualization- Provides an intensive, hands-on introduction to data wrangling, cleaning and visualization using a contemporary programming language. Learn

the fundamental skills required to acquire, transform, manipulate, and visualize data in a computing environment that fosters reproducibility. The overall goal is to create actionable data from raw sources and then perform exploratory analysis. These steps will include importing data, viewing data diagnostically, identifying outliers, imputing data, cleaning data, calculating basic statistics and creating informative plots.

DATA 311 (4) Applied Data Analysis- This team- and project-based course provides an opportunity to work through the entire data analysis pipeline in an applied context. Three modules cover (1) cleaning and exploring data, (2) visualizing data and (3) prediction, validation and uncertainty estimation. Students will advance written and verbal communication skills by reporting their findings.

DATA 322 (4) Machine Learning for Data Science- Provides a broad introduction to machine learning, datamining, and statistical pattern recognition. Topics include: (i) Supervised learning (ii), Unsupervised learning and (iii) Best practices in machine learning. The course draws from numerous case studies and applications, with a practical rather than theoretical emphasis.

DATA 422 (4) Advanced Data Science Methods and Ethics- Provides a treatment of advanced topics in Data Science. Topics include: (i) Privacy and Ethics, (ii) Multivariate Statistics, (iii) Big Data and Cloud Computing and (iv) Deep Learning. The course will draw from numerous case studies and applications, with a practical rather than theoretical emphasis.

DATA 450 (3) Data Science Capstone- Semester-long, student-led Data Science group project culminating in a written and an oral presentation. Projects explore an area of application. Preparation for professional life after graduation, including graduate school attendance, working as a Data Scientist, or other quantitative careers.

**CAL POLY HUMBOLDT**  
**University Senate**

**Resolution to Recommend New Bachelors of Science in Marine Biology**

11-21/22-ICC - February 8, 2022 - First Reading

**RESOLVED:** That the University Senate of Humboldt State University recommends to the Provost that the new Bachelors of Science in Marine Biology detailed in proposal [21-1446](#) be approved.

**RATIONALE:** The proposed Bachelors of Science in Marine Biology elevates the current Marine Biology concentration within Biology to a stand alone BS program. Through this program, students will develop knowledge and skills on the diversity of marine life, its evolutionary history, the importance to our planet, and how it is impacted by human activities. The Department of Biology and the ICC believe this major will provide students with knowledge and skills for future careers and endeavors in Marine Biology and associated positions (e.g. aquarium manager, museum curator, science librarian, laboratory technician, environmental consultant, microbiologist, biotechnology research technician, etc.) as well as graduate programs in Marine Biology. The ICC discussed feedback from the Oceanography and Fisheries departments about the framework of the proposed program being that of a Biology program with marine emphasis as opposed to a Marine Science framework. As the feedback was centered on differing viewpoints for the structure of the program, the ICC considered the history of support for establishing the Biology centered Marine degree, the plans in the works for the development of the future MS with the Marine Sciences framework, and the College Dean's support of this proposed program, and supports the Marine Biology Program as proposed. There are no new courses being proposed to support this program. This program is being proposed as part of the transition to a Polytechnic University.

**Bachelors of Science in Marine Biology Program Learning Outcomes**

1. Students will be able to identify and classify marine microbes, algae, invertebrates, fishes, birds and mammals, in the context of a phylogenetic framework;
2. Students will be able to describe how marine life functions at the gene, genome, cell, tissue, organ and organ-system level. They will be able to describe the development, reproduction, and behavior of different forms of marine life and use ecological and evolutionary principles to explain how these organisms perform their functions in an environmental context;

3. Students will be able to relate the physical features of the marine environment to the structure of marine populations, communities, and ecosystems and explain how they are affected by human activities;
4. Students will be able to explain how descent with modification has shaped all biological processes and why biological evolution offers the only logical scientific explanation for the simultaneous unity and diversity of life on earth;
5. Students will be able to apply the scientific method to questions in marine biology by formulating testable hypotheses, gathering data that address these hypotheses, and analyzing those data to assess the degree to which their scientific work supports their hypotheses; and
6. Students will be able to present scientific hypotheses and data both orally and in writing in the formats that are used by practicing scientists.

## **Bachelors of Science in Marine Biology Curriculum**

### **BS Marine Biology 119-128 units total**

#### **Prerequisite (0 – 6 units)**

Students may demonstrate calculus readiness by achieving an appropriate score on a department administered placement test, by successful completion of a course in precalculus, or by completing one of the following prerequisite course pathways, or their equivalent:

MATH 102 (4) Algebra and Elementary Functions, OR  
 MATH 101 (3) College Algebra AND MATH 101T (3) Trigonometry

#### **Lower Division (46 units)**

BIOL 105	(4) Principles of Biology
BIOL 255	(3) Marine Biology
BOT 105	(4) General Botany
CHEM 109	(5) General Chemistry I
CHEM 110	(5) General Chemistry II
CHEM 228	(4) Brief Organic Chemistry
MATH 105	(3) Calculus for the Biological Sciences & Natural Resources
OCN 109	(3) General Oceanography
OCN 109L	(1) General Oceanography
OCN 260	(1) Sampling Techniques and Field Studies



PHYX 106	(4) College Physics: Mechanics & Heat
PHYX 118	(1) College Physics: Biological Applications
STAT 109	(4) Introductory Biostatistics
ZOOL 110	(4) Introductory Zoology

**Upper Division (35-39 units)**

BIOL 307	(4) Evolution
BIOL 330	(4) Principles of Ecology
BIOL 340	(4) Genetics
BOT 356	(4) Phycology
FISH 310	(4) Ichthyology
ZOOL 314	(5) Invertebrate Zoology
BIOL 430	(3) Intertidal Ecology, or
OCN 310	(4) Biological Oceanography

Complete one of the following (3-4 units):

BIOL 350	(3) Cell Biology, or
BOT 310	(4) Gen. Plant Physiology, or
ZOOL 310	(4) Animal Physiology, or
FISH 311	(3) Fish Physiology

Complete at least one advanced marine biology elective from the following list, or from any optional course NOT taken above (3-4 units).

BIOL 418	(3) Marine Microbiology
BOT 553	(3) Marine Macrophyte Ecology
FISH 335	(3) US and World Fisheries
FISH 358	(4) Fisheries Data Analysis
FISH 375	(3) Mariculture
FISH 435	(4) Ecology of Marine Fishes
FISH 471	(3) Fish Diseases
FISH 474	(4) Conservation Genetics of Fish and Wildlife
FISH 478 or 578	(3) Fisheries Oceanography
FISH 558	(4) Fish Population Dynamics
OCN 301	(3) Marine Ecosystems - Human Impact
OCN 320	(4) Physical Oceanography
OCN 330	(4) Chemical Oceanography

OCN 340	(4) Geological Oceanography
OCN 410	(3) Zooplankton Ecology
OCN 420	(3) Oceans and Climate
STAT 333	(4) Linear Regression Models / ANOVA
STAT 404	(4) Multivariate Statistics
STAT 410	(4) Modern Statistical Modeling
ZOOL 530	(3) Benthic Ecology
ZOOL 552	(3) Advanced Invertebrate Zoology
ZOOL 556	(4) Marine Mammals

Complete one of the following (1-3 units):

BIOL 490	(1-2) Senior Thesis
BIOL 498	(2) Marine Biology Capstone Research
BIOL 499	(1-2) Directed Study
REC 471	(3) Scientific Diving

The Oceanography Department has had a chance to review the proposed curriculum for BS in Marine Biology. We would like to offer our approval for several of the updates proposed to the current BS in Biology (Marine Biology Concentration) curriculum. However, we still have concerns that the program overall doesn't fully leverage existing marine resources on campus to provide the strongest possible program.

A notable positive change in the proposed curriculum is the requirement that all students take OCN 260 - a 1 unit course in marine sampling techniques. This course utilizes the R/V *Coral Sea* more than any other course on campus, giving students on average more than 20 hours on the research vessel over 4 cruises. The addition of this course gives students the ship-based field time that they need to better understand sampling not only of marine organisms, but chemical and physical properties of the ocean environment, as well as the sediment and its inhabitants. This course is already taken by a subset of Marine Biology students who want to increase their at-sea time and broaden their field experience or pursue a minor in Oceanography. This course is typically offered every semester (although it has been reduced to once per year currently with the reduced student enrollment). If needed, we could add additional sections as programs build out, as it is only 2 WTU for each offering.

We also support the addition of specific electives in FISH, OCN and STAT which allow students to further specialize in a variety of marine areas or build their quantitative skill sets. Furthermore, adding FISH 311 to the cell biology/physiology options allows for one more opportunity for a marine-focused course. Addition of REC 471 acknowledges the important skills that scientific diving brings to students who choose to pursue the minor (whose other courses do not usually meet any major requirements). Overall, a student may choose options within OCN and FISH courses that would take up to 20 units out of the required 81 major units.

However, while the updated curriculum is certainly an improvement, it still focuses very heavily on the traditional biology courses, and does not take advantage of the wide variety of marine expertise among our various programs (unless a student makes an active effort to leverage those courses within options). A student could complete the Marine Biology major having taken only 5 units in OCN (OCN 109/109L/260) and 4 units in FISH (FISH 310), or only 9 out of 81 total units for the major. OCN and FISH curricula focus more heavily on interdisciplinary approaches to marine sciences as well as applications of biological principles to resource management of marine organisms. We believe that incorporating these courses better meets the spirit of the polytechnic curriculum, and also offers students valuable preparation for interdisciplinary work in the marine sciences. Additionally, these are not courses or emphases available at most undergraduate institutions. Leveraging these courses makes the program more unique and gives it a way to stand out from other Marine Biology program options in the CSU or other university systems.

We would encourage further consideration of the curriculum to explore more creative approaches to giving students flexibility in order to allow a larger marine emphasis. For instance, multiple pathways where students could focus more on algae (courses including Phycology, Chemical Oceanography, etc) or animals (more courses in invertebrates and fishes) to reduce numbers of required courses and give

more options for specialization. We also think that it does not make sense for students to choose between Intertidal Ecology and Biological Oceanography. Those two courses provide valuable knowledge of completely different marine ecosystems, and it would advantage marine biologists to be well-versed in both areas.

In closing, we appreciate the work that Biology has done to update their curriculum. Some positive changes have been made which will provide benefits to their prospective majors. However, we have an opportunity here to be more creative and leverage the unique resources HSU has in the marine sciences to make this program really stand out. We do not believe the proposed curriculum has taken advantage of those resources as much as they could.

Sincerely,  
HSU Oceanography

Christine Cass, Chair  
Jeffrey Abell  
Tamara Barriquand  
Daniel O'Shea