AGENDA

Item I. Approval of minutes from the Fall Faculty Meeting, December 11, 2014.

Item II. Opening comments.

Item III. Opportunity for faculty to ask questions arising from annual reports of the various college committees. (See appendix)

- Executive Committee
- Promotion and Tenure Committee
- Committee on Student Academic Distinction, Awards, and Appeals
- Curriculum and Advising Committee
- Faculty Instructional Development Committee
- Assessment Committee
- Endowed/College Professorships Committee

Item IV. Recommendation from the College Curriculum and Advising Committee to approve the proposed changes to the scientific base. (See appendix)

Item V. Recommendation from the College Curriculum and Advising Committee to approve the proposed changes to the Mathematics major. (See appendix)

Item VI. Recommendation from the College Curriculum and Advising Committee approve the proposed changes to the Russian major and minor. (See appendix)

Item VII. Recommendation from the College Curriculum and Advising Committee to approve the proposed changes to the Physics major and minor. (See appendix)

Item VIII. Opportunity to ask questions of the Dean.
APPENDIX

Item I. Approval of minutes from the Fall Faculty Meeting, December 11, 2014

College of Arts & Sciences Faculty Meeting
Thursday, December 11, 2014
3:30 p.m. – 5:00 p.m.
Jackie Gaughan Multicultural Center
Room 202/Ubuntu Room

3:45 Meeting called to order by Dean Francisco

Item I. Approval of minutes from the Spring Faculty Meeting on April 24, 2014.
Motion to approve the minutes of the previous meeting: motion made by Chris Bourke, seconded by Rick Bevins. No discussion. Minutes approved unanimously.

Item II. Opening comments. Dean Francisco thanked everyone for attending the meeting and welcoming him into the campus community.

He appointed Lloyd Ambrosius as parliamentarian.

Item III. Recommendation from the College Curriculum & Advising Committee to approve the proposed changes to the minor in Czech.
The chair of the college curriculum and advising committee, Lisa Kort-Butler, summarized the proposed changes in the minor and asked for questions. There were no questions. The proposal was unanimously approved.

Item IV. Recommendation from the College Curriculum & Advising Committee to approve the proposed changes to the major in Environmental Studies.
Lisa Kort-Butler summarized the proposed changes to the Environmental Studies major. She asked for questions. Debbie Minter noted that the biggest change is that instead of a list of courses in a related area, students will now simply take a Plan A minor or a second major in the area. Dawn Brathwaite asked about courses in other departments that are no longer being offered that are listed as option. Lisa Kort-Butler responded that the ES program should be notified of such changes, but addressing such changes was not a part of this approval process. The proposal was unanimously approved.

Item V. Recommendation from the College Curriculum & Advising Committee to approve the proposed changes to the major and minor in German.
Lisa Kort-Butler summarized the changes in the German major and minor. She asked for questions. There were none. The proposal was unanimously approved.

Item VI. Recommendation from the College Curriculum & Advising Committee to approve the proposed new Informatics minor.
Lisa Kort-Butler summarized the description of the new interdisciplinary minor in Informatics. She asked for questions. There were none. The proposal was unanimously approved.

Item VII. Recommendation from the College Curriculum & Advising Committee to approve the proposed changes to the minor in Sociology.
Lisa Kort-Butler summarized the proposed changes to the minor in Sociology. She asked for questions. There were none. The proposal was unanimously approved.

Item VIII. Recommendation from the College Curriculum & Advising Committee to approve the proposed new Software Development minor.
Lisa Kort-Butler summarized the proposed new minor in Software Development. She noted how it is open to students outside of computer science. She asked for questions. There were none.

The proposal was unanimously approved.

**Item IX. Recommendation from the College Curriculum & Advising Committee to approve the elimination the major in Speech Language Pathology & Audiology in the college.**

Lisa Kort-Butler summarized the proposal to eliminate the Speech Language Pathology and Audiology major within the College of A&S. She asked for questions. There were none.

The proposal was unanimously approved.

**Item X. Discussion regarding changes to the Bylaws for the college.**

Dean Francisco introduced Dan Hoyt to discuss the proposed changes to the College of A&S bylaws. He noted that this is a discussion item only. No vote will be taken today. An electronic ballot will be going out to faculty in January for a vote.

Dan Hoyt explained that the Appendix contained a summary of three major changes and several minor changes. The major changes are 1) quorum requirements, 2) modification of the duties of the College Executive committee, and 3) changes in the composition of the Promotion and Tenure committee.

1. **Quorum requirements.** Current bylaws require 50 as quorum. But attendance is not usually that high. Hoyt pointed out that the kinds of changes made at the meetings, such as to curriculum, might not be valid if we adhere strictly to the 50-person-quorum requirement. He explained that Debbie Minter had researched how other organizations handled this issue and based on this research they decided to make a proposal to lower the quorum requirement to 40. Then, if this number is not met, the meeting would adjourn, reconvene, and a new quorum number of 10 would be in force.

Minter said it was important to note that when there have been controversial items on the agenda, many more faculty have attended, and in those cases more attention was given to meeting the 50-person quorum. When we were dealing with ACE or college requirements, the room was full. But at non-controversial meetings, which are the norm, the quorum is sometimes not met.

Minter noted that people may wonder: Why not just set the quorum at 10? One reason is to create a mechanism so as to avoid slipping controversial issues through with only a 10-person quorum. This proposal is modelled on the process used by other organizations that have faced similar problems.

She noted that often meetings do not have controversial items and so attendance is low. Dan Hoyt said he has been surprised that more folks don't attend even when non-controversial issues are at stake, since it is an opportunity to meet with and discuss important issues the Dean.

Leen-Kiat Soh asked what other colleges did to address this problem? Minter noted that we're not sure, but she pointed out that faculty don't vote on curriculum matters in other colleges, but we do. So the situation is different.

Hoyt noted that we really do need a quorum for curricular changes.

2) **Executive Committee changes.**

A) Arts & Science Council:

Dan Hoyt explained that in reviewing old governance documents it was noticed we were required to have an Arts & Science council, but we have not done that for a long time. This body had been replaced with the Executive Committee and a separate promotion/tenure committee. The A&S council was no longer functional.

B) Faculty Instructional Development Committee:

He noted that there is currently a Faculty Instructional Development committee, which meets once a year to evaluate teaching award portfolios. The proposal would eliminate this committee. The considerable work that goes into populating the committee was not proportionate to its duties. These duties could readily be done by a subcommittee of the EC, which is partially elected and widely representative of the college. He emphasized that the proposal does not eliminate the function of the committee, but rather that the function is being folded into the EC duties. He noted that this will be an easy subcommittee function because there have typically been, as this year, only 13 nominations for the 12 awards. He would like to make the awards more
Evelyn Jacobson asked how, if all of the business of the EC is confidential, such confidentiality is managed with such broad representation on the EC. How are criteria kept confidential? How is this balanced with representation?

Hoyt replied that confidentiality comes from the Dean using the committee as a sounding board. At times the committee might not approve of suggestions and that discussion would remain confidential. He noted, however, that not every action of the committee is confidential. He wonders if perhaps the confidentiality language should be revisited. He asked if such a change might address Jacobson’s concern? It is worth considering how these competing interests—representation and confidentiality—are reconciled. He said he will relook at the confidentiality issue.

C. Assessment Committee:
Hoyt explained that the proposal streamlines the assessment committee: it will be reduced in size for efficiency. Diana Pilson noted that this committee was once very large. Debbie Minter explained that it’s hard to fill the spots, but it is awkward and difficult to do the work when the committee is not full, so a smaller committee is more practical. The function of the committee would remain the same.

3) Promotion & Tenure Committee: Dan Hoyt explained that this committee has traditionally been structured for proportionate representation, with five faculty members: two from sciences, one from humanities, and one from social sciences, with a 5th member who rotates in a four-year cycle between social sciences and humanities.

However there is a problem with this system. By participating as Associate Dean, Hoyt always brought a Social Science perspective to the deliberations. However, at times when there was only one humanities’ representative on the committee, when a person from his or her dept. came up for promotion or tenure, this humanities member had to recuse him or herself. Hence there would be no humanist reviewing the files.

The new proposal is to go to six faculty members on the committee with 2-2-2 representation. Service to be for three years. That way there will always be someone with at least one year of experience from each area on the committee.

Hoyt noted that it is hard to get people to serve four-year terms. Three-year terms will increase likelihood of service, which will insure better representation.

He explained that, while no complaints or problems had arisen with the current system, they could. He notes that this is a fairly major change. The current members of the committee will have their terms adjusted to three years, which can be easily done. With the new system, each year there will be two new members on the committee and four experienced members. And the experienced members will represent all three areas.

Dan Hoyt asked if there were any questions about this proposal. There were none.

4) Miscellaneous changes:
Hoyt noted that the proposal makes some changes in the EC responsibilities, including the addition of some functions, such as the role in the previously discussed Instructional Awards. He pointed out that a judging sub-committee of the EC, with additional adhoc members, enhanced the prestige of the CAS awards. He will also look into enhancing and clarifying the confidentiality language.

He explained that ballot language will be changed by deleting the requirement that they would be "mailed" and no longer referencing any particular method of distribution. This change enables digital voting.

He emphasized that these changes are important and that faculty take the time to consider them.

He asked for suggestions:
Regina Werum wondered how we could explain to other faculty why these changes are important not just for us but that they are also the best practices followed elsewhere. She noted that the quorum change, for example, is hard to
understand and suggested we include language explaining the rationale.

Chris Bourke asked why there is no language requiring that the P&T committee members can't be from the same dept. Debbie Minter explained that such language is actually in there.

Steve Lahey asked if the EC should have the same language of restriction as the P&T committee. Minter explained that the same language is in fact in effect.

Dan Hoyt noted that when appointments to the committees are made, the Dean looks to fill the gaps. Minter pointed out that this is one reason it takes a long time to fill some positions.

**Item XI. Opportunity to ask questions of the Dean.**

Rick Bevins asked what has been the Dean's biggest surprise in his first semester at UNL. The Dean replied that his biggest surprise had come the previous night. He had gotten a call from a friend who was just been appointed as a scientific envoy to State Dept. Sec. John Kerry. This friend had asked him if he enjoyed his new job and he had replied, yes, he was enjoying it. He noted that he had a really great support staff, and that the assistant deans were incredible.

He went on to say that his biggest challenge is that no day is the same. What makes it go by fast is that everyone is able to talk about problems, brainstorm, and work through them. Other enjoyable things he noted were that, despite all the challenges facing the university, he has worked with excellent dept. chairs and program directors who manage to roll with the punches, think creatively, innovatively, and respond responsibly, rising to the challenge. Their thoughtful response helps to keep the college moving forward. There are great chairs and directors, he said, as well as faculty and staff. He praised the staff, who, he noted, are easily overlooked but who are crucial to help things run smoothly. In spite of all the challenges the college faces, his first six months have been enjoyable. There were a few moments that were truly challenging, but a solid team help him get through.

Regina Werum asked him if he missed living in Indiana. He replied, "No I don't because it's sunnier here, those photons are really good."

Diana Pilson asked him when he started wearing the baseball cap? He joked that he mostly wears it with the bill to the front, but may turn it backwards.

Steve Lahey asked about the progress of fundraising. The Dean replied that he's gotten started, and it might be good to update now. He was surprised at the lack of critical marketing and fundraising infrastructure. There's not enough marketing and media, he noted, and so we need to do more, and are beginning to. The faculty, he pointed out, need to better share information with the Dean's office in order to get the message out. Another thing that was not in place was a fundraising team and strategy. He had just spoken with potential funders about the lack of an external Dean's Advisory Council. He will be putting one together, noting that there had been one but that it was disbanded about 15 years ago. He joked that he hopes the new football coach wins because losing games doesn't help with fundraising. Winning makes it easier. A new fundraising structure is being put in place, with a new staff person dedicated to funding priorities and programs. Conversations with donors are happening. Next semester he will do more travelling for fundraising.

Marco Abel asked the status of the Dean's idea of making changes to the system for allocation of temporary instructional funds, shifting to a system that would provide more long term support. Has more consideration been given to that? The Dean replied that they were trying an experiment. Under Debbie Minter's leadership, they were taking one program as a model to see if this arrangement can be made to work. They will be using that department as a test case. So yes, they are working on trying to secure longer term funding. For some programs the discussion has started, especially smaller ones, in order to get them to think about their budget in longer term. The Dean has targeted smaller programs for the experiment. Then the lessons will be applied to larger departments. If the experiment proves successful, then good, it can be widened. But if it is not successful, then it won't be too disruptive to the college. We need to think about longer term budget planning, but have to work within the budget of the university.

The Dean is starting some discussion with the EC on budgetary models. He noted that most schools use an incremental model. Some have moved to an RCM (Responsibility Centered Model). Some others use performance based models in which the budget is determined by how well the unit performs. We need to think forwardly about the best model for us, he said. At the CIC
deans meeting this is a big topic. Many schools are changing their models.

The Dean asked the faculty if they are satisfied with where the college is going. Do they see where it's going? At the current time, he notes, we are putting out a lot of fires, but that doesn't necessarily mean we're going anywhere, but rather just sustaining the current position. But we should be moving forward and are currently putting some infrastructure in place to achieve these goals.

Dan Hoyt asked the Dean, based on his experience before he came here, how he has managed to stay calm putting out fires, dealing with budget cuts, the VSIP retirement package, etc. How did he manage to stay so calm with a rocky first year, and dealing with inside high fastballs. The Dean replied that he knew how to duck. More seriously, he was thankful for the assistant deans, the staff, the chairs and directors.

Julia McQuillan pointed out that she loved the college going in the direction of "the awesome power ranger" video on Halloween. It was exciting, a good direction, and she feels good about that.

Dean Francisco concluded by noting that we have three very important units in the college--humanities, social sciences, and sciences--all of which bring so much to human experience. What they contribute can't be achieved in any other college. One of the exciting things for him is learning about the diverse culture of the college and what it offers students.

Adjourned: 4:43

Respectfully submitted,
Thomas Lynch
Faculty Secretary

Item III. Opportunity for faculty to ask questions arising from annual reports of the various college committees.

ANNUAL REPORT OF THE EXECUTIVE COMMITTEE
The Committee offers advice and comment to the Dean’s office and discusses issues identified by the Dean. Executive committee meeting minutes can be found at http://cas.unl.edu/executivecommittee.shtml.


ANNUAL REPORT OF THE PROMOTION & TENURE COMMITTEE
The annual review of tenure and promotion recommendations began in late November. The committee reviewed 11 recommendations regarding promotion to Associate Professor with tenure, 10 recommendations regarding promotion to Full Professor, 1 recommendation for promotion to Associate Professor of Practice, and 1 recommendation for promotion to Associate Research Professor. The committee also interviewed 2 job candidates at the associate and full ranks for consideration of tenure.

2014-15 Committee Members: Professors Byrav Ramamurthy (Computer Science), Mark Walker (Mathematics), Shari Stenberg (English), Elizabeth Theiss-Morse (Political Science), Stephen Lahey (Classics & Religious Studies) and Associate Dean Dan Hoyt.
ANNUAL REPORT OF THE COMMITTEE ON STUDENT ACADEMIC DISTINCTION, AWARDS AND APPEALS

For the past several years the college combined its process with the UNL Office of Scholarships and Financial Aid. There were 567 students that completed the A&S portion of the application. The committee considered just under 300 students for awards from the 32 scholarship funds controlled by the college. There were 71 awards made from those funds impacting 60 students. The college will make one nomination for the Kate Field Grant-in-aid and two nominations for the Donald Walters Miller Scholarship.

NOTE: The Dean, along with the Associate Deans in the college, annually review applications for the Dean’s Experiential Learning Scholarships. There were 27 applicants for the Dean’s Experiential Learning Scholarships. We are working towards granting all 27 applicants a scholarship award.

There was one grade appeals elevated to the college for this academic year. After review, the committee opted not to hear the appeal.

2014-2015 Committee Members: Professors Sabrina Russo (School of Biological Sciences), Eve Brank (Psychology), Adam Houston (Earth & Atmospheric Sciences) Timothy Schaffert (English), Jolene Smyth (Sociology); Joshua Lacey Graduate Student representative, Ashley Anderson and Emily Madcharo (Student Advisory Board Member), and Associate Dean Debbie Minter. NOTE: The student members only participate in grade appeal decisions. Ken Bloom (Physics & Astronomy) served during the spring semester while Dr. Russo was on sabbatical.

ANNUAL REPORT OF THE CURRICULUM COMMITTEE & ADVISING COMMITTEE
The committee reviewed 12 ACE proposals; 26 new course with ACE proposals; two removal of ACE from course proposals; 37 new course proposals; 78 change in course proposals; 12 course deletion proposals; 27 proposals for various majors and minors; one proposal for changes in college requirements and one proposal for Individualized Program of Study.

The Committee forwarded to the faculty the following recommendations:
- to approve changes to the Scientific base.
- to approve changes in the minor in Czech.
- to approve changes in the major in Environmental Studies.
- to approve the new minor in Informatics Development.
- to approve changes in the major in Mathematics.
- to approve changes in the major and minor in German.
- to approve changes in the major and minor in Physics.
- to approve changes in the major and minor in Russian.
- to approve changes in the minor in Sociology.
- to approve the new minor in Software Development.
- to approve the elimination of the Speech Language, Pathology & Audiology as a major in Arts & Sciences.

The Committee approved non-substantive changes for African Studies minor, African American Studies Minor, Archaeology minor, Classics & Religious Studies major, Communication Studies major, Computer Science major and minor, Digital Humanities Minor, Environmental Studies major, Ethnic Studies major and minor, Geology major, Humanities In Medicine Minor, Latin American Studies major and minor, Medieval & Renaissance Studies major and minor, Meteorology-Climatology minor, Native American Studies minor, and Women's & Gender Studies major and minor. These changes went directly to the bulletin editor.

Finally, the committee made nominations for vacancies on the College Curriculum Committee for the 2014-2015 AY.

The chair for the 2014-2015 academic year will be decided at the next committee meeting.
2014-2015 Committee Members: Professors Lisa Kort-Butler, Chair (Sociology), Stephen Hartke (Mathematics) Dawne Curry (History-on leave Spring 2015), Christina Binek (Physics & Astronomy) Roland Vegso (English); Ashley Anderson and Reed Jareke (Student Advisory Board); Tony Lazarowicz (A&S Advising Center); Michael Dodd (University Curriculum Committee-A&S Representative); Christina Fielder (Director, A&S Advising Center); and Associate Dean Debbie Minter (Executive Secretary).

ANNUAL REPORT OF THE FACULTY INSTRUCTIONAL DEVELOPMENT COMMITTEE
The Faculty Instructional Development Committee considered nominations for College and University teaching awards, and for College Outstanding Research and Creativity Awards.

The Committee considered nominations for the College Distinguished Teaching Awards. Award winners are: Associate Professor of Earth and Atmospheric Sciences Mark R. Anderson, Assistant Professor of English Peter J. Capuano, Assistant Professor of English Stacey Waite, Associate Professor of Modern Languages and Literatures Iker Gonzalez-Allende, Associate Professor of Mathematics Allan Donsig, and Assistant Professor of Chemistry Marilyne Stains.

The Committee awarded the Hazel R. McClymont Distinguished Teaching Fellow Award to Associate Professor of English Sharisse Stenberg.

The Committee selected one nomination for the Annis Chaikin Sorensen Award to forward to Academic Affairs. Our nominee, History Professor Thomas B. Borstelmann received the award.

Four nominations for the Harold and Esther Edgerton Junior Faculty Award were forwarded to the UNL Teaching Council. Assistant Professor of History, Katrina Jagodinsky, received the award.

The Committee selected four faculty members to receive College Outstanding Research and Creative Activity Awards. Awardees are: in the Humanities, English Professor Stephan Behrendt and Modern Languages and Literatures Professor Jordan Stump; in the Social Sciences, Psychology Professor Ming Li; and in the Sciences, Chemistry Professor Andrzej Rajca.

The awardees were honored at various events including the College Celebration of Excellence on April 10, 2014.

2014-2015 Committee Members: Professors Nora Peterson (Modern Languages & Literatures), Petronela Radu (Mathematics), Eve Brank (Psychology), Jordan Kugler, Student Advisory Board representative, Jessica Rivera, Graduate Student representative, Associate Dean Diana Pilson.

ANNUAL REPORT OF THE ASSESSMENT COMMITTEE
The Assessment Committee reviewed Biennial Undergraduate Program Assessments for each major in the College (submitted in December 2014) and wrote responses to individual units (January and February 2015). In addition, Program Assessments and the College responses were forwarded to Academic Affairs. In general, the committee noted that all units articulated a plan for assessment. A majority of units had conducted the assessment and reported results. Many units were advised to align their assessments with Learning Outcomes for the major and/or to use direct assessment of student work to evaluate the Learning Outcomes.

The committee also developed a “Guidelines for Program Assessment” document that was forwarded to departments. In fall 2015 departments will be asked to develop an assessment plan that will be implemented and reported in the fall 2016 Biennial Undergraduate Program Assessment reports.

2014-2015 Committee Members: Professors Melissa Homestead (English), Jason Kautz (Chemistry), Daniel Leger (Psychology), Brian Couch (Biological Sciences), and Associate Dean Diana Pilson.
ANNUAL REPORT OF THE ENDOWED/COLLEGE PROFESSORSHIP COMMITTEE
The Committee reviewed and recommended 5 renewal applications for College professorships and 8 renewals for University Professorships to the Dean.

2014-2015 Committee Members: Professors Cal Garbin (Psychology), Tracy Frank (Earth & Atmospheric Sciences), Carolyn Pope Edwards (Psychology) Jay Storz (Biological Sciences), Jordan Stump (Modern Languages & Literatures); Associate Dean Dan Hoyt.

Item IV. Recommendation from the College Curriculum and Advising Committee to approve the proposed changes to the scientific base.

Current:
Scientific Base

The bachelor of science degree requires students to complete 60 hours in mathematics and natural sciences, including:

1. At least one of the following quantitative courses: CSCE 235, MATH 104, PHIL 211, or any mathematics or statistics course numbered 106 or above, except MATH 200 and MATH 201.

2. At least one natural or physical science course and at least 1 credit of laboratory work, taken as part of a course or separately, from the following departments: biochemistry (BIOC), biological sciences (BIOS), chemistry (CHEM), earth and atmospheric sciences (GEOL, METR), or physics and astronomy (PHYS, ASTR), ANTH 242/ANTH 242L, ENVR 201, GEOG 155, and the following geography techniques courses also apply: GEOG 317, GEOG 412, GEOG 414, GEOG 415, GEOG 417, GEOG 418, GEOG 419, GEOG 420, GEOG 422, GEOG 425, and GEOG 432. Other courses that may be applied toward the 60 hour total include courses in actuarial science for which calculus or above is a prerequisite and up to 12 hours of scientific and technical courses offered by other colleges with approval of the academic advisor.

Proposed:
Scientific Base

The bachelor of science degree requires students to complete 60 hours in mathematical, physical and natural sciences. Approved courses for scientific base credit come from the following College of Arts & Sciences disciplines: Actuarial Science, Astronomy, Biochemistry (excluding BIOC 101), Biological Sciences (excluding BIOS 150, 160, 203), Chemistry (excluding CHEM 101), Computer Science (excluding CSCE 10), Geography (selected techniques courses), Geology, Life Sciences, Mathematics (excluding courses below MATH 104), Meteorology, Statistics and Physics.

See your degree audit or a College of Arts and Sciences advisor for a complete list including individual classes that fall outside of the disciplines listed above. Up to 12 hours of scientific and technical courses offered by other colleges may be accepted toward this requirement with approval of a college advisor.

Rationale: This is clean-up. The scientific base was not updated with the changes to ACE and College Distribution Requirements went into effect.
Item V. Recommendation from the College Curriculum and Advising Committee approve the proposed changes to the Mathematics major. NOTE: Left column is current and right column is proposed.

Department of Mathematics. For details of these programs, see the Graduate Studies Bulletin.

**MAJOR REQUIREMENTS**

**Bachelor of Arts**

The BA degree is ideal for the student who wants to combine a mathematics major with another major or several minors in the humanities or the social sciences or for the student dual matriculating with another college.

**Core Requirements**

- A complete calculus sequence: MATH 106, MATH 107, MATH 208 or MATH 108H, MATH 109H, or equivalent
- 21 hrs (seven courses) selected from the Advanced Mathematics Course List.

**Specific Major Requirements for the BA**

The seven mathematics courses must be distributed as follows:

- MATH 221 or MATH 380/STAT 380
- MATH 314, MATH 310, and MATH 325
- At least two advanced mathematics courses at the 400-level
- One more advanced mathematics course

**NOTE:** Students may substitute a more advanced course in the same area for a required mathematics course. Interested students should visit with the Chief Undergraduate Advisor for more information about this option.

**Program Assessment.** In order to assist the department in evaluating its programs, all majors should plan to participate in an exit interview during their last semester before graduation. Please make arrangements with the Chief Undergraduate Advisor.

**Bachelor of Science**

**Core Requirements**

- A complete calculus sequence: MATH 106, MATH 107, MATH 208 or MATH 108H, MATH 109H, or equivalent
- 24 hrs (eight courses) selected from the

**MAJOR REQUIREMENTS**

**Bachelor of Arts**

The BA degree is ideal for the student who wants to combine a mathematics major with another major or several minors in the humanities or the social sciences or for the student dual matriculating with another college.

**Core Requirements**

- A complete calculus sequence: MATH 106, MATH 107, MATH 208 or MATH 108H, MATH 109H, or equivalent
- 21 hrs (seven courses) selected from the Advanced Mathematics Course List.

**Specific Major Requirements for the BA**

The seven mathematics courses must be distributed as follows:

- MATH 221 or MATH 380/STAT 380
- MATH 314, MATH 310, and MATH 325
- At least two advanced mathematics courses at the 400-level
- One more advanced mathematics course

**NOTE:** Students may substitute a more advanced course in the same area for a required mathematics course. Interested students should visit with the Chief Undergraduate Advisor for more information about this option.

**Program Assessment.** In order to assist the department in evaluating its programs, all majors should plan to participate in an exit interview during their last semester before graduation. Please make arrangements with the Chief Undergraduate Advisor.

**Bachelor of Science**

**Core Requirements**

- A complete calculus sequence: MATH 106, MATH 107, MATH 208 or MATH 108H, MATH 109H, or equivalent
- 24 hrs (eight courses) selected from the Advanced Mathematics Course List
- An approved Option Declaration form
Specific Major Requirements for the BS

Program Assessment. In order to assist the department in evaluating its programs, all majors should plan to participate in an exit interview during their last semester before graduation. Please make arrangements with the Chief Undergraduate Advisor.

Tracks/Options/Concentrations/Emphases Requirements

Option C (Concentration)

This option is ideal for students wishing to combine a strong mathematics education with a coherent body of course work in another discipline. Specific requirements above calculus are as follows:

- The eight required mathematics courses must be distributed as follows:
  - MATH 314
  - Either MATH 221 or MATH 380/STAT 380
  - MATH 310 and MATH 325
  - At least two more advanced mathematics courses at the 400 level
  - Two additional advanced mathematics courses

- Any Plan A minor or an approved 18-hour concentration outside of mathematics.

NOTE: One 400-level course in the area of the concentration may be substituted for one of the required two additional advanced mathematics courses, provided the course makes significant use of advanced mathematics. The Chief Undergraduate Advisor must approve the substitution.

Option E (Education)

This option is ideal for students interested in teaching mathematics at the secondary level. Specific requirements above calculus are as follows:

- MATH 310, MATH 314, MATH 325, MATH 350, MATH 380/STAT 380, MATH 405, MATH 407, MATH 408
- An education minor or an approved 18-hour concentration in education

Option R (Research Experience)

This option is recommended for students interested in independent work and for students planning to pursue graduate work in mathematics. Specific requirements above calculus are as follows:
pursue graduate work in mathematics. Specific requirements above calculus are as follows:

- The eight required mathematics courses must be distributed as follows:
  - MATH 221, MATH 310, MATH 314, and MATH 325
  - At least three advanced mathematics courses at the 400 level
  - One more advanced mathematics course

- An approved undergraduate research experience. A variety of options exist for meeting this requirement. They include 1) research experiences such as an REU or UCARE that leads to a project paper, 2) a senior honors thesis or a thesis approved for graduation with distinction, or 3) a grade of P in MATH 496, Undergraduate Research Seminar (this course would be in addition to the advanced mathematics courses requirement above). To satisfy this requirement, students must file with the Chief Undergraduate Advisor a) a Research Experience contract that is approved by the Chief Undergraduate Advisor and b) the thesis, research papers, or projects as required by the contract. Visit with the Chief Undergraduate Advisor for more information.

**Option S (Statistics)**

This option is recommended for students interested in a mathematics major and a strong body of course work in statistics. Specific requirements above calculus are as follows:

- The eight required mathematics courses must be distributed as follows:
  - MATH 314 and MATH 380/STAT 380
  - MATH 310 and MATH 325
  - At least two advanced mathematics courses at the 400 level.
  - Two more advanced mathematics courses

- 9 hrs of statistics numbered 300 or above in addition to MATH 380/STAT 380

**NOTE:** For this option, one 400-level statistics course may be substituted for one of the required two additional advanced mathematics courses.

**NOTE:** Under any option, students may substitute a more advanced course in the same area for a required mathematics course. Interested students should visit with the Chief Undergraduate Advisor for more information about this option.

**ADDITIONAL MAJOR REQUIREMENTS**

- The eight required mathematics courses must be distributed as follows:
  - MATH 221, MATH 310, MATH 314, and MATH 325
  - At least three advanced mathematics courses at the 400 level
  - One more advanced mathematics course

- An approved undergraduate research experience. A variety of options exist for meeting this requirement. They include 1) research experiences such as an REU or UCARE that leads to a project paper, 2) a senior honors thesis or a thesis approved for graduation with distinction, or 3) a grade of P in MATH 496, Undergraduate Research Seminar (this course would be in addition to the advanced mathematics courses requirement above). To satisfy this requirement, students must file with the Chief Undergraduate Advisor a) a Research Experience contract that is approved by the Chief Undergraduate Advisor and b) the thesis, research papers, or projects as required by the contract. Visit with the Chief Undergraduate Advisor for more information.

**Option S (Statistics)**

This option is recommended for students interested in a mathematics major and a strong body of course work in statistics. Specific requirements above calculus are as follows:

- The eight required mathematics courses must be distributed as follows:
  - MATH 314 and MATH 380/STAT 380
  - MATH 310 and MATH 325
  - At least two advanced mathematics courses at the 400 level.
  - Two more advanced mathematics courses

- 9 hrs of statistics numbered 300 or above in addition to MATH 380/STAT 380

**NOTE:** For this option, one 400-level statistics course may be substituted for one of the required two additional advanced mathematics courses.

**NOTE:** Under any option, students may substitute a more advanced course in the same area for a required mathematics course. Interested students should visit with the Chief Undergraduate Advisor for more information about this option.

**ADDITIONAL MAJOR REQUIREMENTS**

Prerequisite Requirements/Rules
Prerequisite Requirements/Rules

The prerequisites listed for a course may be replaced by equivalent preparation. One prerequisite for all Advanced Mathematics courses is successful completion of MATH 106, MATH 107, MATH 208 (or MATH 108H, MATH 109H) or equivalent. Additional specific prerequisites, if any, are listed with the course. Two courses past calculus are required prerequisites for all 400-level mathematics courses. All topics, independent study, reading courses and seminars require permission of the instructor before registering; and these courses do not count toward the major requirements unless approved by the Chief Undergraduate Advisor.

Grade Rules

Pass/No Pass Limits

For majors or minors, no calculus course can be taken Pass/No Pass. (Students in violation of this should consult with the Chief Undergraduate Advisor for possible alternative requirements.) For majors or minors, at most 3 hours of the advanced courses may be taken as Pass/No Pass.

GPA Requirements
A minimum cumulative GPA of 2.5 in those courses used to satisfy the Advanced Mathematics course requirements.

Requirements for Minor Offered by Department

Plan A
A complete calculus sequence plus two advanced mathematics courses.

Plan B
A complete calculus sequence.

Pass/No Pass. For majors or minors, no calculus course can be taken Pass/No Pass. (Students in violation of this should consult with the Chief Undergraduate Advisor for possible alternative requirements.) For majors or minors, at most 3 hours of the advanced courses may be taken as Pass/No Pass.

Justification

Apparently (according to Christina Fielder), we are unique in the college in having a GPA requirement. I needed to do waiver for a December graduate who fell just short of this threshold. This semester I will likely be doing two more waivers. I’ve discussed this with our Undergraduate Program Committee as well as Judy Walker (Chair) and we are unanimous in wanting to remove this requirement.

Additional Information
Item VI. Recommendation from the College Curriculum and Advising Committee approve the proposed changes to the Russian major and minor.

MAJOR REQUIREMENTS

Specific Major Requirements

Minor Requirement

Program Assessment. In order to assist the department in evaluating the effectiveness of its programs, majors will be required to assemble and maintain a portfolio. In their junior year, majors will be assigned a faculty adviser who will inform students of the required contents of the portfolio, deadlines and procedures. During their last semester, French and Russian majors will be required to provide oral and written assessment for their portfolios. Results of participation in this assessment activity will in no way affect a student’s GPA or graduation.

Minor Requirements: 21 hours of courses numbered 300 or above, including RUSS 303 and RUSS 304 and 6 hours at the 400 level. A minor is required and may be taken in any area.

ADDITIONAL MAJOR REQUIREMENTS

Grade Rules

Pass/No Pass Limits

No courses in the department may be taken by students majoring or minoring in modern languages for Pass/No Pass credit.

REQUEST FOR MINOR OFFERED BY DEPARTMENT

Plan A

- 12 hours in one language at the 300 level or 400 level, including at least 6 hours from 301, 302, 303, 304, and 3 hours at the 400 level.

Plan D6 hours in one language, in courses numbered above 300, including at least 3 hours from 301, 302, 303, 304.

Pass/No Pass. No courses in the department may be taken by students majoring or minoring in modern languages for Pass/No Pass credit.

Justification

MAJOR REQUIREMENTS

Specific Major Requirements

Minor Requirement

Program Assessment. In order to assist the department in evaluating the effectiveness of its programs, majors will be required to assemble and maintain a portfolio. In their junior year, majors will be assigned a faculty adviser who will inform students of the required contents of the portfolio, deadlines and procedures. During their last semester, French and Russian majors will be required to provide oral and written assessment for their portfolios. Results of participation in this assessment activity will in no way affect a student’s GPA or graduation.

Minor Requirements: 27 hours of courses numbered 300 or above with at least 6 hours at the 400 level.

15 hours of RUSS 301, RUSS 302, RUSS 303, RUSS 304 and RUSS 408.

6 additional hours of RUGS courses above 300.

6 hours of Russian Area Studies from the following list or as approved by the major advisor:

HIST 330
HIST 338
HIST 382
HIST 462

Program Assessment. In order to assist the department in evaluating the effectiveness of its programs, majors will be required to assemble a portfolio. A faculty adviser will inform students of the required contents of the portfolio, deadlines and procedures. During their last semester, Russian majors will be required to provide oral and written materials for their portfolios. Results of participation in this assessment activity will in no way affect a student’s GPA or graduation.

Minor Requirement

A minor is required and may be taken in any area.

ADDITIONAL MAJOR REQUIREMENTS

Grade Rules

Pass/No Pass Limits

No courses in the department may be taken by students majoring or minoring in modern languages for Pass/No Pass credit.

REQUEST FOR MINOR OFFERED BY DEPARTMENT

Plan A

- 12 hours in one language at the 300 level or 400 level, including at least 6 hours from 301, 302, 303, 304, and 3 hours at the 400 level.

Pass/No Pass. No courses in the department may be taken by students majoring or minoring in modern languages for Pass/No Pass credit.
Expanding the major by 6 hours brings more depth to the major. Encompasses courses on films, history, politics, international relations and others, as approved by the major adviser, related to Russian studies. There are many professors in the university system teaching courses which could be included in the list of "Russian Studies" courses. Develop cross-listed courses and establish ties with other departments. Make the students more well-rounded as they embark on their career. NOTE: Eliminating the Plan B minor.

Additional Information

Most Recent Action Apr 8, 2015 1:49:35 PM
Submitter Miluse Saskova-Pierce

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Item VII. Recommendation from the College Curriculum and Advising Committee approve the proposed changes to the Physic major and minor. NOTE: Left column is current and right column is proposed.

MAJOR REQUIREMENTS

Core Requirements

Core Courses for the BS Degree (51 hrs)

The following required courses are listed in the recommended sequence.

PHYS 201 Modern Topics in Physics & Astronomy (1 hr)
MATH 106 Calculus I (5 hr)
PHYS 211 General Physics I (4 hr)
PHYS 221 General Physics Lab I (1 hr)
MATH 107 Calculus II (4 hr)
PHYS 212 General Physics II (4 hr)
PHYS 222 General Physics Lab II (1 hr)
CHEM 113 Fundamental Chemistry I (4 hr)
MATH 208 Calculus III (4 hr)
PHYS 213 General Physics III (4 hr)
PHYS 223 General Physics Lab III (1 hr)
MATH 221 Differential Equations (3 hr)
PHYS 231 Electrical & Electronic Circuits (3 hr)
PHYS 311 Mechanics (3 hr)
PHYS 431 Thermal Physics (3 hr)
PHYS 451 Electromagnetic Theory (3 hr)
PHYS 461 Quantum Mechanics (3 hr)

Core Courses for the BA Degree (36 hrs)

The following required courses are listed in the recommended sequence.

PHYS 201 Modern Topics in Physics & Astronomy (1 hr)
MATH 106 Calculus I (5 hr)
PHYS 211 General Physics I (preferred) (4 hr) &
PHYS 221 General Physics Lab I (preferred) (1 hr)
or
PHYS 141 Elementary General Physics I (5 hr)
MATH 107 Calculus II (4 hr)
CHEM 113 Fundamental Chemistry I (preferred) or
CHEM 111 Chemistry for Engineering & Technology or
CHEM 109 General Chemistry I (4)
PHYS 212 General Physics II (preferred) (4 hr) &
PHYS 222 General Physics Laboratory II (preferred)
(1 hr) or
PHYS 142 Elementary General Physics II (5 hr)
MATH 208 Calculus III (4 hr)

Graduate Work: The advanced degrees of Master of science and doctor of philosophy are offered. For details of these programs, see the Graduate Studies Bulletin.

MAJOR REQUIREMENTS

Core Requirements

Core Courses for the BS Degree (51 hrs)

The following required courses are listed in the recommended sequence.

PHYS 201 Modern Topics in Physics & Astronomy (1 hr)
MATH 106 Calculus I (5 hr)
PHYS 211 General Physics I (4 hr)
PHYS 221 General Physics Lab I (1 hr)
MATH 107 Calculus II (4 hr)
PHYS 212 General Physics II (4 hr)
PHYS 222 General Physics Lab II (1 hr)
CHEM 113 Fundamental Chemistry I (4 hr)
MATH 208 Calculus III (4 hr)
PHYS 213 General Physics III (4 hr)
PHYS 223 General Physics Lab III (1 hr)
MATH 221 Differential Equations (3 hr)
PHYS 231 Electrical & Electronic Circuits (3 hr)
PHYS 311 Mechanics (3 hr)
PHYS 431 Thermal Physics (3 hr)
PHYS 451 Electromagnetic Theory (3 hr)
PHYS 461 Quantum Mechanics (3 hr)

Core Courses for the BA Degree (36 hrs)

The following required courses are listed in the recommended sequence.

PHYS 201 Modern Topics in Physics & Astronomy (1 hr)
MATH 106 Calculus I (5 hr)
PHYS 211 General Physics I (preferred) (4 hr) &
PHYS 221 General Physics Lab I (preferred) (1 hr)
or
PHYS 141 Elementary General Physics I (5 hr)
MATH 107 Calculus II (4 hr)
CHEM 113 Fundamental Chemistry I (preferred) or
CHEM 111 Chemistry for Engineering & Technology or
CHEM 109 General Chemistry I (4)
PHYS 212 General Physics II (preferred) (4 hr) &
PHYS 222 General Physics Laboratory II (preferred)
(1 hr) or
PHYS 142 Elementary General Physics II (5 hr)
PHYS 213 General Physics III (4 hr)
PHYS 223 General Physics Lab III (1 hr)
MATH 221 Differential Equations (3 hr)

**Tracks/Options/Concentrations/Emphases Requirements**

**Standard Track – BA ONLY (24 hrs)**

The Standard Track is designed for students pursuing careers for which the knowledge and methodology of physics are essential. The following **required** courses are listed in the recommended sequence. **(12 hrs)**
PHYS 231 Electrical & Electronic Circuits (3 hr)
PHYS 311 Mechanics (3 hr)
PHYS 361 Concepts of Modern Physics (3 hr)
PHYS 441 Experimental Physics I (3 hr)
*In addition, at least 6 hours must be taken from the following courses (6 hr)*
PHYS 343 Physics of Lasers & Modern Optics (3 hr)
PHYS 391 Undergraduate Research (3 hr)
PHYS 451 Electromagnetic Theory (3 hr)
PHYS 461 Quantum Mechanics (3 hr)
PHYS 431 Thermal Physics (3 hr)
PHYS 480 Introduction to Lasers & Laser Applications (ELEC 480) (3 hr)
*In addition, at least 6 hours must be taken at the 300- or 400-level in mathematics, statistics, engineering, or science (including physics) (6 hr)*

**I. Professional Track – BS ONLY (18 hrs)**

The Professional Track is designed for students intending to pursue graduate study or employment in physics or a related scientific or engineering discipline. The following **required** courses are listed in the recommended sequence. **(12 hrs)**
PHYS 441 Experimental Physics I (3 hr)
PHYS 442 Experimental Physics II (3 hr)
PHYS 452 Optics & Electromagnetic Waves (3 hr)
PHYS 462 Atoms, Nuclei & Elementary Particles (3 hr)
*In addition, at least 6 hours must be taken from the following courses (6 hr)*
PHYS 343 Physics of Lasers & Modern Optics (3 hr)
PHYS 361 Concepts of Modern Physics (3 hr)
PHYS 391 Undergraduate Research (3 hr)
PHYS 401 Computational Physics (3 hr)
PHYS 422 Introduction to Physics & Chemistry of Solids (ELEC 422) (3 hr)
PHYS 443 Experimental Physics III (1-3 hr)
PHYS 480 Introduction to Lasers & Laser Applications (ELEC 480) (3 hr)
ASTR 403 Galactic & Extragalactic Astronomy (3 hr)

PHYS 208 Calculus III (4 hr)
PHYS 213 General Physics III (4 hr)
PHYS 223 General Physics Lab III (1 hr)
MATH 221 Differential Equations (3 hr)

**Tracks/Options/Concentrations/Emphasis Requirements**

**Standard Track – BA ONLY (24 hrs)**

The Standard Track is designed for students pursuing careers for which the knowledge and methodology of physics are essential. The following **required** courses are listed in the recommended sequence. **(12 hrs)**
PHYS 231 Electrical & Electronic Circuits (3 hr)
PHYS 311 Mechanics (3 hr)
PHYS 361 Concepts of Modern Physics (3 hr)
PHYS 441 Experimental Physics I (3 hr)
*In addition, at least 6 hours must be taken from the following courses (6 hr)*
PHYS 343 Physics of Lasers & Modern Optics (3 hr)
PHYS 391 Undergraduate Research (3 hr)
PHYS 451 Electromagnetic Theory (3 hr)
PHYS 461 Quantum Mechanics (3 hr)
PHYS 431 Thermal Physics (3 hr)
PHYS 480 Introduction to Lasers & Laser Applications (ELEC 480) (3 hr)
*In addition, at least 6 hours must be taken at the 300- or 400-level in mathematics, statistics, engineering, or science (including physics) (6 hr)*

**I. Professional Track – BS ONLY (18 hrs)**

The Professional Track is designed for students intending to pursue graduate study or employment in physics or a related scientific or engineering discipline. The following **required** courses are listed in the recommended sequence. **(12 hrs)**
PHYS 441 Experimental Physics I (3 hr)
PHYS 442 Experimental Physics II (3 hr)
PHYS 452 Optics & Electromagnetic Waves (3 hr)
PHYS 462 Atoms, Nuclei & Elementary Particles (3 hr)
*In addition, at least 6 hours must be taken from the following courses (6 hr)*
PHYS 343 Physics of Lasers & Modern Optics (3 hr)
PHYS 361 Concepts of Modern Physics (3 hr)
PHYS 391 Undergraduate Research (3 hr)
PHYS 401 Computational Physics (3 hr)
PHYS 422 Introduction to Physics & Chemistry of Solids (ELEC 422) (3 hr)
PHYS 443 Experimental Physics III (1-3 hr)
PHYS 480 Introduction to Lasers & Laser Applications
II. Optics and Lasers Track – BS ONLY (18 hrs)

The Optics and Lasers Track is designed for students intending to pursue graduate study or employment in optical or laser physics or in related engineering disciplines. The following required courses are listed in the recommended sequence. (12 hrs)

PHYS 343 Physics of Lasers & Modern Optics (3 hr)
PHYS 441 Experimental Physics I (3 hr)
PHYS 452 Optics & Electromagnetic Waves (3 hr)
PHYS 480 Introduction to Lasers & Laser Applications (ELEC 480) (3 hr)

In addition, at least 6 hours must be taken from the following courses (6 hr)

PHYS 391 Undergraduate Research (Up to 3 hours of PHYS 391 may be counted toward these 6 hours by substitution, provided that the research project is approved by the Advisor.)
PHYS 361 Concepts of Modern Physics (3 hr)
PHYS 401 Computational Physics (3 hr)
PHYS 422 Introduction to Physics & Chemistry of Solids (ELEC 422) (3 hr)
PHYS 442 Experimental Physics II (3 hr)
PHYS 462 Atoms, Nuclei & Elementary Particles (3 hr)

MATH 314 Linear Algebra (3 hr) or MATH 424 Introduction to Partial Differential Equations (3 hr)

III. Materials Physics Track – BS ONLY (18 hrs)

The Materials Physics Track (for the physics B.S.) is designed for students intending to pursue graduate study or employment in Materials Physics or in related disciplines. The following required courses are listed in the recommended sequence. (15 hrs)

CHEM 114 Fundamental Chemistry II (3 hr)
CHEM 116 Quantitative Chemistry Lab (2 hr)
MATL 360 Elements of Materials Science (4 hr)
MATL 462 X-ray Diffraction or MATL 471 Electron Microscopy of Materials (3 hr)
PHYS 422 Introduction to Physics & Chemistry of Solids (ELEC 422) (3 hr)

In addition, at least 3 hours must be taken from the following courses (3 hr)

PHYS 391 Undergraduate Research (Up to 3 hours of PHYS 391 may be counted toward these 3 hours by substitution, provided that the research project is (ELEC 480) (3 hr)

PHYS 403 Galactic & Extragalactic Astronomy (3 hr)
PHYS 404 Stellar Astrophysics (3 hr)
PHYS 405 Physics of the Solar System (3 hr)
PHYS 407 Physics of the Interstellar Medium (3 hr)
MATH 314 Linear Algebra (3 hr) or MATH 424 Introduction to Partial Differential Equations (3 hr)

II. Optics and Lasers Track – BS ONLY (18 hrs)

The Optics and Lasers Track is designed for students intending to pursue graduate study or employment in optical or laser physics or in related engineering disciplines. The following required courses are listed in the recommended sequence. (12 hrs)

PHYS 343 Physics of Lasers & Modern Optics (3 hr)
PHYS 441 Experimental Physics I (3 hr)
PHYS 452 Optics & Electromagnetic Waves (3 hr)
PHYS 480 Introduction to Lasers & Laser Applications (ELEC 480) (3 hr)

In addition, at least 6 hours must be taken from the following courses (6 hr)

PHYS 391 Undergraduate Research (Up to 3 hours of PHYS 391 may be counted toward these 6 hours by substitution, provided that the research project is approved by the Advisor.)
PHYS 361 Concepts of Modern Physics (3 hr)
PHYS 401 Computational Physics (3 hr)
PHYS 422 Introduction to Physics & Chemistry of Solids (ELEC 422) (3 hr)
PHYS 442 Experimental Physics II (3 hr)
PHYS 462 Atoms, Nuclei & Elementary Particles (3 hr)

MATH 314 Linear Algebra (3 hr) or MATH 424 Introduction to Partial Differential Equations (3 hr)

III. Materials Physics Track – BS ONLY (20 hrs)

The Materials Physics Track (for the physics B.S.) is designed for students intending to pursue graduate study or employment in Materials Physics or in related disciplines. The following required courses are listed in the recommended sequence. (17 hrs)

CHEM 114 Fundamental Chemistry II (3 hr)
CHEM 221 Elementary Quantitative Analysis (4 hr)
MATL 360 Elements of Materials Science (4 hr)
MATL 462 X-ray Diffraction or MATL 471 Electron Microscopy of Materials (3 hr)
PHYS 422 Introduction to Physics & Chemistry of Solids (ELEC 422) (3 hr)

In addition, at least 3 hours must be taken from the following courses (3 hr)

PHYS 391 Undergraduate Research (Up to 3 hours of
IV. Computational Physics Track – BS ONLY (17 hr)

The Computational Physics Track (for the physics B.S.) is designed for students intending to pursue graduate study or employment in Computational Physics or in related disciplines. The following required courses are listed in the recommended sequence. (11 hrs)

- CSCE 155N Computer Science I: Engineering & Science Focus (3 hr)
- CSCE 156 Computer Science II (4 hr)
- CSCE 251 UNIX Programming Environment (1 hr) or CSCE 252A FORTRAN Programming (1 hr)
- PHYS 401 Computational Physics (3 hr)

In addition, at least 6 hours must be taken from the following courses (6 hr)

- PHYS 391 Undergraduate Research (Up to 3 hours of PHYS 391 may be counted toward these 6 hours by substitution, provided that the research project is approved by the Advisor.)
- CSCE 235 Introduction to Discrete Structures (3 hr)
- CSCE 310 Data Structures & Algorithms (3 hr)
- CSCE 340 Numerical Analysis I (MATH 340) (3 hr)
- CSCE 456 Parallel Programming (3 hr)

ADDITIONAL MAJOR REQUIREMENTS

Grade Rules

Pass/No Pass Limits

Students majoring in physics may not take any course from the list of core courses or from the list of track courses for Pass/No Pass credit. Students who are getting a minor in physics may not take any courses listed as requirements for the Plan A or Plan B minors for Pass/No Pass credit.

REQUIREMENTS FOR MINOR OFFERED BY DEPARTMENT


- PHYS 201
- PHYS 211, PHYS 221, PHYS 212, PHYS 222 or PHYS 141, PHYS 142

IV. Computational Physics Track – BS ONLY (17 hr)

The Computational Physics Track (for the physics B.S.) is designed for students intending to pursue graduate study or employment in Computational Physics or in related disciplines. The following required courses are listed in the recommended sequence. (11 hrs)

- CSCE 155N Computer Science I: Engineering & Science Focus (3 hr)
- CSCE 156 Computer Science II (4 hr)
- CSCE 251 UNIX Programming Environment (1 hr) or CSCE 252A FORTRAN Programming (1 hr)
- PHYS 401 Computational Physics (3 hr)

In addition, at least 6 hours must be taken from the following courses (6 hr)

- PHYS 391 Undergraduate Research (Up to 3 hours of PHYS 391 may be counted toward these 6 hours by substitution, provided that the research project is approved by the Advisor.)
- CSCE 235 Introduction to Discrete Structures (3 hr)
- CSCE 310 Data Structures & Algorithms (3 hr)
- CSCE 340 Numerical Analysis I (MATH 340) (3 hr)
- CSCE 456 Parallel Programming (3 hr)

ADDITIONAL MAJOR REQUIREMENTS

Grade Rules

Pass/No Pass Limits

Students majoring in physics may not take any course from the list of core courses or from the list of track courses for Pass/No Pass credit. Students who are getting a minor in physics may not take any courses listed as requirements for the Plan A or Plan B minors for Pass/No Pass credit.

REQUIREMENTS FOR MINOR OFFERED BY DEPARTMENT


- PHYS 201
- PHYS 211, PHYS 221, PHYS 212, PHYS 222 or PHYS 141, PHYS 142

- PHYS 343 Physics of Lasers & Modern Optics (3 hr)
- PHYS 441 Experimental Physics I (3 hr)
PHYS 213
PHYS 223
Plus
3 additional hours chosen from physics courses listed as requirements for the major in physics.
Plan AII. (22 hrs)
PHYS 201
PHYS 211, PHYS 221, PHYS 212, PHYS 222 or PHYS 141, PHYS 142
PHYS 213
ASTR 204
ASTR 224
Plus one course from ASTR 403, ASTR 404, ASTR 405, ASTR 407.
Plan BII. (15 hrs)
PHYS 201
PHYS 211, PHYS 221, PHYS 212, PHYS 222 or PHYS 141, PHYS 142
PHYS 213
Plan BII. (15 hrs)
PHYS 201
PHYS 211, PHYS 221, PHYS 212, PHYS 222 or PHYS 141, PHYS 142
ASTR 204
ASTR 224

Pass/No Pass. Students majoring in physics may not take any course from the list of core courses or from the list of track courses for Pass/No Pass credit.

Students who are getting a minor in physics may not take any courses listed as requirements for the Plan A or Plan B minors for Pass/No Pass credit.

Justification
Updating bulletin section. Note small changes to the major requirements and the streamlining of the minor to a single Plan A and single Plan B. These changes have been approved by the department faculty. In detail: 1. Kenneth Bloom is added as the Chief Adviser. 2. Changes in department personnel are indicated. 3. The College of Engineering no longer offers an interdisciplinary bachelor of science degree in engineering physics, so this sentence is removed. 4. Changes to the Materials Physics track. CHEM 116 (Quantitative Chemistry Lab -- 2 hr) is no longer offered, so we replace this with CHEM 221 (Elementary Quantitative Analysis -- 4 hr). This increases the hours in this track from 18 to 20 hours, as indicated. We also add PHYS 343 and PHYS 441 to the list of elective courses in this track, since these two courses are ACE 10 certified and we want to lead the students in this track to take one of these ACE 10 courses. 5. Changes to the Computational Physics track. For the same reason as in Item 4, we add PHYS 343 and PHYS 441 to the list of elective courses in this track, since these two courses are ACE 10 certified and we want to lead the students in this track to take one of these ACE 10 courses. 6. The streamlining of the minor has been discussed with Debbie Minter, and is now approved by the department faculty. We believe we are the only department which has had two Plan A and two Plan B minors on the books. The idea historically is that one of the Plan A and one of the Plan B minors would have an astronomy focus. In the new single Plan A and single Plan B minors, a student can choose to take some astronomy courses according to the options listed.

Additional Information
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