

MINUTES OF THE MEETING
OF THE ACADEMIC POLICIES AND PROCEDURES COMMITTEE
April 30, 2014

The AP&P Committee met on Wednesday, April 30, 2014 at 3:00 p.m. in the William C. Strickland Conference Room of I.G. Greer Hall.

Committee members present: Mr. Kern Maass (Chair), Dr. Bill Bauldry, Dr. Jon Beebe, Dr. Dinesh Davé, Dr. Lisa Curtin Grizzard, Dr. Kim Hall, Dr. Ellie Hoffman, Dr. Joe Klein, Dr. Pamela Lundin, Mr. Edgar Peck, Dr. Ben Powell, Mrs. Betsy Williams, Mr. Thurman Clark, Mr. Chris Carpenter

Committee members excused: Dr. Chris Yang

Committee members unexcused: Ms. Katherine Glassman, Mr. Nick Smith

At 3:04 p.m., Kern Maass noted that we have a quorum and he called the meeting to order.

MINUTES

February 5, 2014

VOTE 1 – By voice vote motion passed.

April 2, 2014

VOTE 2 – By voice vote motion passed.

ANNOUNCEMENTS

“For Information Only” memo/list of items approved by the General Education Council on April 25, 2014.

(Effective: Fall 2014)

GEN ED: Historical Studies Designation

Add: RM 2140. Natural Resources: Becoming an Informed Citizen

GEN ED: Local to Global Perspective (Theme: “Sustainability and Global Change”)

Add: FER 1000. Principles of Fermentation Sciences

RECOGNITION AND APPRECIATION OF SERVICE:

Kern Maass acknowledged and thanked Dr. Karen Caldwell, Dr. Lisa Curtin Grizzard, Dr. Ellie Hoffman, Dr. Joe Klein, Dr. Ben Powell, Mrs. Betsy Williams, Dr. Chris Yang, Mr. Thurman Clark, Mr. Nick Smith, Mr. Chris Carpenter, and Ms. Katherine Glassman for their work and commitment serving on the AP&P committee.

NEW BUSINESS

Order of Presentation:

- Dean's Council
- College of Fine and Applied Arts
- College of Arts and Sciences

Dr. Mike Mayfield presented a proposal from Dean's Council.

The proposal from Dean's Council was approved as follows: (EFFECTIVE: FALL 2015)

DeansCouncil_2013_17 Establish an Institutional Effectiveness Cycle for Appalachian State University. **Policy is attached at the end of the minutes.**

VOTE 3 – By voice vote motion passed.

A proposal from the College of Fine and Applied Arts was considered.

A proposal from the Department of **Art** was approved as follows: (EFFECTIVE: FALL 2015)

FAA_ART_2013_13 Delete the Bachelor of Science in Art Management (523A/50.1002).

A motion was made to table the Art proposal.

VOTE 4 - By voice vote motion passed.

Dr. Dru Henson presented the proposals from the College of Arts and Sciences for the Department of Computer Science, and Department of Mathematical Sciences.

The proposals from the Department of **Computer Science** were approved as follows: (EFFECTIVE: FALL 2015)

CAS_CS_2013_01 Course Addition:
CS 3240. Mobile Device Programming (3)F.Even-numbered years.
Hands-on, experiential exposure to developing applications for modern mobile platforms (for example, Android or iOS). Topics include platform framework, process life cycle, fundamental user interface components and layouts, databases and content providers, services, widgets, testing, and debugging. Modern development tools are used. Students work individually on prepared projects and in small teams to build a custom project. Prerequisite: CS 2440.

CAS_CS_2013_02 Change the prerequisite statement for CS 3100. Junior Seminar to read as follows:
"Prerequisite: CS 2440 or its equivalent, ENG 2001 or its equivalent."

POS affected: 219A

CAS_CS_2013_03 Remove the corequisite statement for CS 3482. Computer Systems II. The prerequisite statement will read as follows:
“Prerequisites: CS 3481 and CS 3460.”

POS affected: 219A

CAS_CS_2013_06 Course Deletion:
CS 3470. Current Computer Use (1-6).On Demand.

POS affected: 219A

CAS_CS_2013_07 Course Addition:
CS 4900. Internship (1-6).On Demand.
Independent, supervised work in computing for an approved agency, business, or organization. May be taken for a maximum of six semester hours credit, but only three of those hours will count toward major requirements. Prerequisite: junior standing and approval of the departmental internship coordinator. Graded on an S/U basis.

CAS_CS_2013_08 Revise the program of study for the Bachelor of Science in Computer Science (219A/11.0701). **The revised program of study is at the end of the minutes.**

CAS_CS_2013_09 Revise the program of study for the undergraduate minor in Computer Science (219/11.0701). **The revised program of study is at the end of the minutes.**

VOTE 5 – By voice vote motion passed.

A motion was made to bring the Art proposal back to table.

VOTE 6 – By voice vote motion passed.

A motion was made to approve the Art proposal to delete the Bachelor of Science in Art Management (523A/50.1002).

VOTE 7 – By voice vote motion passed.

A proposal from the Department of **Mathematical Sciences** was approved as follows: (EFFECTIVE: FALL 2015)

CAS_MAT_2013_19 Delete the Bachelor of Science in Statistics (289A/27.0501).

VOTE 8 – By voice vote motion passed.

Dr. Heather Norris presented proposals from the Walker College of Business for the Department of Economics.

A proposal from the Department of **Economics** was approved as follows: (EFFECTIVE: FALL 2015)

COB_ECO_2013_04 Change the course description, title, and prerequisite statement of ECO 5640. International Economic Policy to read as follows:

ECO 5640. International Macroeconomics (3).On Demand.

This course aims to provide a basic knowledge of how international financial markets work. It is a combination of lectures and discussions covering theory and real-world policies, events, and evidence. The course can be broadly divided into three parts – foreign exchange markets, international financial transactions, and economic policies. The first part focuses on exchange rate behavior, foreign exchange rate markets, and the determinants of the exchange rates. The second part of the course studies international financial transactions in a global macroeconomy. The goal of the last part of the course is to understand how the choices governments make about monetary and fiscal policies, or about exchange rate regime and capital mobility, affect economic outcomes, and why crises occur. Prerequisites: ECO 2040 (Principles of Macroeconomics). [Dual-listed with ECO 4640.]

COB_ECO_2014_01 Change the course description, title, semester offering, and prerequisite statement of ECO 4640. International Economic Policy to read as follows:

ECO 4640. International Macroeconomics (3).F.

This course aims to provide a basic knowledge of how international financial markets work. It is a combination of lectures and discussions covering theory and real-world policies, events, and evidence. The course can be broadly divided into three parts – foreign exchange markets, international financial transactions, and economic policies. The first part focuses on exchange rate behavior, foreign exchange rate markets, and the determinants of the exchange rates. The second part of the course studies international financial transactions in a global macroeconomy. The goal of the last part of the course is to understand how the choices governments make about monetary and fiscal policies, or about exchange rate regime and capital mobility, affect economic outcomes, and why crises occur. Prerequisites: a minimum grade of “C” in any Writing in the Discipline (WID) course and ECO 2040. [Dual-listed with ECO 5640.] Dual-listed courses require senior standing.

VOTE 9- By voice vote motion passed.

OLD BUSINESS

OTHER

ADJOURNMENT

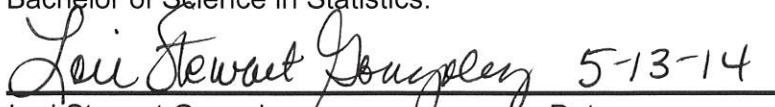
VOTE 10 – By voice vote motion passed.

ACADEMIC POLICIES AND PROCEDURES COMMITTEE
April 30, 2014
 Unofficial Vote Record

Vote Symbols: Y (Yes) N (No) A (Abstain)

Committee Members	1	2	3	4	5	6	7	8	9	10			
Bill Bauldry	A	A	N	Y	Y	Y	Y	Y	Y	Y			
Jon Beebe	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Karen Caldwell	-	-	-	-	-	-	-	-	-	-			
Dinesh Davé	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Lisa Curtin Grizzard	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Kim Hall	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Ellie Hoffman	Y	Y	Y	Y	Y	Y	Y	Y	A	Y			
Joe Klein	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Pamela Lundin	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Kern Maass	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Edgar Peck	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Ben Powell	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Betsy Williams	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Chris Yang	-	-	-	-	-	-	-	-	-	-			
Thurman Clark	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Chris Carpenter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Katherine Glassman	-	-	-	-	-	-	-	-	-	-			
Nick Smith	-	-	-	-	-	-	-	-	-	-			

The recommendations from the April 30, 2014 Academic Policies and Procedures Committee meeting are approved. Upon request of the Art Department and Mathematical Sciences Department, the Provost approved the effective date Fall 2014 for the deletion of the Bachelor of Science in Art Management and the Bachelor of Science in Statistics.


 Lori Stewart Gonzalez Date
 Provost and Executive Vice Chancellor

Institutional Effectiveness Cycle

I. Definition of the Institutional Effectiveness Cycle

The “Institutional Effectiveness Cycle” (IE Cycle) at Appalachian State University is the comprehensive process that integrates strategic planning, assessment, periodic unit comprehensive review, and annual reporting. It is the institutional tool that allows the University to marshal its resources most effectively in support of its mission and to document success in fulfilling its mission.

II. Responsibilities

- A. The Board of Trustees is responsible for approving the University Strategic Plan.
- B. The Chancellor is responsible for initiating development of the University Strategic Plan. The Chancellor is accountable to the Board for documenting institutional effectiveness.
- C. The Provost and Executive Vice Chancellor, vice chancellors, and others reporting directly to the Chancellor have general delegated responsibility for the Cycle at all levels of their respective educational and administrative units.
- D. The deans, vice chancellors, associate vice chancellors, and vice provosts are responsible for implementing policies and procedures of the Cycle in their respective educational and administrative units.
- E. The Institutional Effectiveness (IE) group within the Office of Institutional Research, Assessment and Planning (IRAP) is responsible for managing and providing support for the institutional effectiveness cycle.

Part 1. STRATEGIC PLANNING

I. Purpose

The purpose of strategic planning is to identify and prioritize the actions Appalachian and its units can take to help it best accomplish the University’s goals and fulfill its mission. The University’s fiscal plans and resource allocations shall be aligned with the Strategic Plan.

II. Review of the University Strategic Plan and Mission Statement

- A. The University Strategic Plan and the strategic plans of its units are dynamic documents and shall be revised periodically to calibrate the course of the University and its units toward the achievement of the University’s mission and vision.
- B. The mission statement of the University shall be reviewed in concert with any revisions of the Strategic Plan to ensure that changes in the mission of the University are reflected in the strategic plan. Changes in the University’s mission might be mandated by the North Carolina General Assembly or may be developed within the University in reaction to recognized needs. The mission statement shall be reviewed at least every five years.

III. Core Components

The University Strategic Plan and the strategic plans of the units within the University shall include the following core components:

- A. mission statement;
- B. goals or objectives;
- C. strategies (units only); and,
- D. performance indicators or measures of progress.

IV. Procedures

- A. Chancellor shall initiate the strategic planning process by appointing and charging a committee to develop an updated Strategic Plan. The Chancellor may delegate responsibility for the strategic planning process to the Provost and Executive Vice Chancellor.
- B. The Chancellor shall determine the timeframe to be represented by the Strategic Plan.
- C. The strategic planning process shall begin with an analysis that includes consideration of university task force reports, long-term financial plans, and other relevant documents and studies.
- D. The University Planning and Priorities Council shall inform the University community throughout the planning process and shall seek input and feedback from the University community prior to finalizing the Strategic Plan.
- E. Following the completion of the Strategic Plan, the committee shall make a formal presentation of the plan to the University leadership.
- F. Once the Strategic Plan is accepted, the Chancellor or designee shall present the Strategic Plan to the Board of Trustees for approval.

- G. The implementation of the Strategic Plan shall include the following:
1. the assignment of responsibilities for goals and objectives of the Plan;
 2. the reevaluation by units within the University of their own strategic plans to ensure alignment with the University Strategic Plan (see Part 4. Annual Reporting Process);
 3. resource planning; and,
 4. reports of progress toward goals on a periodic basis (see Part 4. Annual Reporting Process).

Part 2. ASSESSMENT

I. Introduction

Assessment at Appalachian refers to the annual process of critical self-examination with the aim of program improvement. The assessment process involves gathering evidence about a selected outcome, making meaning of the gathered evidence, determining if results are satisfactory, implementing any necessary action plans, and reassessing an outcome to determine if changes were effective.

II. Student Learning Outcomes Assessment

For academic programs, assessment involves determining if established student learning outcomes are being met and making appropriate programmatic changes to improve student learning.

A. Definitions

1. “Academic program” means any undergraduate, graduate, or certificate program that has been assigned a unique Classification of Instructional Programs (CIP) code. CIP codes for Appalachian’s programs can be found in the Academic Program Inventory (API) on the Registrar’s website. For the purposes of assessment, each program level (undergraduate, graduate and/or certificate) is considered its own academic program and may have their own set of student learning outcomes.
2. “Student learning outcome” means a concise description of what students will be able to do as a result of participating in a program.
3. “University Academic Assessment Council” means a group charged with communicating and improving assessment efforts on campus with representatives from every college.

B. Annual Assessment Report

Academic programs decide which of their learning outcomes they wish to assess each year, collect and analyze results for those outcomes, and establish action plans for any outcomes not meeting established criteria. Ideally, academic programs would measure every learning outcome at least once in the period between each comprehensive review. The University Academic Assessment Council (UAAC) is responsible for maintaining an assessment calendar for academic programs. Reporting on annual assessment activity will be done through an online reporting tool maintained by IRAP.

C. Review of Goals and Outcomes

Academic programs should review their goals and learning outcomes on an annual basis. The Office of Institutional Research, Assessment and Planning updates the published learning outcomes for academic programs each fall as required by UNC-General Administration. A thorough examination of a program’s mission statement, goals, and outcomes should take place as part of the periodic comprehensive review process (see Part 3).

III. Non-Student Learning Outcomes Assessment

For educational support or administrative units, assessment involves determining if outcomes established as a result of the strategic planning process have been met and making appropriate changes to improve operations.

Part 3. PERIODIC COMPREHENSIVE REVIEWS

I. Introduction.

The University and its units shall demonstrate an explicit use of periodic comprehensive reviews to facilitate resource allocation and budgeting decisions in support of their strategic plans and to ensure quality enhancement. Along with annual assessment efforts, comprehensive reviews of educational and administrative units is a primary vehicle for documentation of institutional effectiveness. The purpose of a comprehensive review is to improve the quality and effectiveness of teaching and learning, research, public service, and operations. It does so by systematically examining missions, goals, objectives, resources, activities, processes, and outcomes of programs and services.

A. Definitions

1. "Unit" means all organizational entities that provide educational and administrative programs or services; includes colleges, departments, schools, programs, centers and institutes (degree and non-degree granting), and program and service centers. For academic departments, the department will be the organizing entity for the review but information at the program level should be reported where appropriate.
2. "Unit Head" means individuals who initiate the comprehensive review, receive recommendations resulting from self-study and external review committees, and negotiate the implementation plan with their supervisor; includes college deans, department chairpersons, directors, and other administrators, as appropriate.
3. "Comprehensive Review" means an ongoing process through which units evaluate and monitor the effectiveness of programs and services to facilitate decision-making and quality enhancement.

B. Responsibilities

1. The Chancellor shall establish university-wide expectations for conducting comprehensive reviews and using assessment results in planning and budgeting decisions to facilitate continuous quality enhancement. The Chancellor may delegate the comprehensive review process to the Provost and Executive Vice Chancellor.
2. The Chancellor, Provost and Executive Vice Chancellor and vice chancellors shall facilitate comprehensive reviews to ensure linkages are made between assessment results and ongoing planning and budgeting decisions.
3. The deans, vice chancellors, associate vice chancellors, vice provosts, department chairpersons, directors, and other administrators shall carry out comprehensive reviews for all educational and administrative units within their areas of responsibility to ensure linkages are made between assessment results and ongoing planning and budgeting decisions.
4. The IE group shall:
 - (a) consult with unit heads to maintain a program review schedule;
 - (b) initiate the annual comprehensive review process;
 - (c) ensure availability of institutional data necessary to conduct effective comprehensive reviews;
 - (d) make available annual training for unit heads and external review committee members;
 - (e) submit an annual report describing the status of comprehensive reviews and annual progress reports to the Chancellor, Provost and Executive Vice Chancellor and vice chancellors;
 - (f) ensures timely access to accurate, consistent data for the review process;
 - (g) maintain and annually evaluate an assessment function that assists units in developing valid and reliable assessment methods; and
 - (h) serve as a central repository for comprehensive review results and annual progress reports.

II. Comprehensive Review Components

The program review process has four components:

A. Unit self-study

The unit shall first prepare a self-study report that covers the time since the last review. The report will include introductory documents (mission and history); information regarding the quality of the program; faculty/staff characteristics; resources (facilities/equipment); information gathered from stakeholders (students, alumni, employers, graduate schools, community partners); description of major findings; and future of the program. Self-study guidelines will be provided for each unit as approved by their Vice Chancellor. However, these general guidelines will be intended to be a starting point for a self-study. Units will be encouraged to structure the comprehensive review process to best meet their needs.

B. External Review

This component provides an external perspective regarding the quality and effectiveness of the unit's programs, services, resources, processes, and operations. Its purpose is to assure an objective, unbiased assessment of the unit. The external review must consist of reviewers from outside of the department and may include reviewers from off-campus. An external review committee shall:

1. examine the self-study report;
2. meet with students and other people on-campus with a vested interest in the quality of the program to gather additional information;
3. assess the validity of the conclusions reached in the self-study;
4. identify additional strengths and recommendations for quality enhancement; and,
5. prepare a final report.

C. Implementation Plan

The unit shall use results and recommendations resulting from the self-study and the external review to develop an implementation plan, in the form of a set of operational goals and outcomes, that sets the agenda for change and quality enhancement over the next cycle. The implementation plan is finalized by deliberations among unit faculty and staff under the leadership of the unit head. Approval of the implementation plan by the unit head's supervisor signals an acknowledgement that unit needs will be given due consideration in future resource allocation decisions. It is the responsibility of the unit, however, to use the implementation plan as documentation of future plans and resource needs during appropriate times in the budgeting process.

D. Annual Progress Reports on Comprehensive Review Implementation Plan

This component strengthens the link between comprehensive review and subsequent planning and assessment activities. As part of the annual reporting process (see Part 4), each unit shall update their progress toward achieving their implementation plan.

III. Comprehensive Review Procedures (to be developed further)

A. Schedule

A formal, structured program review is scheduled at least once every 5-7 years. The process for scheduling program reviews shall include:

1. Flexibility for unit heads, with input from unit faculty and staff employees, to negotiate with the Chancellor, Provost and Executive Vice Chancellor, or appropriate executive vice Chancellor at which level in the organizational structure a meaningful, effective, and efficient comprehensive review should be conducted.
2. Notification by the IE group that the comprehensive review is about to begin. The notification shall occur approximately one year prior to appointment of the external review committee, signaling initial development of the self-study report.
3. Opportunity to request a delay in the regularly scheduled time, not to exceed two years. The change may be requested by a majority of the faculty members of an educational unit, a majority of staff employees in an administrative unit, or an appropriate administrator. Such requests shall be in writing, include a rationale, and be approved by the Chancellor, Provost and Executive Vice Chancellor, or vice chancellor.
4. Opportunity for an off-schedule review, which may be initiated by a majority of faculty members in an educational unit, a majority of staff employees in an administrative unit, or an appropriate administrator. If the administrator to whom the unit reports disapproves of a unit request for an off-schedule review, the administrator shall provide a written explanation.

B. Accreditation Review Substitutions

Reports from external accrediting agencies may be substituted for the comprehensive review, if approved by the Chancellor, Provost and Executive Vice Chancellor or appropriate vice chancellor, and the IE group has certified that appropriate critical conditions are met (external review, learning outcome assessment, etc.). Supplemental documentation may be required for essential areas not covered in the accreditation review.

C. Preparation of the Self-Study

The unit head shall ensure broad-based involvement in the development and review of the self-study, the identification of strengths, and recommendations for quality enhancement. Upon completion, a copy of the self-study shall be forwarded to the appropriate administrator.

D. Appointment of the External Review Committee

After consultation with the unit head, the administrator to whom the unit head reports shall appoint and charge an ad hoc External Review Committee. The administrator also designates an experienced External Review Committee Chair. Guidelines will be developed on the ideal composition of the external review committees and all those who should be consulted regarding the nominations and appointments to the committees.

E. Distribution and Use of External Review Findings

Upon completion of the external review committee's investigation, the review committee should meet with the unit and its leadership to discuss preliminary findings, after which the review committee shall complete a written report and forward it to the next level of administration. Upon receipt of the external review committee report, the administrator to whom the unit head reports shall:

1. review the report for factual errors and other sensitive information;
2. eliminate material clearly invasive of personal privacy and which may be libelous;
3. meet with the unit head to discuss the review findings and all recommendations;
4. make the report available to faculty, staff employees, and students and widely communicate information about access to the report among these groups;
5. work cooperatively with the unit head and unit members to address issues and recommendations;
6. approve an implementation plan developed by the unit; and,
7. forward the implementation plan to the appropriate administrator(s) for consideration in budgetary decision-making.

Part 4. ANNUAL REPORTING

I. Introduction

Annual reporting involves a process where units report on their progress, achievements, and challenges over the past year. The annual reporting process will consist of yearly updates on a unit's comprehensive review implementation and faculty/staff activities.

A. Definitions

1. "Unit" means all organizational entities that provide educational and administrative programs or services; includes colleges, departments, schools, programs, centers and institutes (degree and non-degree granting), and program and service centers. For academic departments, the department will be the organizing entity for annual reporting but information at the program level should be reported where appropriate.
2. "Operational outcome" means specific changes that a program wants to occur as a result of its efforts.

II. Reports

Each unit will be expected to develop a strategic plan that reflects their efforts to support the strategic plan of their college or division. This plan will include operational goals and outcomes (as opposed to student learning goals and outcomes developed by academic programs), measurement methods and success criteria. This plan will be maintained in an online reporting tool. Units will be required to link each of their outcomes to any appropriate strategic goals of their college or division.

One month before the conclusion of each fiscal year, units will be expected to update the online reporting tool with information regarding their progress in achieving their strategic plan. By this time, as well, it will be assumed that each individual in a unit will have updated their activity profile to reflect their accomplishments for the year. Unit heads will not need to write a comprehensive annual report to submit to their college dean or division head. Rather, when needed, these reports can be generated centrally in the college or division office using the report function in the online reporting tool. The only report that will be needed from a unit will be a one-page summary highlighting the top five successes for the previous year and the top five challenges for the coming year. The entire annual report should be completed by the end of the fiscal year.

III. Key Points

- A. This unit strategic planning and reporting process is separate from that used to report progress on the accomplishment of academic program-level student learning outcomes. Assessment of student learning focuses exclusively on students.
- B. Initially, a unit's strategic goals and outcomes will be developed through a process of discussion within the unit and the college or division. The annual reports related to this initial set of strategic goals and outcomes will be a component of a unit's self-study report generated during the Unit Comprehensive Review process. As a result of that review, new and/or modified strategic goals and outcomes will likely be developed. These new goals and outcomes will be the basis for annual reporting until the unit undergoes its next comprehensive review.
- C. Though the term annual reporting is used here, units will not be required to actually compose any reports. Standardized reports will be created using information taken from the online reporting tools. A unit's responsibility in the reporting process is to ensure that the information in the online reporting tools is accurate and up-to-date. Consequently, it is incumbent upon units to make sure that the goals and outcomes within the online reporting tools reflect the most salient activities of the unit that support the strategic directions set forth by the institution. While online reporting tools will provide the basis of the annual reporting process, units may choose to submit a brief (maximum 3 pages) supporting or explanatory document to their division head as part of their annual report.

Bachelor of Science (BS)
Degree Code 219A

2015-16 PROPOSED

Program of Study for Computer Science Majors

- I. GENERAL EDUCATION CURRICULUM..... 44**
The science taken in AREA II-D fulfills part or all of the Science Inquiry Perspective. MAT 1110 fulfills the Quantitative Literacy requirement.
- II. MAJOR REQUIREMENTS (not including up to 14 s.h. counted in Area I, above) 65**
2.0 major GPA is required for graduation. Major GPA calculation will include all courses taken in the major department, plus any other courses under II. Minimum of 18 semester hours of courses taken to fulfill major requirements must be courses offered by Appalachian.
- A. Computer Science (39 hours):**
- C S 1440 _____ (4) Computer Science I (Pre: MAT 1020/1025 w/minimum grade C-)
 C S 2440 _____ (4) Computer Science II (Pre: CS 1440 or 1445 w/minimum grade C; Co: 1100)
 C S 2450 _____ (3) Introduction to Computer Systems (Pre: CS 2440 w/min grade of C)
 C S 2490 _____ (3) Introduction to Theoretical Computer Science (Pre: CS 2440 w/min grade of C)
 C S 3100 _____ (2) Junior Seminar [WID] (Pre: CS 2440; ENG 2001)
 C S 3430 _____ (3) Database (Pre: CS 2440 w/ min grade of C)
 C S 3460 _____ (3) Data Structures (Pre: CS 2440 w/min grade of C)
 C S 3481 _____ (3) Computer Systems I (Pre: CS 2450, 2490; Co: 3460)
 C S 3482 _____ (3) Computer Systems II (Pre: CS 3481, 3460; ~~Co: 3490~~)
 C S 3490 _____ (3) Programming Languages (Pre: CS 2490, 3460)
 C S 3667 _____ (3) Software Engineering (Pre: CS 2440 w/min grade of C)
 C S 4100 _____ (2) Senior Seminar (Pre: Sr. standing; CS 3100)
- Choose one Capstone: (Must complete 3 hours minimum)**
- C S 4800 _____ (3) Capstone Project [CAP] (Pre: Sr. standing; CS 3667)
 CS 4510 _____ (1-3) Senior Honors Thesis [CAP] (Pre: 6 sh CS honors courses at 2000 or above w/min grade "B")
- B. Mathematics (18 hours):**
- C S 1100 _____ (3) Discrete Mathematics (Pre: MAT 1020 or 1025 w/minimum grade C-)
 MAT 1110 _____ (4) Calculus with Analytic Geometry I (Pre: MAT 1025 w/min grade C-)
 MAT 1120 _____ (4) Calculus with Analytic Geometry II (Pre: MAT 1110 w/min grade C-)
 MAT 2240 _____ (3) Introduction to Linear Algebra (Pre: MAT 1120)
 STT 3850 _____ (4) Statistical Data Analysis I (Pre: MAT 1110)
- C. Computer Science electives (Select 9 hours)** No more than three hours of CS ~~3470~~ 4900 may be included in the nine hours. Some graduate level classes may be chosen as electives with permission of the graduate school and the CS department.
- ~~C S 3240 _____ (3) Mobile Device Programming (Pre: CS 2440)~~
 C S 3440 _____ (3) Client-Side Web Programming (Pre: CS 2440 w/min C) C S 4450 _____ (3) Data Comm & Netwking (Pre: CS 3481)
 C S 3463 _____ (3) Simulation (Pre: CS 3460; STT 2810 or 4250) C S 4465 _____ (3) Comp Graphics (Pre: CS 3460; MAT 2240)
~~C S 3470 _____ (1-6) Current Computer Use~~ C S 4520 _____ (4) Operating Systems (Pre: CS 3482)
 C S 3500 _____ (1-3) Independent Study in Computer Science C S 4550 _____ (3) Theoretical Comp Sci (Pre: CS 2490)
 C S 3530-3549 _____ (1-4) Selected Topics courses C S 4570 _____ (3) Human Comp Interfaces
 C S 3750 _____ (3) Appld Neural Ntwks (Pre: CS 1440 w/min C; MAT 2240) C S 4620 _____ (4) Real-time Systems (Pre: CS 3482)
 C S 3760 _____ (3) Sys Admin & Security (Pre: CS 3460 w/min grade C) C S 4740 _____ (3) Digital Image Proc (Pre: CS 1440 w/min C; MAT 2240)
 C S 3770 _____ (3) Computational Crypt (Pre: CS 3460) C S 4900 _____ (1-6) Internship (Pre: Departmental approval)
 C S 4435 _____ (3) Server-side Web Programming (Pre: CS 3430, 3440) MAT 4310 _____ (3) Numerical Methods (Pre: MAT 2310)
 C S 4440 _____ (3) Artificial Intelligence (Pre: CS 3460) MAT 4990 _____ (3) Numerical Linear Algebra (Pre: MAT 4310)
- D. Science Requirement: Complete a minimum of 13 semester hours from one of the following options:**
- | Option A | Option B |
|--|---|
| PHY 1150 _____ (5) Analytical Physics I (Co: MAT 1110) | PHY 1150 _____ (5) Analytical Physics I (Co: Mat 1110) |
| PHY 1151 _____ (5) Analytical Physics II (Co: MAT 1120) | |
| AND one of the following 8 s.h. sequences: | |
| AST 1001 _____ (4) Intro Astronomy I-Solar Systems | AST 1001 _____ (4) Intro Astronomy I-Solar Systems |
| AST 1002 _____ (4) Intro Astronomy II-Stars & Galaxies (Pre: AST 1001) | AST 1002 _____ (4) Intro Astronomy II-Stars & Galaxies (Pre: AST 1001) |
| BIO 1801 _____ (4) Biological Concepts I (Co: CHE 1101) | CHE 1101/1110 _____ (4) Introductory Chemistry I & Lab |
| CHE 1101/CHE 1110 _____ (4) Intro Chem I & Lab | CHE 1102/1120 _____ (4) Introductory Chemistry II & Lab (Pre: CHE 1101/1110) |
| GLY 1101 _____ (4) Intro to Physical Geology | BIO 1801 _____ (4) Biological Concepts I (Co: CHE 1101) |
| | BIO 1802 _____ (4) Biological Concepts II (Pre: BIO 1801) |
| | GLY 1101 _____ (4) Introduction to Physical Geology |
| | GLY 1102 _____ (4) Intro. to Hist Gly OR GLY 1103 _____ (4) Env Change, Haz, & Res |
- III. MINOR (optional)**
- IV. ELECTIVES (taken to total minimum required for the degree, normally 122 hours)..... 13**
2 semester hours of free electives must be outside the major discipline. 122

**~~2013-2014~~ 2015-16 Proposed
Minor Program of Study**

Computer Science Minor

Required hours: 12 hours

Minor Code 219

A minor in computer science consists of a minimum of 12 semester hours in computer science at the 2000 level and above, excluding ~~CS 3470~~ CS 4900 and CS 3520.

Courses	Grade	Hours
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____