

General Education Core Curriculum Review Committee Report

June 2002

Committee Members:

Dr. Robert Davis (Sociology), Co-Chair
Dr. Sanjiv Sarin (Engineering), Co-Chair
Dr. Sandra Alexander (English)
Dr. Jacqueline Blackmore (History)
Dr. Shea Burns (Mathematics)
Dr. Nita Dewberry (Foreign Languages)
Dr. Doretha Foushee (Biology)
Dr. Perry Howard (Agriculture and Environmental Sciences)
Dr. Cynthia Gilliapie-Johnson (Technology)
Dr. Abede Kebede (Physics)
Dr. John Kelly (Electrical and Computer Engineering)
Dr. Linda McIntosh (Nursing)
Dr. Tova Rubin (Education)
Dr. Scott Simkins (Business and Economics)
Dr. Clifford Watkins (Music)

General Education Review

In the Winter of 2002, the Provost established a 14-member, university-wide General Education Review Committee to conduct a review of general education at North Carolina Agricultural and Technical State University. The task of the Committee has been:

- Assessment of the effectiveness and relevance of the present General Education Core Curriculum in the contexts of the new SACS guidelines, the preparation for majors across the campus, and the support of the University's FUTURES initiative,
- Examination of the best-in-field programs at institutions of higher education that we admire as well as consideration of the current literature on core curricula in general, and
- Recommendations for strategies, structures, directions, and the like that are consistent with the FUTURES initiative, the new SACS guidelines, and the University's preeminence in higher education in the twenty-first century.

Assessment of Current Program

The committee met formally ten times during the spring of 2002. Subcommittees were formed to address each of the committee's charges. Initial meetings of the committee focused on review of SACS guidelines, an external reviewer's report, and the College of Arts & Sciences report on general education. Later meetings were focused on analysis and discussion of results of the committees' data collection efforts. To gather feedback from faculty members on their level of satisfaction with the current general education core curriculum, a survey was conducted with a 20 percent return. The results showed that most faculty who responded were satisfied overall that the current general education core curriculum meets the need of their academic departments. The results also showed definite patterns of what faculty members think is wrong with the current system. There is support for increasing the required credit hours for oral communication, writing, and mathematics courses. There is consensus that there is limited emphasis on global and interdisciplinary programs, and a lack of consistency in the format and delivery of instruction. The growing use of adjunct instructors to deliver the general education core curriculum is also identified as a weakness. A detailed summary of survey results is included in **attachment 1**.

A transcript audit of approximately 80 seniors representing each school/college, revealed that for the most part, students are engaging and completing the University's general education core curriculum within their first two years of study, as expected by the University. However, the audit revealed a number of students who transferred a substantial number of credit hours but did not meet the University's general education core requirement. Focus group discussions with a small convenience sample of graduating seniors, revealed a high level of satisfaction with their communication and critical thinking skills. The students rated satisfaction with their analytical skills lower,

citing uneasiness with mathematics and quantitative reasoning. There was also concern expressed about the absence of exposure to writing styles unique to their major in the English courses currently required.

Review of Peer Institutions

A review of the general education requirements of the fifteen universities on NCA&TSU peer institution list, in addition to general education programs at five universities in close proximity, or because they share similar characteristics with NCA&TSU, was conducted. The focus was on the overall purpose of the core, the overall number of credit hours included in the general education core curriculum, the distribution of credits across functional/thematic areas, and unique features of the programs. A detailed summary of the results of the review of peer institutions' general education requirements is included in **attachment 2**.

Most of the universities require 35-45 semester credit hours of general education courses as part of all degree programs, although in some cases the number of credit hours is as high as 50-60 hours. Courses within the general education core typically are grouped within 5-10 functional/thematic groups, with some universities in recent years moving toward a more flexible "cluster" arrangement developed around learning outcomes. Most of the general education courses are concentrated in the freshmen and sophomore years, although an increasing number of universities also require a sequence of "depth" courses within the major related to the general education core goals and objectives (e.g. writing intensive courses or courses emphasizing quantitative/analytical reasoning).

A few of the universities reviewed are currently undergoing review/revision of their general education programs or have recently completed a revision of their general education program. These include UNC-Charlotte, Oakland University, James Madison University, UNC-Greensboro and UNC-Chapel Hill.

Observations and Lessons Learned

A number of observations are relevant for NCA & T's current general education review/revision process. First, with respect to the **content** of the general education programs:

- Most programs include 32-42 credit hours of coursework as part of the general education core curriculum.
- There is a continued emphasis on communication, scientific, and quantitative reasoning skills. In some cases, scientific reasoning courses may replace traditional lab-based science courses.
- The general education program often includes upper-division "within the major" requirements, often in the form of writing-intensive courses.
- The scope of the general education curriculum is expanding to include courses in diversity, global issues, ethics, values, and technology.

- There is greater emphasis on the goals and objectives of the general education core curriculum, with measurable desired outcomes often listed.
- Assessment of learning outcomes plays a bigger role in the ongoing development of the general education curriculum.
- There is a greater emphasis on creating cross-linkages across functional areas, sometimes through the use of the interdisciplinary clusters, freshmen colloquia, or non-departmental “gen-ed” designated courses.
- There is an attempt to simplify the structure of the general education program to make it easier to understand for students and advisors.

Second, with respect to the **process** of general education curriculum review, a number of observations are also made that are relevant for our current undertaking. Specifically, the general education review/revision process

- Begins with an assessment and review of the current general education requirements, but then is sent back to the faculty for further discussion, study, and recommendations.
- Should be viewed as a multi-year (2-4 years) process, with a recommendation for specific revisions coming only after an exhaustive review and faculty discussion of desired learning goals and objectives.
- Is an open and public process, with each step of the review/revision clearly laid out in advance, reports of relevant committees continually available on the web, and ongoing dialogue among faculty members encouraged and promoted.
- Includes wide faculty involvement, with multiple committees formed to develop learning goals and objectives, as well as measurable desired outcomes for each of the goals and objectives.
- Is an opportunity for the university community to develop a comprehensive, shared vision for the learning outcomes of students.

For examples of well-defined, open, public, and comprehensive general education review/revision processes, see

University of North Carolina – Charlotte

<http://www.uncc.edu/gened/default.htm>

Status: Review/revision process completed; new general education program begins fall, 2003

University of North Carolina – Chapel Hill

<http://www.unc.edu/curriculumrevision/index.html>

Status: Currently in process

Oakland University

<http://www2.oakland.edu/gened/report/index.cfm>

Status: Currently in process

Recommendations

On the basis of the outcomes reported above and committee discussions, recommendations for revision of the current general education program consistent with the FUTURES initiative and SACS guidelines are presented. The committee recommends that the university move toward a more flexible "**cluster**" arrangement developed around learning outcomes. An External reviewer's report and the results of the peer institution review, supports this recommendation. Continued emphasis is placed on communication, scientific and quantitative reasoning skills. The number of credit hours for the enhancement of writing and oral communication skills is increased from 6 to 9, with a 6/3 split. Similarly, the number of credit hours is increased from 12 to 15 for mathematics/quantitative reasoning and science (minimum 6hrs each). Other clusters include, Humanities and the Fine Arts (6hrs), African/African American Cultural and Historical Awareness (3hrs), World Cultures and Global Studies (6 hrs), and an Interdisciplinary cluster with courses on Ethics and Social Responsibility (3hrs) and Health and Wellness (3hrs). An example of a 45 credit hour **Theme Oriented Cluster** arrangement with goals, objectives, desired outcomes and courses developed by the committee is presented in **Attachment 3**. As a result of the committees' rather extensive discussion concerning the theme oriented clusters and expected competencies for students the following recommendations were agreed upon:

- **At least one writing in the discipline course at the upper level be required for all majors.**
- **Foreign Language proficiency beyond high school competency level (1 or 2 semesters) be required.**
- **An Information Computer Technology competency be required for all majors.**

Other recommendations are as follows:

1. Transfer students

An explicit institutional system must be put in place to accommodate transfer students. The university will be required to honor general education agreements for graduates of community and technical colleges. The problem will be primarily with students who transfer a substantial number of credit hours but who have not completed an AA or similar degree. Also, there needs to be suggested equivalencies for GNED courses, so students who transfer to other institutions can receive appropriate credit.

2. **Program administration and faculty oversight**

A single person must be appointed to administer the General Education Program with the guidance of a faculty oversight committee. The logistics of the program require an administrator whose primary responsibility is general education and who is empowered with an adequate budget. The faculty committee will set policy and monitor the quality and standards of the courses and instruction in the program. A procedure for the ongoing review of all GNED courses must be put in place to ensure that high academic standards are maintained. All of this will have to be integrated into both the administrative structure of the university and into the structure of faculty governance.

3. **Procedure for including courses in the general education core curriculum**

1. The department chair (head of the academic unit) will submit an application for admitting a course in the Gen Ed Program. The application will be needed anytime the course is revised.

The application material will include:

- Application form that indicates which Gen Ed Cluster does the course relates to, acceptance of the Gen Ed objectives, uniformity procedures (see Appendix C, attachment 1)
 - Course outline in the standard format (see Appendix D, attachment 1)
2. The application will be reviewed by the Gen Ed Review Committee. Recommendation of the Gen Ed Review Committee will be forwarded to the Faculty Senate
 3. Final approval of course as meeting the General Ed Core Curriculum will be done in the Faculty Senate.

4. **Procedure for ensuring uniformity of course content and student learning across sections of a general education course.**

All sections of a core offered in the general education core curriculum should have the same

- Course outline/syllabus format and content (a suggested course outline is presented in Appendix D of attachment 1)
- Course learning objectives
- Textbook, other reference material

➤ Grade evaluation procedure

➤ Final examination

5. **Assessment**

The Committee recommends the initial, general standards and procedures for assessing the educational effectiveness of the General Education Program. The program will be assessed on a three-year rotation cycle. Each year, one third of the program will be assessed by the General Education Faculty Committee, with the assistance of other selected faculty members. The assessment will focus on two interrelated aspects of the Program: assessing the academic standards of general education courses and assessing student learning outcomes.

In 2003-04 basic writing skills, mathematical and logical reasoning skills, writing in the discipline courses, and oral communication will be assessed.

In 2004-06 student learning outcomes in the life sciences, physical sciences, and social sciences will be assessed.

In 2006-07 student learning outcomes in the Arts and Humanities, African/African American cultural and historical awareness, global and intercultural connections will be assessed.

In 2006-07 the three-year assessment cycle will begin again.

The assessment of learning outcomes will be based primarily pre-and post-tests. The tests will be open-ended essay questions that focus on the general objectives of the course or group of courses. The instructor of the course will have the option of grading or not grading the post-test as a part of the grade of the course. Emphasis will also be placed upon portfolio assisted assessment of general education. Portfolios are to be designed and implemented by faculty themselves. Portfolios for systematic samples of students will be examined regularly by faculty for alignment between program goals and actual outcomes. Efforts must be taken by faculty to ensure some degree of uniformity among portfolios for greatest usefulness for comparative evaluation. A faculty oversight committee will have responsibility for collaboratively reading and analyzing the portfolios as well as developing written scoring protocols.

The bottom –line is to determine if our students are learning what we intend. Results are to be used for ongoing improvement of student and faculty experiences with general education on our campus.

Attachment 1

General Education Core Curriculum Review Committee Subcommittee 2 Report

Subcommittee members:

Sanjiv Sarin (Chair), Sandra Alexander, Linda McIntosh, Jacqueline Blackmore, Abede Kebede

Tasks assigned:

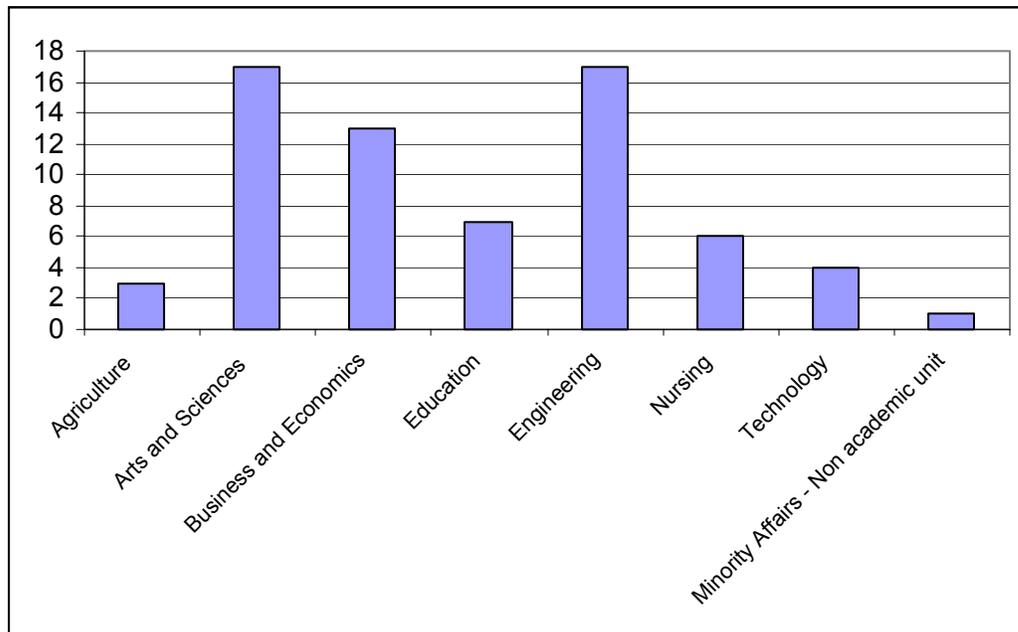
1. Gather feedback from university faculty on their level of satisfaction with the current general education core requirements
2. Recommend a procedure for including courses in the general education core
3. Recommend a procedure for ensuring uniformity of course content and student learning across sections of a general education course

The subcommittee's report on each of these assigned tasks is presented below.

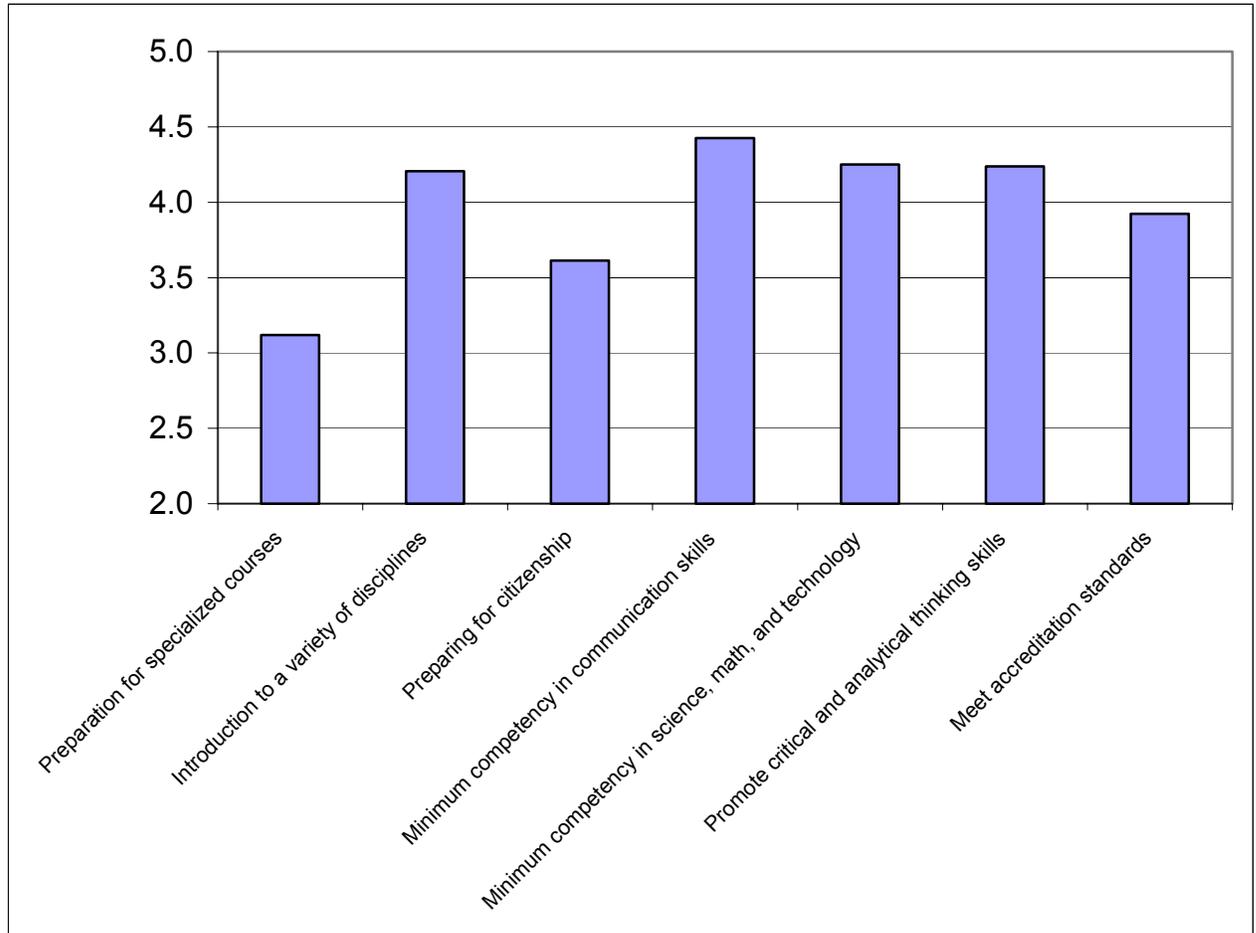
1. Feedback from faculty on current general education core requirements

To gather feedback from university faculty on their degree of satisfaction with the current general education core curriculum, a survey was developed and distributed to all university faculty. The distribution of the survey was handled through e-mail. Feedback was welcomed by e-mail, fax or regular mail. A copy of the survey form is enclosed as Appendix A.

A total of 68 responses were received representing a response rate of approximately 20%. The number of responses from each school/college are shown below.

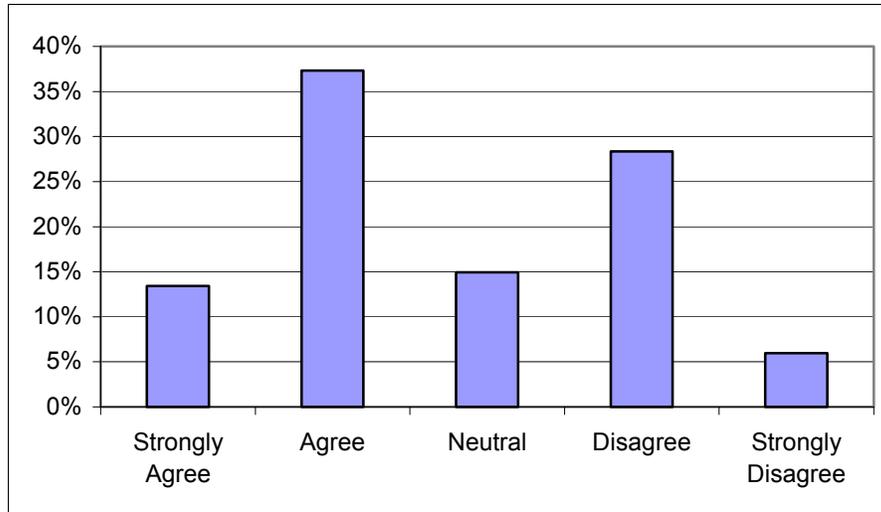


Faculty were asked to provide feedback on the purpose of general education. In particular, they were asked to rate the importance of each purpose using a scale of 1-5, where 1 = unimportant and 5 = most important purpose. A summary of the data collected is shown below.



Most faculty support keeping the total number of required general education core credits at the current value of 32. There appears to be some support for increasing the required credit hours for English Writing and Mathematics courses. However, this is not balanced by a similar demand for reducing credit hours in other areas.

When asked whether they were satisfied overall that the current general education core curriculum meets the needs of their academic department, 50% agree or strongly agree. However, over one-third of the faculty either disagree or strongly disagree.



Faculty were also asked to provide general comments on strengths and weaknesses of the general education program as well as offer suggestions for improvement. Verbatim copies of their responses are provided in Appendix B.

2. Procedure for including courses in the general education core

1. The department chair (head of the academic unit) will submit an application for admitting a course in the Gen Ed Program. The application will be needed anytime the course is revised. The application material will include:
 - Application form that indicates which Gen Ed Cluster does the course relates to, acceptance of the Gen Ed objectives, uniformity procedures (see Appendix C)
 - Course outline in the standard format (see Appendix D)
2. The application will be reviewed by the Gen Ed Review Committee. Recommendation of the Gen Ed Review Committee will be forwarded to the Faculty Senate
3. Final approval of course as meeting the General Ed Core Curriculum will be done in the Faculty Senate

3. Procedure for ensuring uniformity of course content and student learning across sections of a general education course

All sections of a course offered in the general education core should have the same

- Course outline/syllabus format and content (a suggested course outline is presented in Appendix D)
- Course learning objectives
- Teaching methods
- Textbook, other reference materials
- Grade evaluation procedure
- Final examination

APPENDIX A

General Education Review Survey of Faculty - Spring 2002

The university-wide General Education Core Curriculum Review Committee is currently evaluating the content and effectiveness of our 32-hour general education program requirements. Your input in this process is important. Please answer the following survey (remember to answer questions on the back also) and return it to Sanjiv Sarin, College of Engineering 651 McNair Hall, Campus, or you can fax it to 334-7540 or e-mail it to sarin@ncat.edu by April 10, 2002. Your participation is voluntary and anonymous. Thank you.

1. Please indicate your academic department _____

2. In your opinion, what is the purpose of the general education program requirements? For each choice, indicate your agreement by using a scale of 1-5, where 1 = unimportant and 5 = most important purpose:

Purpose of General Education	Rating
(a) Prepare students for specialized courses in their majors	
(b) Provide a broad introduction to a variety of disciplines	
(c) Prepare students for citizenship	
(d) Prepare students for a minimum level of competency in written and oral communication skills	
(e) Prepare students for a minimum level of competency in science, math, and technology	
(f) Promote critical and analytical thinking skills	
(g) Meet requirements of SACS and discipline accreditation standards	
(h) Other (please state)	
(i) Other (please state)	

3. Please select one of three choices given for the following by placing an "X" in one cell for each row:

	(a) Too much, should be decreased	(b) Just right	(c) Not enough, should be increased
The current required number of hours (32) for the Gen Ed program is			
The current required 6 hours of Mathematics is			
The current required 6 hours of English Writing is			
The current required 6 hours of Humanities is			
The current required 6 hours of Social Science is			
The current required 6 hours of Natural Science is			
The current required 2 hours of Physical Education is			

4. I am satisfied that the current Gen Ed core curriculum meets the needs of my department/academic unit:

- (a) Strongly Agree (b) Agree (c) Neutral
- (d) Disagree (e) Strongly Disagree

APPENDIX B

General Education Review Survey of Faculty - Spring 2002 Responses to Question 5

5.a In your view, what are the strengths of the general education program at A&T?

- It is broad
- Students have good variety of courses to choose from for their electives
- Train generalists who have broad-based knowledge
- It broadens the background of the students. Gives a fairly good foundation in the humanities and the social sciences
- The structure is comprehensive and at an appropriate level for all majors
- I think the courses offered are essential to the overall development of Student's potential and A&T is providing it. However the Science and Math base for Technology programs needs more strengthening
- Versatile
- Foundational courses. Introduction to college life. For some students, needs to be more challenging. Statistics should be substituted for one of the math requirements. It should be a general course for all majors (required).
- The general educational program does a reasonably good job of providing a minimal education experience in several areas of human knowledge
- The general educational program does a less-than-satisfactory job of bolstering the math and writing skills of students
- The GE program has strong benefits for those undergraduates that are weak and are ill-prepared for college. Others have their basic skills reinforced and niches in their backgrounds filled
- Mainly, that a variety of courses may be used to satisfy the requirements
- NC A&T provides cross-cultural education by requiring an African-American course as part of the Ge Ed course. May enhance first year broad-based social experience for students A&T does not have a support structure for a General Engineering Program. I anticipate high rate of attrition after the first year---departments are better prepared to mentor and advise students.
- The major strength is the equal division of math, English, humanities, social science, and natural science. I'm also impressed with the wealth of classes in each category that can fulfill these requirements. My experiences at other institutions were that students had little choice.
- It provides a broad, basic background in core curriculum areas such as writing, mathematics and science. The courses are scheduled early in the students' higher education to help provide a strong foundation on which to build their major courses.
- Good all around fundamental education.
- The strengths lie in the fact that without being overly intrusive, the General Studies Core is designed to provide an educational foundation for meeting purposes (a) through (f) as cited above.
- I do not see it
- Multidisciplinary exposure
- Significant choice provided to students
- It is broad in outlay.
- Courses are in a variety of disciplines. The basic courses like math and English reinforce a student's skills
- Its flexibility
- Variety of classes in different areas expose students to all types of people and cultures.
- Requiring students to take African American and Global study allows them to be more knowledgeable and well-rounded upon graduation. Exposes students multicultural issues and open their minds for more critical thinking and analysis of the world in general. English is definitely necessary-many students have difficulty with writing skills.
- It provides a broad overview of the arts and sciences necessary for an education

- Beginning of an overview on L.A. orientation
- It helps prepare students for major courses
- It's a good general knowledge base that supplements the student's major
- It seems to represent a valid core. The expanded options for the Humanities requirement are better than before
- It exposes students to a broad spectrum of experiences and enhances their university education
- If the departments follow the general core their students will get a broad exposure to a variety of disciplines. The core should help the students develop leadership skills, logical analysis, basic math, communication skills, computer competency and cultural literacy
- Students are introduced to a variety of courses in liberal arts
- The general education program provides an opportunity for non-committed students to get exposure to a variety of disciplines and this helps some to decide on a major. Gen ed also broadens the knowledge base and contributes to a more rounded student. Promotes citizenship and communication discipline
- In my opinion, gives students a strong foundation in basic disciplines
- Provide basic academic skills. Provide necessary skills in Math and sciences to support the main area of study
- Diversity of courses available to students
- Broad coverage of several areas
- Allows for access or a stepping off point into an individual point of interest for an individual student, allows for students to help discover their potential in a general way as they find themselves on the way towards their educational and future career goals
- It ensures that students get, to some extent, a liberal arts education, and that are not too narrowly specialized to the exclusion of a broad knowledge background
- Wide variety of course offerings. Broad base
- Generally, provides the student with a well-rounded education base. Students should be prepared for in depth study in any area
- The principal strength of the general education program is that it provides a reasonable balance between (a) the structure needed to ensure that all students receive a solid grounding in liberal . studies, and (b) the flexibility necessary to allow students to personalize their curriculum according to their interests and abilities. In short, I have no complaints with the number of courses required, the categories of study specified, or the range of choices available to students within those categories.

5.b In your view, what are the weaknesses of the general education program at A&T?

- GEEN takes the place of more important engineering electives such as dynamics, engineering graphics, extra mathematics, etc. GEEN should be deleted. Students should start specialized training in the second year of study. The first year should require more science, engineering and math coursework. GEEN courses have students doing multidisciplinary design methods when they don't know one engineering discipline from another. GEEN 1xx should be deleted from the engineering curriculum. Tenure-track and tenured faculty course better use this time on scholarship or advanced engineering coursework enhancement activities.
- The delivery is too superficial
- I wish a technical writing class was available to freshman or sophomore students. I believe the only technical writing class currently offered by the English department requires junior standing. Too many students in engineering do not (cannot?) write well on reports when assigned. I feel that the junior year is a little late to expect engineering students to take a technical writing class when their schedules are full of demanding classes within their respective majors
- It does not address specific needs of our program, particularly with respect to input from our program on course content, standards and student performance

- The Freshman math, science, and English courses are not rigorous enough to prepare students for the College of Engineering. The Freshman English courses do not have enough emphasis on technical writing
- Its importance, use and application in real life are not well underscored
- There seems to be a problem with the students grasping the basic mathematics and chemistry. Need a technical writing course at the 200 level.
- Too prescriptive – does not allow interdisciplinary work. Does not allow departments to select Gen Ed courses to meet the needs of their programs
- Allowing too many substitutions or “D” as a passing grade by specific degree programs, which results in some students end up with much less than the intended well-rounded educational foundation and skills competence
- We need a wider variety of courses that could be used to meet the general education requirements. New interdisciplinary courses should be developed to meet the interests of students and at the same time satisfy the general education requirements
- Students arrive largely unprepared for an engineering program. The general education program does not seem to bring them up to speed, particularly in math
- Science and Math program needs to be fortified; particularly the Math
- Not supported
- The instructors in first year math and English-- most notably English-- are swamped and even with the best of intentions cannot provide students the attention they need in terms of grading work, commenting on work, having conferences with students-- all the things that are vital to learning at that level
- Science and Mathematics
- Lack of consistency in format for courses, delivery of instruction. This should be standardized so that irrespective as the faculty status, students get the required content. I have examined course outlines from various instructors in the same department with a tremendous degree of variability
- There is a general lack of concentration or an in-depth experience for students to be of much benefit. However, our curriculum has the necessary additions to build a greater background in the topics important in our program
- Probably lack of resources to provide effective recitation sessions and individual feedback to students on a continual basis over the semester. I feel for them, but the output is still less than desirable
- There is not enough science in the GE program; especially for engineering undergraduates
- Not enough writing and speech courses required
- Many students come ill-prepared in trigonometry, analytic geometry, and algebra – things they should have learned in high school. GEEN 100 does not allow enough time to learn these skills.
- The freshman design project is a good idea, but only a handful of students benefit from it. Each team has a leader who does most of the work and the majority doesn't contribute
- We need a technical writing course. A&T does not have a support structure for a General Engineering Program. I anticipate high rate of attrition after the first year---departments are better prepared to mentor and advise students
- I don't think we do a good job educating students about the importance of their general education requirements. They don't seem to know why they need to take them. I do my best during advising to talk about “educated citizenship,” but them seem to be on a mission to check off classes to get to their degree. I'd like to find ways to make connections among all their classes: gen ed and major courses. It's important that they not only realize why gen ed is important, but how it relates to other disciplines and their own circles of knowledge
- Too often these critical courses are taught by adjunct faculty, some of whom do not do the very best job. Too often these classes are larger than they should be, for students the get the personal attention that they need
- Does little to address the creative thinking needed in today's competitive market. We do not require, for example, theatre arts courses; moreover, the Arts is a proven catalyst toward improving creativity; especially, because creativity is so needed today in the areas of business,

- technology and engineering. The research is available for those who would dare discover it. Even famous tech schools, like MIT, now promote the arts as a way of improving creativity
- The weakness lies in the fact that certain courses apparently are not meeting the purposes cited- especially "(d) Prepare students for a minimum level of competency in written and oral communication skills." Advanced course presentations, which rely on this purpose being met, are often frustrated when students who have completed the written and oral skills-based course requirements, cannot adequately write or speak in an acceptable manner
 - Critical thinking and communication skills of students are not very well addresses through the core curriculum. These skills are mandatory for the world of work
 - No one holds responsibility in general education program
 - Lack of inter or cross disciplinary communication which promotes reinforcement of faculty goals and maximum likelihood of student development. (No one knows what or why the other is doing)
 - Lack of vigor in many of courses. Our students are not challenged. Many found high school to be more challenging than freshman and sophomore level classes
 - It could have broader course offerings especially in the Natural Science area. There may be need to include courses to let students appreciate the globalized reality of today's world and workplace
 - Doesn't leave students much room to take elective courses
 - The core areas of English and Natural Science
 - Foreign language. First Aid/CPR class for all students
 - The weakness I see is only in the required hours. Because general education is intended to create well rounded and educated citizens of the state, I believe the model we followed at Chapel Hill (two years of General College requirements) provides a much better balance between core courses and the undergraduate major
 - Not enough basic skills are developed well, and more analytical and thinking skills development is needed
 - There is not enough emphasis on what the students need in terms of L.A. for this point n history. Being trained in one area rather than receiving a sound education allowing for growth and development of an individual throughout a lifetime is of prime importance. In this day and age the average adult changes jobs/careers more than five times
 - More instructors are needed for this purpose. Many of the classes are too large. Instructors have difficulty handling so many students. Greater emphasis needs to be placed on writing
 - Courses to choose from are either not available or conflicts in time with other general ed. Courses
 - Some of the courses may not facilitate the best performance for coordinating with the student's major
 - It limits the number of courses students can take in their major areas of study. In other words, course offerings in major areas are restricted because the general education program takes a significant portion of the hours required for graduation. Also class sizes in the general education program are too big for any meaningful teaching and education experience
 - English requirements should be strengthened. There are too many students moving to the sophomore level still deficient in reading and writing. Not enough faculty to meet increased enrollment needs. The athletic coaches teach the majority of general education courses. They do not want to teach. These coaches have a major impact on retention and they are setting a bad example for freshman
 - The core needs to be updated and required of all majors. GIS or spatial and cerographic analysis skills are increasingly important. Knowledge of the globe and our role in modern society needs to be a priority as well
 - In spite of the 6 hr requirement in Eng writing, some students still have a writing deficit. Perhaps students should be required to meet some standardized level of competency as evidenced by a particular score on a standardized test. This should particularly apply to natural sciences. If students are dishonest during regular testing, requiring the students to pass a standardized exam.
 - Gen ed should be emphasized in the first tow years before a students declares a major. This might reduce the number of students, uncertain of interest when they enter, who earn low grades in a number of courses before they are sure of their interest

- Additional Math and writing skills are needed
- Academic standards need to be raised, especially for freshman. Too many students get passing grades without being able to demonstrate subsequent knowledge of basics in Engl and math
- Phys ed not needed. Need to put more remedial or preparatory courses in place for unprepared freshmen
- Should be backed up by some form of advertisement, career counseling, or internment education program
- It limits the number of credits that can be taken in a major
- Inconsistent standards for student performance and inconsistent experiences in courses. Our students cannot write well, do not understand how to take multiple-choice tests; do not demonstrate critical thinking or rigorous academic output. Despite Algebra 1 and 2, cannot do ratio and proportion problems or fractions. Lack strategies for reading. They do not understand paper writing, outlines and development of ideas, use of quotations and citation of references within text
- The principal weakness of the general education program is the apparent variability in the quality of the courses. Two types of evidence lead me to this conclusion. First, when I ask students open-ended questions about how their courses are going, usually in the course of advisement, they report a variety of disturbing practices. Students have repeatedly alleged that certain classes scheduled MWF do not meet on Friday, and that they are told by the instructor to use that time "to work on assignments for the class." Q Another common complaint is that instructors simply fail to show up for a class multiple times during the semester, or cancel class for a week or two without obtaining a substitute. Q This semester, a student reported that an instructor informed a class that they would not meet regularly during recruiting season for football, because those responsibilities take priority. Q Students also report instances in which instructors fail to return graded homework and exams for weeks, despite repeated requests. The result in this case was that the student had only a single quiz as feedback by the drop deadline. To be fair, I also hear regularly about excellent instructors and courses. However, the frequency with which I hear these types of complaints suggests that we have a quality control problem, particularly in some of our introductory level courses. My experiences in class also confirm this problem. I regularly teach students who have passed introductory courses in English and Math, but struggle to write a complete sentence or solve an algebraic equation. While some instructors are quite rigorous, it is apparently possible to earn a B or C from others without achieving any reasonable mastery of the material. These types of failures impact student's success throughout their academic careers, and damage the credibility of academic programs.

5.c. Do you have any general comments or recommendations to further improve the general education program at A&T?

- The problem with our engineering curricula is that they are too general. This is why our senior EIT scores are so low compared with other NC schools. We should cancel most of these general non-technical courses and strengthen our engineering students with fundamental math/science/engineering mechanics, tech writing and oral communication. All COE students should take 2.5-3 years of calculus/advanced math minimum, 1 year of chemistry and 1 year of physics, 1 course of materials science, 1-2 courses of DC and AC circuits, static's and dynamics. COE students should also be required to take 2-4 additional courses in their particular pure math or science field. The credits could be taken from GEEN, humanities, PE, etc. ENGL courses should be kept. Only students who score below 450 Verbal should take ENGL 100 and 101. Most engineering students should start with Tech Writing and Oral Communication coursework to add marketability to their educational experience.
- Place more emphasis on analytic skills
- I'm not sure of the reason why students are required to take physical education courses as part of their general education requirements. I feel that college students are adults, and that their physical

fitness and/or recreation (or lack thereof) should be a choice left to them. I honestly do not see the educational gain from these courses, and feel the credit hours could be used for other “more academic” purposes

- Improve feedback to faculty teaching general courses from other programs. Evaluate student performance and course content in a overall course committee
- Separate math sections for freshman engineering students would be beneficial. Increased technical writing practice in the Freshman English courses would be beneficial
- Revamp or modify GE Math curriculums. Evaluate teaching styles
- Merge humanities and social science into a single cluster. Make technical writing an elective
- Increase emphasis on foreign language skills. Remove Physical Ed as a requirement
- Use additional courses from other areas (in addition to Arts and Sciences) to meet requirements. This would spread the service load and allow other areas to increase their academic productivity
- Increase the math
- I am commenting only for TECHNOLOGY PROGRAM: Content of Math for Technology Students needs to be more of APPLIED nature than abstract. It would be ideal if the teachers entrusted to teach APPLIED MATH for Technology students have strong background in both disciplines
- The English Department in particular and the Math Department as well NEED MORE RESOURCES. The Administration has to increase their faculty budgets so that they can hire enough full-time faculty who can teach small enough classes for they to be able to do what they know and want to do
- Our students do not have basic math and science backgrounds. Therefore, I recommend the Math 110(covers half-term on algebra and second-half on trigonometry) to be divided as algebra and trigonometry each with 2 credit hours. Based on the grades of the placement test, a student should take one, two or all three from the following:
 - _Algebra 2 credit hours
 - _Trigonometry 2 credit hours
 - _College Physics I 3 credit hoursCollege Physics I covers elementary principles of physics. So, students gain fundamental of physics before taking General Physics I. And students with a good background in algebra and trigonometry they are going to have very easy time in calculus courses and beyond
- I offered one suggestion in (a). There seems to be reported a lack of responsibility on the part of faculty to prevent cheating in certain classes. All faculty must be devoted to quality education for students and accept nothing less. That may mean faculty have to assist with monitoring courses (exams esp.) and report unethical behavior and deal with it sharply
- I feel that there should be more flexibility in the gen ed core. For instance, our students would benefit from technical writing rather than from ENGL 101. The interpretation of the English Department is that ENGL 101 is a requirement rather than a suggestion. The Tech Writing Course would be substantially better for our students
- Increase Gen Ed resources, but in return require them to do more open ended writing and calculation work and less multiple-choice type assignments, which only contribute to guessing when administered in class, and to wide-scale plagiarism when administered over the Web
- A more interdisciplinary approach to the GE program would serve the undergraduate population best. Synchronization of science and mathematics course curricula and syllabi will facilitate this approach
- Industry requires a lot of written communication skills. From my experience, about 50% of the students lack these skills. A strong technical writing program is necessary
- Needs an office for GE program with a full time administrator reporting to the Dean
- Needs advisors and councilors in the GE office. Need money for recruitment of students, faculty, and maintenance of GE program. Without the basic supporting infrastructure, scrap it and avoid giving a lip-service program to the students
- Each general education program area, or possible each course, should be coordinated by an excellent teacher who is tenured. This will help to ensure quality across the sections, even when many are taught by adjuncts

- Make Theatre Appreciation, Art Appreciation or Music Appreciation an optional requirement for business, technology and engineering students. Those departments should strongly encourage their students to see plays, galleries or concerts. Sounds crazy, but their students will be better prepared to compete with other talented and creative graduates from other prestigious tech programs
- Survey the General Studies requirements/programs of other institutions that are technologically oriented to determine the structures of their GS programs and model accordingly as applicable to NCA&T. Implement greater quality into the existing General Studies academic requirements
- Decrease class size and pay faculty more as to attract the best trained persons
- University has to come out some methods of checking their teaching effectiveness
- All classes could demand that a student have a dictionary and thesaurus, a stapler, and a style guide. No discipline should allow any student ignore the basic guidelines for college level performance. It would not be difficult for a school or department to identify what those basics are, and insist that all classrooms adhere to them. Why would any professor allow a student not to use the course number and section on his or her papers and assignments? Students must be expected to participate in their educational experiences, and knowing which class you are in is a part of that.
- Raise the minimum expectations in math and English classes.
- Increase course offerings especially in the Natural Science area. Social Science could include Behavioral Science and probably Western/Comparative Culture. Students have to deal with these multi-cultures when they leave College. English may need to include Discourse for students to learn how to articulate their ideas. Probably there may be need to have a Foreign Language in the Core Curriculum.
- Students should have more exposure to developmental reading as well as to computers and technology
- Foreign language should be a requirement with the diverse populations we serve e.g. Spanish, French, etc.. This would help to prepare our students for trips to those countries abroad, as well as the population here at home. Need a writing class for all freshmen geared to research papers
- Faculty in the English Department face steep course loads and overwhelming numbers of students per section. In such a situation, it is difficult to believe that students get the kind of individual assistance many of them need
- Math courses are more appropriate to general education i.e. consumer math finance. Computer courses as part of math courses. Option to take courses within broad areas- any math, English, humanities, etc. Specific courses if needed for major.
- Smaller classes. More faculties are needed to improve the quality of education that a student should receive. Greater emphasis on competence in the basic skills and understanding of individual. Full time, properly qualified faculty is needed.
- In HPER, we are in need of more instructors. We need our best instructors teaching these courses. It is important for students to have a positive experience in freshman classes. Coaches can only teach a couple of courses. Our department needs additional faculty
- I cannot speak to the specific strengths or weakness of the program. However, I am concerned about the number of students that I receive as juniors and seniors that have poor written and oral communication skills (especially, written). I am sure to what degree that can be contributed to the student to the program
- Some sections of general ed. courses must be set aside for freshman only. Registrar's can assign a number such that no one else can get in.
- Make the general education stronger in speaking and writing. For example, give a written essay before the student's may graduate so that if they are proficient in their writing skills
- Allow more students who are qualified to exempt some of the core requirements, eg. Eng 100
- Class sizes should be reduced by hiring additional faculty. Resources like computer facilities and classroom space should be increased to accommodate for the ever increasing number of students enrolled in the program
- There needs to be a general education faculty specifically for physical education courses

- As a means to enhance critical thinking, suggest more courses in English that would include expository writing. Additionally statistics should be a required under grad course. Some of the other HBCU's requires statistics
- Use general ed to prepare students to make choices regarding major
- Include foreign languages in core curriculum
- Stop increasing class sizes for intro surveys. More remedial courses for struggling students (like so many who get F or D in HIST 100 or 101)
- I would like all students at A&T to have to take a writing exam to demonstrate that they can write an essay at the college level competency
- Consistency across course sections. We need the Eng Dept. to send them out knowing how to write, the math department knowing how to solve simple problems
- Reduce humanities and natural science and replace with course that will enhance the analytical, communication, or, math skills
- I believe that faculty and administration need to examine our system for ensuring uniform delivery of these important courses and implement much stronger quality controls.

APPENDIX C

**General Education Review
Suggested Application Form for Admitting a Course in the Gen Ed Program**

**North Carolina A&T State University
General Education Program**
Application for Admitting Course in the Gen Ed Program

Department/Academic Unit

Course number and title

Catalog Description

Course Learning Objectives

Relationship of Course to Gen
Ed Program Objectives

Gen Ed Cluster

Application submitted by:
name, department, address,
phone number, e-mail

Please attach a copy of the course outline for the proposed general education course.

APPENDIX D

General Education Review Suggested Format for General Education Course Outline

North Carolina A&T State University
College of Engineering

Industrial Engineering Department
INEN 335: Stochastic Models in Operations Research
SPRING 1999

Catalog Description:

This course provides an introduction to probabilistic operations research models and solution techniques. Specific topics covered include Poisson process, Markov chains, queuing models and their applications, decision analysis, stochastic inventory, and system reliability. Concepts of random variate generation and Monte Carlo simulation will be introduced. Design projects will involve spreadsheet software and special purpose packages. Credits: 3(3-0).

Prerequisites: INEN 275 (Design of Experiments)

Prerequisites by topic: Probability and Statistics, Spreadsheet usage, linear algebra.

Textbook:

Winston, W.L., Operations Research, Applications and Algorithms, 3rd Ed., Wadsworth Publishing Company, Belmont, CA, 1994.

References:

1. Feldman, R.M. and Valdez-Flores, C., Applied Probability and Stochastic Processes, PWS Publishing Company, Boston, MA, 1996.
2. Ravindran, A., Phillips, D.T. and Solberg, J.J., Operations Research: Principles and Practice, John Wiley and Sons, New York, NY, 1987.
3. Taha, H.A., Operations Research, An Introduction, 5th Ed., Macmillan Publishing Company, New York, NY, 1992.

Course Objectives:

This course introduces various modeling techniques for optimization problems when there exists randomness in the data.

On completion of this course, the student will be able to:

1. Exhibit familiarity with stochastic processes, especially the Poisson process
2. Recognize queueing problems and use appropriate queueing models to analyze and solve such problems
3. Model and solve a variety of inventory control problems with random demand environments
4. Compute the reliability of systems when component reliabilities are given
5. Analyze decision making problems in an uncertain environment
6. Be able to model and solve stochastic inventory control problems using simulation techniques on a computer spreadsheet
7. Demonstrate the ability to work within a team environment with well defined responsibilities for each team member

8. Improve his/her ability to write technical reports

Topics:

Detailed schedule of classes, references to chapter numbers, assignments and their due dates, test dates, etc are provided in a separate document.

- Poisson Processes
- Queueing theory and specific models
- Markov Chains
- Probabilistic Inventory Models
- General concepts of simulation
- Decision Analysis
- Reliability Models

Class Schedule:

The class will meet on Mondays, Wednesdays, and Fridays 11:00 AM to 11:50 AM in room McNair 123.

Relationship of Course to Gen Ed Program Objectives: This course assists in achieving the following objectives of the Gen Ed Program – 1, 3 and 7.

Grade Evaluation:

The weights for each type of evaluation are given below:

Category	Frequency	Weight
Attendance	Each Class	10%
Homework	As assigned	10%
Quizzes	See syllabus for dates	20%
Project	As assigned	10%
Tests (2)	See syllabus for dates	30%
Final Exam	Thursday, May 6, 1999 (8:00 AM - 10:00 AM)	20%

Prepared by:

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Wednesday: 3:00 PM - 5:00 PM
Thursday: 3:00 PM - 5:00 PM
Friday: 2:00 PM - 5:00 PM

Date prepared:

January 6, 1999

Attachment 2

**General Education Core Curriculum Review Committee
Subcommittee on Program Curriculum Model**

**Review of Peer Institutions' General Education Requirements
and General Education Review/Revision Processes**

May 24, 2002

Subcommittee 1 members:

Scott Simkins (Subcommittee Chair), Doretha Foushee, Clifford Watkins, John Kelly,
Cynthia Gillispie-Johnson

1. Peer Institutions

The peer institution list for NC A&T State University as of October 4, 1999, includes the following fifteen universities:

Cleveland State University
Florida A&M University
James Madison University
Oakland University
Old Dominion University
Prairie View A&M University
Tennessee Technological University
The University of Texas at San Antonio
University of Central Florida
University of Massachusetts – Dartmouth
University of Minnesota – Duluth
University of North Carolina – Charlotte
University of South Florida
University of Tennessee – Chattanooga
Virginia Commonwealth University

The subcommittee on Program Curriculum Model reviewed the general education requirements of each of the fifteen universities, focusing on the overall purpose of the core, the number of credit hours included in the general education curriculum, the distribution of credits across functional/thematic areas, and unique features of the programs.

2. Purpose of the Core Curriculum

The stated objectives of the general education curriculum across the fifteen peer institutions include a broad array of purposes and functions:

- To understand the connections between and among disciplines

- To provide a breadth of knowledge across many disciplines
- To provide an introduction to the scientific method and analytical thought
- To build oral and written communication skills
- To examine issues involving values, ethics, and social responsibility
- To appreciate diverse cultures in a global world
- To foster an appreciation of music, literature, and the fine arts
- To understand the historical traditions of western and non-western cultures
- To build social awareness and an informed citizenry
- To introduce students to a variety of ways of thinking
- To provide a foundation for lifelong learning
- To prepare students for pursuing a major in a specific field of study
- To foster an appreciation of ethnicity and cultural values
- To promote intellectual adaptability in a changing world
- To build ethical awareness

In many cases, these specific objectives lead naturally to a set of courses or functional areas that directly promote the stated objectives. In other cases, the objectives of the general education core curriculum are stated more broadly – two examples include the University of NC-Charlotte and James Madison University. For example, UNC – Charlotte notes that their general education program focuses on

...learning the arts appropriate for living the educated, responsible life of a free (liberalis) citizen. It provides all undergraduate students, regardless of their majors, with the foundations of the liberal education they will need to be informed people who have the ability to act thoughtfully in society, the ability to make critical judgments, and the ability to enjoy a life dedicated to learning and the pleasures of intellectual and artistic pursuits.

Similarly, at James Madison University the general education program

...seeks to educate students in ways that have been fundamental to higher education and to thinking people for centuries. The philosophy of the program promotes the cultivation of habits of the mind and heart that are essential to informed citizens in a democracy and world community. The program is committed to helping students develop their ability to reason and make ethical choices; to appreciate beauty and understand the natural and social worlds they live in; to recognize the importance of the past and work towards a better future. By providing a strong foundation of knowledge, skills, and experiences expected of all educated people, the general education program prepares students to become flexible thinkers and life-long learners.

The resulting general education core curricula at these two universities reflects the general nature of the objectives indicated above and often results in broader “clusters” of courses from which students can choose to satisfy their general education requirements or the development of new courses specifically designed for the general education program.

3. General Education Program Summary – Peer Institutions

a. Total Number of Credit Hours

A detailed summary of the credit hour requirements for each of the peer institutions is included in the appendix. Most of the universities require 35-45 semester credit hours of general education courses as part their degree programs, although in some cases the number of credit hours is as high as 50-60 hours.

b. Functional Areas and Groups: Common Features and New Emphases

Courses within the general education core typically are grouped within 5-10 functional/thematic groups, with some universities in recent years moving toward a more flexible “cluster” arrangement developed around learning outcomes. Most of the general education courses are concentrated in the freshman and sophomore years, although an increasing number of universities also require a sequence of “depth” courses within the major related to the general education core goals and objectives (e.g. writing intensive courses or courses emphasizing quantitative/analytical reasoning).

Most general education programs remain centered on a foundation of “traditional” general education core areas:

- Written and Oral Communication Skills
- Math/Quantitative Reasoning Skills
- Natural Sciences (typically with lab)
- Social Sciences
- Humanities/Fine Arts

However, the latter two areas (Social Sciences and Humanities/Fine Arts) have seen the most change in recent years, with many universities developing new areas of coverage that may include topics/courses from these areas grouped together in a new thematic area. Examples of these new general education areas include:

- Ethics/Social Responsibility
- Global Awareness/Diversity/International Issues
- Cultural and Historical Foundations
- Western Tradition
- Non-western Perspectives
- Civilization and World Cultures
- Interdisciplinary Studies
- Human Diversity and the African American Experience

Universities are also beginning to revise their general education requirements to integrate general education goals and objectives throughout the undergraduate curriculum and to focus on changes in technological expectations. Examples of changes in general education requirements that reflect these new influences include:

- Interdisciplinary freshman seminar courses
- Writing intensive courses in the general education program and within the major
- “General Education”-designated courses (non-departmental)
- Technological literacy requirements
- Upper-division “depth” requirements linked to the general education core objectives

c. Unique General Education Programs: Two Examples

Two general education programs deserve special mention because of their broad focus, unique features, and explicit review and assessment process.

1.) University of North Carolina – Charlotte

The University of North Carolina-Charlotte recently completed a comprehensive review/modification of its general education curriculum. Their review/revision process is outlined in detail at the web site below, along with the details of the new general education program. The new program will be implemented starting in the fall, 2003 semester.

<http://www.uncc.edu/gened/default.htm>

The UNC-Charlotte general education program is unique because of its requirement of four non-departmental “liberal studies” courses as part of a general education cluster entitled “Themes of Liberal Education for Private and Public Life.”

As the catalog states, “the UNC Charlotte faculty has selected eight themes of a liberal arts education around which to offer a core of Liberal Studies courses. These courses examine the arts, literature, the western historical and cultural tradition, global understanding, citizenship, ethics, issues of health, and issues of science, technology, and society. Liberal Studies courses, which are taught by faculty members from departments across the University, are dedicated exclusively to general education. All these courses include a consideration of the diversity of perspectives afforded by gender, race/ethnicity, and class, as appropriate for understanding the individual themes of these courses.”

2.) James Madison University

In the late 1990s James Madison University implemented a comprehensive overhaul of its general education program, creating The Human Community, a system of cluster-based general education requirements tied together by a common theme of *“providing a strong foundation of knowledge, skills, and experiences expected of all educated people and preparing students to become flexible thinkers and life-long learners.”* The Human Community web page is located at

<http://www.jmu.edu/gened/message.html>

The James Madison general education program is structured in a different manner than most other general education programs. As the JMU catalog indicates, *“the Human Community provides fundamental knowledge and skills across the breadth of traditional disciplines so that students*

- *learn how to think and communicate effectively (Cluster One);*
- *appreciate the arts and humanities as an essential component of the human experience (Cluster Two);*
- *recognize the relevance of science and mathematics in the world they inhabit (Cluster Three);*
- *identify ways in which political, social and economic forces shape American and global experiences (Cluster Four); and*
- *understand themselves both as individuals and members of various groups in society (Cluster Five).*

In each of these five clusters, students choose and complete a cross-disciplinary or sequenced set of courses called a “package.” These courses together challenge students to make connections among disciplines while satisfying all of the learning objectives of each cluster. Since every package forms a coherent and integrated body of knowledge, students must take and complete a single package of courses and may not pick and choose courses from different packages.”

Note: Also see <http://www.jmu.edu/gened/announce.html> at the JMU web site, which contains an address by Dr. J. Scott Lee on trends in general education curriculum reform and institutions that stand out for their programs and open processes of reform. The address provides useful background information for universities contemplating general education curricular changes.

4. General Education Program Summary – Additional Selected Institutions

In addition to examining the general education requirements for the 15 peer institutions, the Subcommittee on Program Curriculum Model reviewed the general education programs at five additional universities:

- North Carolina State University (NC State)
- Georgia Institute of Technology (Georgia Tech)
- UNC-Greensboro (UNCG)
- Virginia Polytechnic Institute and State University (Virginia Tech)
- UNC-Chapel Hill

These schools were selected because they share similar characteristics with NC A&T (e.g. strong engineering/technical programs – NC State, Virginia Tech, Georgia Tech), are in close proximity and compete with A&T for potential students (UNCG) and/or are currently/have recently gone through the general education review process (UNCG, UNC-Chapel Hill, Georgia Tech).

a. NC State and Georgia Tech

NC State and Georgia Tech have general education programs that are similar to the majority of programs at the schools on NC A&T's peer institution list, with a broad distribution of courses required across the humanities and fine arts, natural and physical sciences, mathematics, social sciences, as well as writing, speaking, and technology-related courses. Overall, there is a heavier emphasis on technical and scientific skills, in credits required and/or the required level of courses, than in the peer institutions. However, Georgia Tech is currently undergoing a review of its general education requirements, developing a general education mission statement, general education objectives and specific outcomes for each of the objectives. NC State's general education curriculum requires students to complete 52 hours of coursework, while Georgia Tech's general education curriculum requires students to complete 44 hours of coursework.

b. UNC-Greensboro

UNC-Greensboro recently (2000) implemented a new general education program that focuses on developing key proficiencies, the acquisition of knowledge, and development of habits of mind and attributes of character. In addition to the typical distribution of courses across functional areas, the new curriculum also includes a required writing-intensive course and four global perspectives courses. Overall, the general education core encompasses 36-37 total hours.

c. Virginia Tech

The Virginia Tech general education core curriculum broadens the traditional general education approach, requiring students to take 36-42 credit hours across

seven “areas,” including writing and discourse; ideas, cultural traditions, and values; society and human behavior; scientific reasoning and discovery; quantitative and symbolic reasoning; creativity and aesthetic experience, and critical issues in a global context. In addition, students must meet a foreign language requirement.

d. UNC-Chapel Hill

UNC-Chapel Hill is currently undergoing a review/revision of its general education curriculum. The proposed curriculum will include 17 credits of “foundation” courses (rhetoric, foreign languages, quantitative reasoning, and wellness) and 25 credits of “approaches” courses (physical and life sciences, social and behavior sciences, humanities and fine arts), plus an experiential learning component (service learning, student internships, study abroad, and fieldwork). The proposed curriculum is intended to serve as a guide or roadmap to the role of particular functional areas in the general education program. The new curriculum also explicitly expands the role of learning outside the classroom – through experiential learning, internships, study abroad, and other programs.

General Education Curricula on the Web – By School

UNC-Chapel Hill

<http://www.unc.edu/curriculumrevision/index.html>

UNC-Greensboro

<http://www.uncg.edu/reg/Catalog/current/UnivReq/GECProgram.html#StudentGoals>

Virginia Tech

<http://www.provost.vt.edu/cc/cc.html>

NC State University

http://www.ncsu.edu/provost/academic_programs/ger/index.html

Georgia Tech

http://www.facultysenate.gatech.edu/UGCmte_Final%20Report.html

http://www.gatech.edu/gen_catalog/info4undergrad-cc.html

5. General Education Review/Revision Process

As noted in the last section, some of the universities that the Subcommittee on Program Curriculum Model reviewed are currently undergoing review/revision of their general education programs or have recently completed a revision of their general education program. These universities provide a useful roadmap for the

review/revision process. It is clear from the experience of other schools that have recently reviewed and revised their general education curriculum that the review/revision process (1) generally is structured to take place over 2-3 years, and (2) requires continuous input and feedback from a broad cross-section of the faculty through an open and public dialogue.

The universities in our sample that were reviewed for this section of the report include UNC-Charlotte, UNC-Greensboro, Oakland University, James Madison University, and UNC-Chapel Hill. In addition, Western Carolina has recently completed a revision of its general education curriculum and was included in our sample. A number of general observations from these schools regarding revisions to general education content and the process of general education review/revision are relevant for NC A&T's current general education review/revision process.

a. Review/Revision of General Education Program *Content*

With respect to the **content** of the general education programs:

- Most programs include 32-42 credit hours of coursework as part of the general education core curriculum.
- There is a continued emphasis on communication, scientific, and quantitative reasoning skills. In some cases, scientific reasoning courses may replace traditional lab-based science courses.
- The general education program often includes upper-division “within the major” requirements, often in the form of writing-intensive courses.
- The scope of the general education curriculum is expanding to include courses in diversity, global issues, ethics, values, and technology.
- There is greater emphasis on the goals and objectives of the general education core curriculum, with measurable desired outcomes often listed.
- Continuous assessment of learning outcomes plays a significant role in the ongoing review and revision of the general education curriculum.
- There is a greater emphasis on creating cross-linkages across functional areas, sometimes through the use of interdisciplinary clusters, freshman colloquia, or non-departmental “gen-ed”-designated courses.
- There is an attempt to simplify the structure of the general education program to make it easier to understand for students and advisors.
- There is increased emphasis on *how* general education courses are taught (e.g. active learning, collaborative learning, writing intensive, focus on critical thinking skills, etc.) in addition to how general education “clusters” are structured or which courses are included in the clusters.

b. The General Education Curriculum Review/Revision *Process*

With respect to the **process** of general education curricular review, a number of observations can be made that are relevant for the current NC A&T general education review/revision process. Specifically, the general education review/revision process:

- begins with an assessment and review of the current general education requirements, but then is sent back to the faculty for further discussion, study, and recommendations.
- includes wide faculty involvement, with multiple committees formed to develop learning goals and objectives, as well as measurable desired outcomes for each of the goals and objectives.
- is an open and public process, with each step of the review/revision clearly laid out in advance, reports of relevant committees continually available on the web, and ongoing dialogue among faculty members encouraged and promoted.
- is a multi-year (2-4 years) process, with a recommendation for specific revisions coming only after an exhaustive review and faculty discussion of desired learning goals and objectives.
- includes measurable assessment features.
- includes extensive background reading on current “best practice” views of general education goals and objectives, “best practice” views of general education review/revision processes, implementation successes and failures, and assessment techniques.
- is an opportunity for the university community to develop a comprehensive, shared vision for the learning outcomes of students.

For two examples of well-defined, open, public, and comprehensive general education review/revision processes, see

University of North Carolina – Charlotte
<http://www.uncc.edu/gened/default.htm>

Status: Review/revision process completed; new general education program begins fall, 2003

University of North Carolina – Chapel Hill
<http://www.unc.edu/curriculumrevision/index.html>

Status: Currently in process

c. Summary: General Education Review/Revision Process

This committee's work should be viewed as an important *first step* in a much broader process of general education review and reform centered in extensive faculty dialogue over the course of 1-2 years. To develop and deliver a successful general education program there must be a high degree of faculty "buy in" to the review/revision process and ultimately, to carrying out the curricular reforms.

In our view, based on the experience of other universities who have gone through the general education review/revision process, that occurs only when a broad range of faculty are involved in a well-defined process of review and revision over an extended period of time, where continuing dialogue helps to generate consensus on the role of the general education process in the overall learning environment of the university, and where that consensus leads to a shared vision for the academic environment of the university. Without a shared view of the learning outcomes of students and an overall commitment to developing a stimulating academic environment where student success is expected, revisions to the general education program will fail to generate the expected results.

6. Appendix: Detailed Summary of Credit Hours in General Education Programs at Reviewed Universities, by Functional/Thematic Area

The following pages contain a listing of the main features of the general education programs at the universities reviewed in this report (15 from peer institution list + 5 additional universities).

	NCAT	UMA-D	UMN-D (see note below)	UNC-C	TN-Chat	USoFL
English - Composition and Rhetoric Communication	6	6		6	6	6
Oral Comm. Skills		3			0-3	
Information/Computer Literacy/Computing		6			0-3	
Humanities/Fine Arts Arts and Society	6			3	6	3
Culture and Artistic Expression/Literacy		9				
Science and Technology Natural/Physical Sciences Computer Science	6	6		8	7-8	6
Math/Quantitative Reasoning	6	3		6	6	6
Social or Behavioral Sciences History/Historical Perspectives Government/Political Science Economics	6			3	6	6 6
Ethics/Social Responsibility Global Awareness/Diversity/International Urban Environment	3	3 6		3 3		
Cultural and Historical Foundations Western Tradition Civilization World Cultures				3	9	
Foreign Language						
Interdisciplinary Studies						
Non-western Perspectives						3
Literature and Social Sciences Literature Philosophy Literature and History						
Physical Education / Wellness	2					
African-American Studies	3					

Human Diversity and the Af. Am. Exp.
Ethnic Diversity

Free Electives

College Academic Success Course

TOTAL	32-38	42	40	35	40-47	36
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Univ. of MN - Students must complete 40 semester credits min., at least 3 in each of ten broad categories

	VCU	OakU	OldDom	PrViewAM	TNTech	UCnFL
English - Composition and Rhetoric Communication	8-12		6	6	12	9
Oral Comm. Skills			3	3		
Information/Computer Literacy/Computing			3	3		
Humanities/Fine Arts Arts and Society Culture and Artistic Expression/Literacy	2-4	4	3	6	3	
Science and Technology Natural/Physical Sciences Computer Science	7-9	4	11-12	6	8	6
Math/Quantitative Reasoning	3-6	4	3	3	3	6
Social or Behavioral Sciences History/Historical Perspectives Government/Political Science Economics		4	3-6 3-6	3 6 6	6	6
Ethics/Social Responsibility Global Awareness/Diversity/International Urban Environment	3 3	4				
Cultural and Historical Foundations Western Tradition Civilization World Cultures	8-9	4				9
Foreign Language	0-8	4	0-6			
Interdisciplinary Studies						
Non-western Perspectives						
Literature and Social Sciences Literature Philosophy Literature and History	9-10	4	3 3			
Physical Education / Wellness					2	
African-American Studies Human Diversity and the Af. Am. Exp.						

Ethnic Diversity	4	3				
Free Electives						
College Academic Success Course		3				
TOTAL	45-64	32-36	38-54	42	37	39

	TXSanAn	JMU (see note below)	FAMU	CIState
English - Composition and Rhetoric Communication Oral Comm. Skills	6		6	6
Information/Computer Literacy/Computing				
Humanities/Fine Arts Arts and Society Culture and Artistic Expression/Literacy	3		6	9
Science and Technology Natural/Physical Sciences Computer Science	6		8	9
Math/Quantitative Reasoning	3		6	6
Social or Behavioral Sciences History/Historical Perspectives Government/Political Science Economics	3 6 6 3		6	9
Ethics/Social Responsibility Global Awareness/Diversity/International Urban Environment				
Cultural and Historical Foundations Western Tradition Civilization World Cultures				3
Foreign Language			12 (BA only)	
Interdisciplinary Studies	3			
Non-western Perspectives				3
Literature and Social Sciences Literature Philosophy Literature and History	3			
Physical Education / Wellness				
African-American Studies Human Diversity and the Af. Am. Exp.				6

Ethnic Diversity

Free Electives 4

College Academic Success Course

TOTAL 42 41-44 36(BS) 48(BA) 51

Content/Thematic Areas 5 5 5 8

James Madison Univ. - Students must complete one "package" of courses in five clusters. See committee report (Section 3b) for web link to the JMU General Education program.

	UNC-G	VaTech	NCState	GaTech	UNC-CH
English - Composition and Rhetoric Communication Oral Comm. Skills	6	6	6 3	6	6
Information/Computer Literacy/Computing					
Humanities/Fine Arts Arts and Society Culture and Artistic Expression/Literacy	12	1	3	6	9
Science and Technology Natural/Physical Sciences Computer Science	7	8	3 11	8 4	7
Math/Quantitative Reasoning	3	6	6	8	3
Social or Behavioral Sciences History/Historical Perspectives Government/Political Science Economics	6 3	6	6	12	9
Ethics/Social Responsibility Global Awareness/Diversity/International Urban Environment					
Cultural and Historical Foundations Western Tradition Civilization World Cultures					
Foreign Language		0-6			7
Interdisciplinary Studies					
Non-western Perspectives					
Literature and Social Sciences Literature Philosophy Literature and History					
Physical Education / Wellness					
African-American Studies Human Diversity and the Af. Am. Exp.					

Ethnic Diversity

Free Electives

College Academic Success Course

TOTAL	37	36-42	49	44	42
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Attachment 3

GENERAL EDUCATION MISSION STATEMENT

General Education at North Carolina Agricultural and Technical State University is essential to the development of our extraordinary students beyond the technical and applied education they receive.

General Education at North Carolina A&T is designed to produce students who are:

- Literate in reading, writing, and presenting
- Mathematically, scientifically, and technically competent and
- Appreciative of the Arts and Humanities.

North Carolina A&T General Education is also designed to produce students who are able to:

- Think critically and
- Effectively work and live in a global society

Additionally, it strives to:

- Enhance students' awareness of African/African American culture
- Enable them to articulate their personal and social values and how these values are shaped by the world around them
- Encourage them to examine individual and social behavior that promote health and wellness.

General Education at North Carolina A&T seeks to help students find their multiple roles and opportunities in a postmodern, global society.

OBJECTIVES AND OUTCOMES

The committee identifies the following general education objectives for all students who earn a North Carolina A&T State University baccalaureate degree. The objectives call for:

- An ability to communicate to and productively interact with others
- Technical, mathematical, and scientific competence

- Appreciation of literature, music and the fine arts
- An awareness of African/African American Culture
- An awareness of culture and values in a diverse world
- An understanding of ethical issues surrounding one's personal and professional activities
- An appreciation of lifelong health and wellness.

It is the recommendation of the committee that these objectives be implemented, whenever possible, in an integrated fashion through interdisciplinary courses.

COMMUNICATION OBJECTIVE: North Carolina A&T State University students will be able to effectively develop a written or oral presentation that accommodates audience needs and shows a mastery of basic communications skills.

Outcomes

Writing

Students will be able to:

- Produce documents based on an understanding of the needs and expectations of both a lay audience and their specific professional audience
- Construct and develop a clear argument, exposition, or analysis
- Demonstrate competence in the fundamentals of effective writing, including clear prose, effective organization, varied syntax, clear logic and standard spelling, punctuation, and grammar.

Oral Presentation

Students will be able to:

- Deliver presentations, both collaboratively and individually, that demonstrate a competence in the core presentation skills, including focus, organization, and delivery
- Summarize the main points of an oral presentation, judge the appropriateness of the presentation for the given audience, and judge the validity of the argument and supplemental material

HUMANITIES AND FINE ARTS OBJECTIVE: North Carolina A&T State University students will be able to demonstrate an appreciation of music, literature, and the fine arts.

Outcomes

Students will be able to:

- Develop an understanding of the interrelationships of literature, music, and the fine arts
- Identify, analyze, and appreciate diverse modes of aesthetic and artistic expression
- Develop an understanding of some of the basic ideas or concepts underlying world culture in literature, music and the fine arts
- Demonstrate dimensions of creativity beyond analytic thought, including imagination, intuition, and metaphor.

AFRICAN/AFRICAN AMERICAN CULTURAL AND HISTORICAL AWARENESS OBJECTIVE: North Carolina A&T State University students will develop an understanding and awareness of African/African American culture:

Outcomes

Students will be able to:

- Demonstrate knowledge of African/African American history and culture
- Develop a frame of reference which makes it possible to identify and interpret critical social and political issues impacting African/African Americans
- Identify and describe the political, economic, and social challenges transforming modern continental Africa.

MATHEMATICS OBJECTIVE: North Carolina A&T State University students will be proficient in basic mathematical skills, be able to formulate problems mathematically, be able to use mathematical methods to solve original problems, and demonstrate an understanding of the nature of mathematical reasoning.

Outcomes

Students will be able to:

- Use the elements of basic mathematics to formulate and solve problems
- Critically analyze quantitative information (interpreting, making judgments, and drawing conclusions from quantitative material)

SCIENCE OBJECTIVE: North Carolina A&T State University students will demonstrate an understanding and application of scientific methodology, laboratory techniques, quantitative problem solving, modeling skills, and experimental design to formulate and evaluate hypotheses.

Outcomes

Students will be able to:

- Formulate hypotheses to explain natural and social phenomena
- Design experiments to evaluate hypotheses
- Execute experiments designed to validate hypotheses
- Understand and apply mathematical concepts to evaluate experimental results

GLOBAL AWARENESS AND CULTURE OBJECTIVE: North Carolina A&T State University students will be able to demonstrate knowledge and understanding of diverse cultures in a global world.

Outcomes

Students will be able to:

- Demonstrate knowledge of the diversity of values and traditions, including the contributions of diverse groups, which shape American society and institutions
- Demonstrate knowledge of the diverse values and cultures shaping societies and institutions in other countries including the contributions of diverse groups
- Demonstrate knowledge of contemporary, historical, social and political issues
- Interpret and evaluate issues from distinctive and differing points of view

ETHICS AND SOCIAL RESPONSIBILITY OBJECTIVE: North Carolina A&T State University students will be able to examine issues involving values, ethics, and social responsibility in disciplined and critical ways.

Outcomes

Students will be able to:

- Identify, comprehend, analyze, and articulate ethical issues
- Appropriately use concepts and theories of human and social behavior in the construction of arguments
- Identify and describe the formal and informal social forces, structures and processes that contribute to the functioning of markets, governments, and other social systems.

HEALTH AND WELLNESS OBJECTIVE: North Carolina A&T State University students will develop an understanding of the psychological and physiological bases of a healthy mental and physical lifestyle.

Outcomes

Students will be able to:

- Explain the elements necessary to maintain a healthy lifestyle
- Describe of the impact of diet, activity, and genetics on health