

# UNIVERSITY STUDIES PROGRAM

## EVALUATION PLAN



The University Studies core curriculum at North Carolina A&T State University is designed to provide a framework for critical inquiry. It is fully interdisciplinary and serves as a foundation for continuing academic development and life-long learning. Through discovery, inquiry, analysis, and application, the core curriculum promotes:

- *broad-based critical-thinking skills*
- *effective written and oral communication of ideas*
- *appreciation for diverse cultures,*
- *commitment to ongoing civic engagement and social responsibility*

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**NORTH CAROLINA AGRICULTURAL AND  
TECHNICAL STATE UNIVERSITY**

*OFFICE OF THE DEAN  
University Studies*

June 25, 2007

Dr. Janice Brewington, Provost and Vice-Chancellor  
Division of Academic Affairs

***Dowdy Building***

**CAMPUS**

Dear Dr. Brewington:

Enclosed is the evaluation plan for the University Studies Program (UNST). This evaluation will be carried out from academic year 2006 through 2010. I am pleased to summarize our activities and share this information with you.

Feel free to contact me should you have any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads "Dr. Joseph L. Graves, Jr.".

Dr. Joseph L. Graves, Jr.  
Professor of Biological Sciences and Dean

Enclosure

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## Introduction: Purpose and Mission

According to Leskes and Wright (2005) assessment of a program's effectiveness begins with understanding the mission, values, traditions, and aspiration of an institution. General education is different from most programs in this regard. In the best of all worlds, general education curricula should be at the center of the institution, and thus should be their signature. The general education program should reflect the learning goals that the university wants all of its students to have by the time they graduate the institution.

University Studies was conceived as just such a program. The Futures vision declared that North Carolina A&T State University wished to become the premier interdisciplinary research institution in America. As such, it would be logical to develop a general education program that reflected that mission. The idea of promoting interdisciplinary thinking at the core of the general education program is not common. Thus University Studies represents one of the boldest innovations in general education amongst American universities today. It redresses over a half century of malaise in higher education, in which general education course offerings were often driven by narrow departmental agendas and faculty popularity contests, as opposed to a real concern for student learning.

This program came together at a time of deep introspection amongst serious practitioners of higher education. Indeed, Derek Bok, former Interim President of Harvard, wrote of the crucial problems in academe. Universities in his view are still unclear concerning the purpose of higher education. Yet in this cacophony of uncertainty, several themes emerged. Universities across the nation believe that they must teach their students to communicate, think critically, understand the principles of moral reasoning, prepare for citizenship, live with diversity, live in a more global society, prepare for life-long learning, and finally prepare them for vocations in the rapidly shifting global job markets of the 21<sup>st</sup> century<sup>1</sup>.

The university's priorities for student learning outcomes mirror those of the business community. For example, the AAC&U has summarized the views of business leaders regarding the priorities for university education. These priorities include: knowledge of human cultures, and knowledge of the physical and natural world; intellectual and practical skills, including inquiry and analysis, critical and creative thinking, written and oral communication, quantitative literacy, information literacy, and teamwork and problem solving; personal and social responsibility, including civic knowledge and engagement, intercultural knowledge and competence, ethical reasoning and action, and foundations for lifelong learning; and finally interactive learning, including synthesis and advanced accomplishment across generalized and specialized studies.

University Studies was constructed with these aims in mind. Our goal is to provide students with a framework for critical inquiry that serves as a foundation for continuing academic development and life-long learning. Motivated by the principle that scholarship is best learned by the way it is practiced; University Studies is designed to apply discovery, inquiry, analysis, and application in the classroom to promote:

- *broad-based critical-thinking skills,*
- *effective written and oral communication of ideas,*
- *appreciation for diverse cultures,*
- *commitment to ongoing civic engagement and social responsibility.*

The pedagogical approach incorporated in the program is to combine coursework and co-curricular experiences to develop in students an understanding of the interdisciplinary nature of knowledge, encourage cross-disciplinary dialogue, and to promote the development of intentional learners who take responsibility for their learning.

The program has four components, the foundation courses, the theme-based courses, service-learning, and the senior capstone experience. Under the present conditions, the foundation courses are being taught primarily by University Studies faculty. The theme-based courses, scheduled for implementation in the fall of 2007, will be taught as a combination of university studies and traditional disciplinary courses. The service learning component of the curriculum is still in its infancy, but this could include the input of faculty from all over the campus. Finally, the senior capstone experience (the first of which will be taught in 2010) will be major-specified.

The keys to assessing any program's effectiveness involve defining the key learning goals for the students, turning the broad learning goals into assessable outcomes and specifying the level of accomplishment required, selecting methods of gathering evidence of learning that are appropriate to the learning outcomes, and finally determining the crucial points at which to gather the evidence (Leskes and Wright 2005.) Once the evidence is gathered, it should be used to refine and improve the program in question. With this procedure in mind, we can outline what the current situation is in University Studies and what we must do to evaluate the program's effectiveness.

## **Foundation Courses**

There are five foundation courses that account for 13 credit hours. These courses were designed to address the specific learning objectives outlined by the University Studies committee (see appendix 1.)

- UNST 100 University Experience (1) – formerly University Survival, FRST 100 [Learning Objectives, 1, 4, 16, 17]
- UNST 110 Critical Writing (3) – piloted in fall 2005, spring 2006 [Learning objectives – 1, 2, 3, 4,]
- UNST 120 The Contemporary World (3) – piloted several times by spring 2006 [Learning Objectives 10, 11, 12, 15.]
- UNST 130 Analytical Reasoning (3) – piloted in Spring 2006 [Learning Objectives, 5, 6, 7, 8, 14, 16.]
- UNST 140 The African-American Experience (3) – piloted in Spring 2006 [Learning objectives, 9, 10, 11, 12, 15.]

The university studies learning objectives are distributed throughout the foundation courses. We are implementing the foundation courses with the idea that each will reinforce learning objectives

presented in the others. In other words, the program is designed to be more than the sum of its parts. Yet, the assessment of program effectiveness must begin with evaluating each of its components separately.

### **UNST 100: The University Experience**

This course is a one credit hour seminar, meant for students in the first semester of their freshman year. The following learning objectives are included in this course.

#### **Box 1: Learning Goals of the University Experience**

10. Interact effectively with people from diverse cultures.
14. Understand and apply ethical reasoning principles to resolve moral, social, and professional issues.
16. Understand and promote principles of wellness that include nutrition, exercise, avoidance of mind-altering chemicals, development of healthy relationships and personal growth
17. Recognize behaviors that place individuals, families and communities at risk.

UNST 100 began as FRST 100 and was developed by the Center for Student Success. This course initial purpose was to emphasize the role of the University Studies program as part of a student's complete education and to present a broad overview of the curriculum structure and rationale. One of the key learning objectives of UNST 100 is to introduce the interdisciplinary themes within the UNST program. In addition, discussions on critical thinking, communication skills, ethics, diversity, civic engagement, and globalization were to be included.

UNST 100 is taught in several formats. The generic format follows the University Studies syllabus and is taught in the main by members of the Center for Student Success. In addition, due to the lack of faculty resources in University Studies, several Colleges and departments were allowed to offer their own sections of the course. For example, in the fall 2006, the College of Nursing, School of Education, School of Business and Economics, and the Departments of Chemistry, Mathematics, and Physics offered their own sections. These departments were asked to align their objectives with the overall curricular structure of UNST 100. Approximately 37 sections of UNST 100, the University Experience were taught in fall 06, with an additional 5 sections offered in spring 07. Most sections were limited to 40 students, but Business and Economics used large section format (~160 students per section.)

This situation was simultaneously beneficial and detrimental to the assessment of learning outcomes. It was beneficial, in that it relieved some of the instructional pressure off of the division of University Studies, and also allowed content in sections to be better integrated to the needs of the specific majors. It was detrimental, in the sense that, the vast majority of these faculty were not members of the division, therefore did not report to the Dean of University Studies, nor did they attend University Studies faculty meetings. As a result of this, the division of University Studies could not guarantee or enforce instructional standards in the sections. For example, some sections were offered pass/fail (as recommended by the division) and some were offered with a grade. Some sections utilized the text book: Ellis, *Becoming a Master Student* 11<sup>th</sup> edition, (as recommended by the division), and some did not require the text. Furthermore, no systematic reports of the formative assessment of learning objectives were reported to the

division. Thus other than the pass/fail rates, we have no means of determining whether learning objectives were met in these sections.

As a result of these issues over academic year 2006-07, on April 11, 2007, the dean of University Studies met with the TCSS faculty concerning the delivery of UNST 100. It was decided that beginning fall 2007, the division of University Studies would require more uniformity in delivery in this course and also take greater responsibility for monitoring its content. In particular, all departments and schools offering UNST 100 sections will be required to more closely adhere to the common syllabus, use the new textbook that is being custom published for UNST 100 by Tapestry Press, and pay greater attention to ensuring that the learning objectives are assessed. Finally, it was also decided that the content of UNST 100 would pay more attention to critical retention related skills, such as time management, study skills, and the transition from high school to university level expectation.

To change the focus of the course to include more emphasis on the transition from high school to college and toward retention, we will have to rewrite the learning objectives of UNST 100. A suggested revision would be to retain the UNST learning goals, 10 & 17, but to add to these two learning goals not specified in the University Studies program. These objectives concern study habits and time management and are essential to the ability of the students to master the stated goals of the program.

**Box 2: Revised Learning Goals of the University Experience**

- 10. Interact effectively with people from diverse cultures.
- 17. Recognize behaviors that place individuals, families and communities at risk.

Not specified in University Studies Learning Objectives

Students should understand the purpose of a college education.

Students should understand and be able to apply study habits best suited for success in university level work.

Students should understand and be able to apply time management skills best suited for success in university level work.

Once these learning objectives are rewritten, they must be turned into specific learning goals that can be assessed in the course. Appendix two gives an example of a rubric specifying how the purpose of the college education learning objective can be assessed. The operational hypothesis is that the vast majority of the incoming freshman would score in the fair to weak categories with regard to these learning objectives. At the end of the course, we would demonstrate evidence of learning if the vast majority of students now score in the good to excellent categories of the rubric.

Thus evaluation of the effectiveness of the University Experience will be carried out by the faculty developing rubrics for all learning objectives specified for this course. Students will be assessed in each week of the class via a rubric associated with the learning outcomes prior to and after instruction. Evidence of effective learning will be illustrated by a change in the distribution

of students within the rubric, e.g. students increase their representation in good and excellent understanding of the concept.

### **Basic and Critical Writing**

All incoming freshman students must take the freshman writing proficiency examination. This examination is currently being administered using the Criterion On-line Writing Assessment. Criterion is an artificially intelligent computer program that is based on a rubric of expected college level writing ability. Students who do not receive higher than a 2 score on criterion must register for UNST 103: Basic Writing. In the fall 2006, only 199 of 2094 (9.5%) students received a score of 2.0 or less on Criterion. The fact that so few students were considered in the remedial category is inconsistent with the experiences of UNST 110 instructors from the fall of 2006. They found that many of the students were not adequately prepared for college level writing.

An example of a Criterion level 2 and level 3 essay are presented in appendix 4. Criterion allows students to use a spell checker, so very few words are misspelled. However in both essays some misspelled words appeared. It also checks for grammar and punctuation. The level 2 essay has more of these errors than level 3. Yet, and still the difference between these student responses is not clearly distinguishable. This presents a problem for how we have been using Criterion to place students in freshman writing. Utilizing a sample of 958 Criterion scores, and analysis was performed to determine the relationship between Criterion score, Verbal SAT Score, and grades in English 100. This analysis showed that the vast majority of the sample scored Criterion scores of 3 or less, 69.6% (Appendix 4.1). The Criterion test did not correlate with Verbal SAT score, nor did Verbal SAT score correlate with student grades in English 100. However, Criterion did predict student performance in English 100 (Pearson  $r = 0.134$ , highly significant at  $p > 0.01$ .) This means that we can use Criterion as a measure of student performance in Freshman writing. Thus as part of our plan to determine value added in UNST 103 and 110, we will give the Criterion exam to students at the end of these courses.

The small difference between 2 and 3 on Criterion is supported by the failure rates in UNST 110, from both fall 2006: 13.7% of 591 students and spring 2007: 23.1% of 791 students. This suggests that the passing rate for the Criterion freshman proficiency test is set too low to catch students who are at risk and require remediation. Therefore we will be asking Mr. Ussery to provide us with the full range of Criterion scores from students who entered in fall 2006. With this information we will examine how these students fared in writing courses (such as UNST 110, English 100, or English 101.) The purpose of this analysis will be to determine the efficacy of the Criterion test, with regard to predicting the performance of students in our freshman level writing classes. It is our hypothesis that the test may not be a powerful predictor of student performance, hence may not be accurately predicting who needs remediation.

UNST 103 focuses on reading, writing, grammar/mechanics, and vocabulary. In fall 2006, of the 199 students enrolled in UNST 103, 185 passed. The question of the effectiveness of this course is best addressed by whether these students were prepared to at least pass Critical Writing UNST 110 or English 100 in spring 2007. The data indicate that 144/185 students enrolled in

UNST 110 in spring 2007. Of these 14 withdrew, leaving 134 that finished UNST 110 in spring 2007. The frequency and percentage of grades is given in appendix 3. In short, 67.2% of these students passed UNST 110 with a grade of C or better. The operational assumption here was that students, who passed UNST 103, would be prepared to pass UNST 110, and these data support that hypothesis.

Critical Writing (UNST 110) introduces students to reading comprehension, writing processes, and writing strategies adaptable to multiple disciplines.

**Box 3: Learning Goals of Critical Writing**

1. Effectively use information technology to find, interpret, evaluate, and use information discerningly.
2. Effectively communicate in diverse settings and groups using written, oral, and visual means.
3. Effectively employ critical thinking skills in written and oral communication.
4. Effectively relate ideas and concepts, as well as modes of inquiry, across disciplines.

Students read texts that explore political, social, economic, and environmental issues and evaluate them from an interdisciplinary perspective. Each section of UNST 110 was expected to adhere to general syllabus but each was organized around a theme for critical thinking and discourse. These themes in fall 06 included: Truth and Perception, Education: Asking Questions about Our World, Globalization and Inequities in the World, Terrorism around the World, Identity and Perceptions, Race, Class, and Identity, Identity, Family, and Culture, Identity and Perceptions, HIV/AIDS Pandemic, Freedom and Confinement, Lies, Food and Its Influence, Sustainability, Contemporary Slavery around the world.

The course focuses on developing formal and informal writing and speaking, pays attention to grammar and conventions of standard edited English, teaches students how to revise drafts, and to respond to constructive feedback about their writing. Students are required to develop a writing portfolio for course assessment. Ultimately, students achieve improved writing and reading ability, preparing them for discipline-specific coursework. These assignments are shown in Appendix 4.1.

There were 53 and 56 sections of Critical Writing offered in fall 06 and spring 07 respectively. Enrollment in these sections was capped at 26 students. The faculty of Critical Writing were primarily lecturers or adjunct faculty members in the Division of University Studies.

Course Learning Objectives and Formative Assessments used in Critical Writing

All students who enrolled in Critical Writing passed the freshman writing proficiency examination. This exam was given during freshman orientation and was carried out utilizing Educational Testing Service's online Criterion program. Criterion is an artificially intelligent computer program that is based on a rubric of expected college level writing ability. However, to determine whether students have actually increased their writing and critical thinking ability



over the semester, the Critical Writing faculty assign students a diagnostic essay during the first week of class.

In fall 2006 data were collected from 6 instructors accounting for 597 students (43.2%) enrolled in Critical Writing. A sample this large is generally considered a reliable estimate of the entire population. The frequency report is provided in appendix 4.2. In this semester, 13.7% of the students failed the course and 10.4% received D's. Conversely, 24.3% and 33.3% received either an A or a B. This is illustrated by the frequency distribution graph which is skewed toward higher grades. The mean grade from this sample was 2.44 with a standard deviation of 1.32. The grades for spring 2007 were significantly worse (the same result was observed in Analytical Reasoning and the Contemporary World.) Based on a sample of 719, the mean grade dropped to 1.91 with a standard deviation of 1.28. The frequency of F's significantly increased from 13.7% to 23.1%. The fact that general decrease in student performance occurred in several of our classes suggests that this had nothing to do with changes in instruction. There were no significant changes in the way Critical Writing was taught between semesters. One instructor in Critical Writing was able to show that the majority of the increase in F scores for spring 2007 in her course resulted from student lack of attendance (32/42 F's awarded came from never attending or lack of attendance.)

Student grades and their learning cannot be simply equated (Leskes and Wright 2005.) Student learning in any course results from variation of the following factors:

Student learning = Faculty member + Pedagogy + Learning Objectives + Student Learning Styles + Student Motivation (Lattuca, Voight, and Fath 2004.)

Faculty members vary in experience and skill, pedagogies differ, learning objectives can vary, and individual students have different learning styles and motivation. The University Studies curriculum attempts to equalize pedagogy and learning objectives in all sections of its courses. In courses with significant sample size of students, the range of learning styles and motivations should be randomized across the student population. This means that in our curriculum, variation between faculty members could be a significant source of variation in learning outcomes.

To examine this hypothesis for Critical Writing, box plots showing mean scores for student performance on assessments for two lecturers from Critical Writing (Noreen Hannon and Ruth Omunda) are shown in appendix 5. For both instructors, students were combined from all 4 sections taught in this semester (N = 74, 98 respectively). The first assignment was an initial narrative/descriptive essay. The last assignment reflects student participation across the entire semester. To evaluate whether these students were improving their writing across the semester, assignments 2 – 7 were placed in univariate ANOVA. Assignment one was not used in the analysis, since it is not graded as critically as the remainder of the semester assignments. The ANOVA tests whether at least one of the mean scores was different from the others. The ANOVA was highly significant for both instructors. In each case, a post hoc test was used to show which of the scores on assignments were significantly better than the others. The post-hoc analysis showed that the mean of 7 was significantly higher than assignment 2. This taken with the general increase across the semester is consistent with the hypothesis that students were learning under these instructors.

This analysis can be applied to all instructors across all sections. The goal would be to determine how much improvement occurs by each instructor. Other learning objectives in this course can be examined using the same procedure. For example, one of the learning objectives of the course is to introduce students to the concept of plagiarism and teach them the proper use of citation in writing. This is carried out via the use of Turnitin.com. Turnitin.com analyzes the student writing samples, and assigns them an originality report. The originality reports are in percentages of non-original material in the essay. Typically, students will submit essays with originality reports > 90% (90% plagiarized) at the beginning of the semester. If the instructor is successfully teaching and students learning the meaning of plagiarism and proper citation, then the originality report percentages should drop over the course of the semester. This progress would be quantifiable for every class in Critical Writing.

Each of the learning goals in appendix 4 can be examined in this way. However, there needs to be a means to evaluate the totality of improvement in student writing and critical thinking over the semester. One way this might be accomplished is by utilizing the Criterion On-Line Writing test as a way to gauge improvement across the semester. In the summer during orientation, all freshman students must take the Criterion evaluation to be placed in either UNST 103 or UNST 110. A measure of value added, could be achieved by comparing the individual student's freshman orientation score, with a score derived from Criterion administered at the end of the course. We are investigating this possibility with Mr. Ussery. Criterion does not explicitly examine critical thinking however; therefore a different means will need to be used to assess gains in that capacity. This means will be discussed as part of the overall assessment of value added by all of the foundation courses.

### **The Contemporary World (UNST 120)**

The Contemporary World (UNST 120) was a course that began as History of World Civilizations Pt. II. (History 101.) It was designed by the faculty of the History department and modified to become a University Studies course. In academic year 2006-07 the faculty teaching the course were: Drs. Thomas Porter, Michael Roberto, James Wood, and Yunqui Zhang (History) and Dr. James Crawford (jointly appointed between University Studies and History.)

This course was designed to be taught in large lecture format (300 students.) As such, an important objective of the course was the teaching the students to properly use the Blackboard learning system. The key elements of the course syllabus are given in appendix 6.

#### **Box 4: Learning Objectives of the Contemporary World**

1. Effectively use information technology to find, interpret, evaluate, and use information discerningly.
2. Effectively communicate in diverse settings and groups using written, oral, and visual means.
11. Understand and appreciate the diversity and interrelationship of cultures locally, regionally, nationally, and internationally
12. Understand the role of social, political, and economic institutions and processes in the development of societies and the factors that lead to dynamic change in societies over time.

## Challenges of Interdisciplinarity in the Contemporary World

From its inception the Contemporary World was not sufficiently interdisciplinary. This concern was raised by the University Studies faculty as a whole with the instructors of the Contemporary World (whose appointments reside in History.) The course as delivered in academic year 2006-07 was in the main a history of the 20<sup>th</sup> century course, organized around geographic regions of the world. This was in part the result of the courses origin in the history department, and the academic training of its instructors (all were historians.) In spring 2007, the removal of the history faculty from Contemporary World was agreed to by the deans of Arts and Sciences and University Studies. This had the mutual benefit of returning the history faculty to teach upper division courses in A&S, and allowing the content of the Contemporary World course to be determined by the University Studies faculty. In this regard, the Contemporary World course is undergoing revision during the summer of 2007. The aim of the revision is to make the course more fully interdisciplinary and to change the focus from the history of various geographical regions to a focus on key global issues of the 21<sup>st</sup> century. The issues will include topics such as globalism, science and technology, environment, population, global governance, and terrorism and statelessness.

### Class size

Contemporary World was taught with 300 student lecture sections in academic years 2005-06 and 2006-07. National data suggest that very large lectures are difficult on students, particularly with regard to engagement (Glenn 2007; Greenwald, 1997; Marsh and Roche 1997.) These studies suggest that students routinely rank large classes lower on student evaluations, without regard to the quality of instruction in these courses. This may result from students feeling less engaged in large lecture courses. To deal with this possibility, Contemporary World will be offered in 150 student sections in the fall of 2007. The course will also be team taught with both professors present in all sessions (this was not the practice in academic year 06-07.) Each section will be provided with at least one graduate teaching assistant, resulting in a student to instructor ratio of 50:1.

### Formative and Summative Assessments of Contemporary World

Classroom response technology (clickers) was piloted in this course in fall 2006 and used more extensively in the course in spring 2007. These response systems allowed faculty to determine whether students were grasping material presented in lecture and gave the ability to provide instant feedback. The software collects responses for every student in every lecture they attend. Thus, the clickers were essential for both keeping accurate attendance records in the 300 student lecture, and also allowing faculty to track individual student progress (examples of this data will be provided in the section on Analytical Reasoning.)

Summative assessments indicate that the course was effective in delivering the stated learning objectives. Despite unsupported claims to the contrary, the performance of students in the Contemporary World was quite strong. The distribution of student performance from fall 2006 is given in appendix 6.1. Withdrawals were not included in this report, however all sections were limited to 300 students (Section 120-01 was allowed to over enroll.) This means at most, there could have been 18, 8, and 22 withdrawals from sections 120-02, 120-03, and 120-04

respectively. Thus in the fall of 2006, 53.9% of students enrolled in the Contemporary World earned an A or B, compared to only 20.1% who received a D or an F.

The Contemporary World saw fall off in student performance similar to what occurred in Critical Writing and Analytical Reasoning in spring 2007. The mean student grade dropped from 2.34 to 1.88. In addition, the percentages of D and F's increased to 14.9 and 21.9%.

In the fall 2007, the faculty of Contemporary World, will implement a pre-test to determine how much of its learning objectives are understood by students upon entry to the university. The overarching learning objectives specified in Box 4 will be translated as a series of more specific areas of knowledge and understanding. Students will be tested on the first day of class, prior to any instruction. In this way, we will have a baseline level of student knowledge by which we can assess how much additional learning has occurred over the semester. The present idea is to reshape the course by focusing on the following areas: population, resource management, technology, conflict, governance, economic integration, and information. The presentation of these would be organized around the four University Studies themes: Science, Technology, and Society; Energy, Environment, and Society; Community, Conflict, and Society; and Health, Lifestyles and Society. The Pre-test would include both questions that deal with both basic information (global literacy) and critical thinking. Some examples of potential pre-test questions are given in appendix 6.2.

### **Analytical Reasoning (UNST 130): UNST Learning Objectives: 5, 6, 7, 8.**

Analytical Reasoning is the most interdisciplinary of the foundation courses, and as such is the course most difficult for students and faculty alike to comprehend. Its purpose was to demonstrate the linkages between general critical thinking skills, formal logic, mathematical and statistical reasoning, and the scientific method. The learning objectives of this course do not specify that any particular mathematical or science content matter be presented or acquired in this course. The course is about how to think, not what you should know. The majority of the faculty who taught analytical reasoning were members of the division of University Studies, with two originating in Engineering, and one from the Chemistry Department.

This course was designed to be taught in large lecture format (160 students.) In the fall of 2006, each large lecture was broken into 4 breakout sections (40 students each) to facilitate active learning exercises and allow students to receive feedback in smaller groups. The breakout sections were taught by a combination of tenure track faculty, adjunct faculty, and graduate teaching assistants. The graduate teaching assistants and adjunct instructors had received a week of training organized by the division of University Studies in conjunction with the Academy of Teaching and Learning in the summer of 2006. Unfortunately, there was wide variation in the quality of instruction that occurred in breakouts in the fall 2007. For example, at least one breakout instructor (David Pollard, Chemistry) simply stopped teaching his sections four weeks into the semester. This precipitated an emergency situation, requiring town hall meetings with the impacted students. To redress the student's legitimate need for a breakout experience, the dean of University Studies was forced to take on the instruction of these sections. After a review of the instruction of the breakout sections, it was decided to discontinue them for spring 2007. The main problem was the lack of experience amongst the GTA pool. None of these students had taken a course devoted to interdisciplinary thinking in mathematics and sciences as

undergraduates. Resumption of the breakout sections for analytical reasoning may be possible after the quality of our graduate programs increases, or it would require additional faculty resources for the division.

This situation is also an example of variation in instructor quality, profoundly influencing student learning outcome. In this case, the instructor lacked ability and motivation, as well as the fact that they violated the agreed upon pedagogy for the course and did not adhere to the learning objectives (see discussion of model of student learning in Critical Writing section above.)

The role of GTA's was also changed in the spring semester of 2007. Since they were not being used for this purpose, they were assigned as supplemental instructors for the main lectures. The GTA tutoring sessions were scheduled to allow maximum flexibility for student attendance. Two GTA's were assigned to each section, along with the two lead instructors (providing a student/faculty ratio of 40:1.) Students could attend the tutoring sessions of any lecture of the sections.

As in Contemporary World, an important objective of the course was teaching the students to properly use the Blackboard learning system. Appendix 7 provides the course syllabus and describes the conduct and content of the course.

#### Formative and Summative Assessments of Analytical Reasoning

Assessment in Analytical Reasoning began with a pre-test to determine student preparedness in the broad areas of critical thinking/logic, mathematical and statistical reasoning, and scientific literacy (content and method.) The purpose of the pre-test was to establish a base line by which any value-added during the semester could be determined. Appendix 7.1 presents the data generated from the fall 2006 and spring 2007 pre-tests.

The data were available for 410 of the 950 students who took the pre-test (43.1%). The highest score was a 69% and the lowest a 7%. The mean was 0.3941 with a standard deviation of 0.103. The cumulative frequencies indicated that 90% of students registered scores lower than 50%. The results from the spring 2007 pre-test were not significantly better. These results were generated on 325 of the 800? Students. The maximum was a 72% and the minimum was a 7%. The mean was 42.83 with a standard deviation of 0.107. The cumulative frequencies indicated that 84.9% of the students scored less than 51% on the pre-test.

The results of the pre-test were not surprising. Our operational hypothesis was that many of our students would be deficient in areas of mathematics and science. This hypothesis is supported by national data on math and science proficiency demonstrating that a large disparity exists between historically underserved populations (African Americans, Hispanics, and American Indians) versus historically privileged populations (European Americans and Asian Americans.) For example, in 2005, The Nation's Science Report Card demonstrated that only 2% of African American 12<sup>th</sup> graders were proficient in science, compared to 86% of European Americans. In North Carolina, the 2005 National Assessment of Education Progress showed that only 12% and 6% of African American 8<sup>th</sup> graders were proficient in mathematics and science, compared to 42% and 31% of European Americans respectively. Thus, based on the academic

characteristics of our freshman class, we expected that many of them would have deficiencies in their mathematics and science backgrounds.

The questions in the pre-test were pitched at a level such that a high school senior with the standard repertoire of math and science courses should have been able to answer them with no difficulty. The pre-test was administered with a questionnaire that allowed us to determine the mathematics and science background of the students. The data indicated that the vast majority of these students had taken both the standard math and science sequence expected of North Carolina high school students. The questionnaire asked the students to rank themselves relative to their peers in mathematics and science ability (1 poor, 2 fair, 3 good, 4 excellent.) In a sample of 171 student tests administered in the fall 2006, the mean self-rank was 2.82 with a standard deviation of 0.706, and 2.59 with a standard deviation of 0.724 in mathematics and science respectively. The students were also asked whether they considered themselves “critical thinkers.” No definition of critical thinking was given in the questionnaire, and 50.1% of the students described themselves as critical thinkers. The scores on the pre-test within this sample contradicts the self-ranking. While most students ranked themselves between fair and good in mathematics and science, the mean score for this sample group was 0.399 with a standard deviation of 0.103. Thus the mean score on the test indicates a poor knowledge of mathematics and science for this group. Neither was there any correlation between a student’s self-rank and their performance on the test. The Pearson correlation coefficient ( $r$ ) for the self-rank with test score was 0.171 and 0.085, for mathematics and science with test score ( $N = 171$ , ns.) Neither correlation was statistically significant. There was a highly significant correlation for the student’s self-rank in mathematics with their self-rank in science ( $r = 0.355^{**}$ ). Taken together these data indicate that this sample of students entered the university with a false sense of their mathematics and science comprehension. The situation was worse when one considers that the majority of students began with this false sense of mathematics and science proficiency combined with the idea that they were critical thinkers.

#### Clicker use in formative assessment

To help offset the disadvantage of large class room settings, radio frequency class room response systems were used in Analytical Reasoning (clickers.) In academic year 2006-07, the clickers were provided by Interwrite PRS, the industry leader in classroom response. The PRS system allows instructors to develop questions that can be used for formative assessment within a classroom presentation. Each student has a clicker with a unique radio frequency id. Thus their answers are recorded by the PRS system and stored in the electronic grade book. During the lecture the student responses are displayed on the board allowing the students immediate feedback concerning whether they grasp a concept discussed in class. Instructors have the option of allowing the students to receive a message informing them of whether their individual responses are correct. Or, instructors may choose to not allow students to receive this message, allowing for the option of peer teaching during the class session. To insure that students were accurately responding to the formative assessment within class, students were informed that one question amongst those used in the session would be counted as a graded quiz. The students were not told, which question would be counted. Appendix 7.2 gives an example taken from a session report in Interwrite-PRS. The question is shown, along with the class responses, as well as an accounting of each individual student’s response.

Appendix 7.3 shows a class response across an entire lecture. The lecture was devoted to inductive arguments in general, analogical arguments, and inductive generalizations. There were 131 respondents in this class session. The procedure for using class room response for formative feedback involves interspersing the lecture and class room discussion with questions designed to determine the student's understanding of the concepts presented in the class session. The questions are generally multiple choice, but the potential responses are constructed to determine whether the student has a conceptual grasp of the issue. For example, well constructed questions also include detractor responses that result from common student misconceptions of the issues. In this class session, the data indicate that in the first two questions that the students were still having difficulty grasping the concept of inductive arguments (correct responses were 24% and 19%). However, by question 3 more than 50% of the class understood the concept well enough to apply it to a specific form of inductive argument, the analogical argument (53, 51, 56%) and the highest correct response came from the idea of relevant difference (85.5%). The class still retained at least 50% understanding of a new concept of representative sample, which was introduced as part of the inductive generalization concept. We have this data for every class session that used Interwrite-PRS in academic year 2006-07. The ability to collect this sort of data involving student learning has tremendous potential to improve teaching at North Carolina A&T State University, and should be considered for adoption by every academic unit.

The implementation of the Interwrite-PRS system required learning on both the part of the students and the faculty. Many of our students had underdeveloped technical and information literacy skills in fall 2006. These students had difficulty logging on to the registration web site to register their clickers. There were also some technical problems with loading student responses directly into Blackboard. These issues were ironed out by the University Studies faculty over the course of fall 2006. Enough concerns about the ease of use of Interwrite-PRS remained such that in the spring 2007, an alternative system from Turning Point was piloted in two sections of Analytical Reasoning. At the end of the semester, a survey was taken to allow the students to compare the two systems. The results are given in appendix 7.4.

### Summative Assessments from Analytical Reasoning

The summative assessments of this course suggest that despite all of the difficulties experienced in its implementation, students learned significantly. The fall and spring summative assessments are given in appendix 7.5. The fall results include all grades submitted to the registrar, while the spring results were calculated by the grades submitted to the Dean at the time of the writing of this report. On the face of the data, the fall and spring summative results are diametrically opposed. In fall 2006, a significant percentage of students received an A or B (24.6% and 29.4%) versus a much smaller percentage of D or F's (5.6% and 10.9%) respectively. This situation is reversed in the spring 2007 sample (A and B's are 6.2% and 19.3% versus D and F's at 23.0% and 22.5%.) It is hard to interpret these results. It could be that elements of the course changed significantly, or it could be that elements of the student population changed significantly. Given that the difference between fall and spring results is also observed in Critical Writing, it is more likely that the student population is somehow different in spring semester. One explanation for this would be if there was a higher rate of failure in students who are repeating the course, versus those who are taking it for the first time.

Appendix 4.6 includes an analysis of fall 2006 grades broken out by major. These results showed that students who declared Nursing as their major performed best in fall 2006, followed by Engineering, Business, Arts and Sciences (math-science) and Agriculture. An analysis of variance by major was performed with Bonferroni post-hoc analysis showing the major effect was statistically significant. However, it also revealed that statistically, Nursing, Engineering, and Business only fared better than undeclared students, Education, and Technology. They did not do better statistically than Art and Science majors, whether they were science or non-science. These results are important in that they vitiate the claim made by some detractors of the AR course, that science and engineering students don't really require this course. In fact, by objective, measurable outcomes, their learning in AR was equivalent to those of non-science students. It must be remembered that the benchmark for assessing learning in this course are the pre-test results, which indicated that all students entered in fall 2006 with weak critical thinking, science and mathematics proficiency.

While incomplete, the results for spring 2007, require serious attention. The mean grade in the course dropped from 2.51 in fall to 1.63 in spring. This is startling when one considers that the logistics of the course were running much more smoothly in spring as opposed to fall semester. It is possible that when grades from the remaining AR sections become available that the disparity between spring 07 and fall 06 will get smaller. However, the faculty will review the differences between the two semester to ensure that fall 2007 does not see a repeat of this phenomenon.

#### Improving Analytical Reasoning Learning Objectives

The learning objectives that for Analytical Reasoning (as well as all of the foundation courses) are overly vague and general.

#### **Box 5: Learning Objectives of Analytical Reasoning**

5. Use analytical thinking skills to evaluate information critically.
6. Apply multiple modes of inquiry, including quantitative and qualitative analysis, to formulate, describe, evaluate, and solve problems.
7. Apply scientific reasoning skills to model natural, physical, social, and aesthetic phenomena using multiple modes of inquiry.
8. Use a wide range of disparate information and knowledge to draw inferences, test hypotheses, and make decisions.

As these objectives are currently stated, they are difficult, if not impossible to assess. For example, just how does one use analytical thinking skills to evaluate information critically? What is an analytical thinking skill? Is it formal logic only? Is it mathematical and statistical reasoning alone? We conceived of this course as one which would help the student learn the interrelationship between formal logic, mathematical and statistical reasoning, and the scientific method. Furthermore, they should be able to learn how to apply this form of thinking for real world problems, as well as recognize the limitations of this form of thinking. For example, national data show that the majority of our population is resistant to science. For example, in 2005, a Pew Trust poll found that 42% of Americans said that they believed that humans and



other animals had existed in their current form since the beginning of time (New York Times, 31 August 2005.) This is equivalent to saying that 42% of Americans do not accept the key result of evolutionary biology, despite the overwhelming scientific evidence supporting its central tenets.

Thus for analytical reasoning to be effective, it must operate against a series of pernicious and deeply rooted misconceptions within our students. Furthermore, it is a series of misconceptions that many of them do not wish to have addressed. For example, AAC&U recently conducted a series of focus groups across the nation to determine what both business and industry leaders, as well as high school and college students thought were important college learning outcomes. Science and technology education was ranked by 82% of the business and industry leaders as something that colleges and universities needed to do better. However, in one poll, science and technology was not mentioned at all by high school rising seniors, and college rising juniors and seniors, and in a second poll, knowledge of science and its relation to other fields was ranked among the least important college learning outcomes (Schneider 2007.)

There are at least two reasons why American students in general, and subpopulations of American students in particular, are resistant to science. The first reason is that science often contradicts “common-sense” intuitions about the natural and physical world. In addition, science often contradicts the authorities that individuals within various cultures believe are reliable and trustworthy. For example, children are born with an innate sense of teleology (every thing as a design or a purpose.) If you ask a four-year old child what is the purpose of a lion, they will answer to “go in the zoo.” Or what is the purpose of a cloud, “to make rain” This incipient teleology persists with individuals into adulthood (Bloom and Weisberg 2007.) This form of teleology makes it difficult for people to accept important scientific results, such as the relationship between the brain (as physical organ) and the mind (consciousness.) Thus someone who asserts that the brain is the origin of consciousness, has an easier time justifying abortion of a human embryo (which has no brain or nervous tissue), than someone who asserts that the origin of consciousness is supernatural (immaterial soul).

Even more challenging is when scientific methods and their results come into conflict with the belief systems that students accept as trustworthy. What is happening in this case, is that students make a judgment on the source of the claim (scientist versus minister) as opposed to the claim itself (modern organisms are the result of descent with modification from earlier organisms, or all organisms are unchanged over the age of the Earth.) Thus students approach their understanding of nature by evaluating credibility. This is precisely why a course that integrates logic, mathematical and statistical reasoning, and the scientific method is essential for modern university students.

The second reason for why students resist science has to do with how it has been taught in the K-12 system. The many problems with American K-12 science education have been discussed widely (e.g. AAAS, Project 2061.) The problem of equity and access is particular concern to the students who have traditionally made up the majority of NCATSU. Often, these students originate in school systems that have few resources for science courses, poorly trained science teachers, and out of date curricula.

These two reasons together, incipient resistance to science and poor educational experience with science is even more reason for promoting sound learning objectives in Analytical Reasoning. Appendix 7.7 presents a series of specific learning objectives that can be assessed in Analytical Reasoning.

**UNST 140: UNST Learning Objectives: 9, 13, 14, 15.**

In many ways, the African American Experience is just as interdisciplinary as Analytical Reasoning. Yet for a number of reasons, the resistance to interdisciplinarity in this course was much less on the parts of the students and the faculty. In part, this results from the fact that the discipline of African American Studies has been interdisciplinary from its inception in the late 1960's. Generally, African American Studies has been predominated by the arts, humanities, and social sciences. Furthermore, the subject matter of the African American Experience was more easily appreciated by our students, many of whom, had never had any significant exposure to this content in their high schools.

The faculty who taught the African American Experience were members of the division of University Studies. By far, the African American Experience course was the most understaffed relative to the instructional need. For this reason, two tenure track hires were made during the spring 2007 faculty search. In the fall 2007, Drs. DeReef Jamison and Tanya Price will be joining the African American Experience group.

The course was designed around topics in the African American Experience. Appendix 8 describes the course syllabus and learning objectives. One of the most distinctive features of the course was the group projects. The projects were assigned in all sections, and the students judged which of their peer projects was best in their section. The winning projects went on to a division wide competition which was judged with the aid of faculty from across the campus. The division-wide winners will be honored in a University Studies award ceremony to be held in the fall of 2007.

Formative and Summative Assessments in the African American Experience

Formative and summative assessments in this course followed techniques used in both Critical Writing, as well as Analytical reasoning. Appendix 8.1 provides summative data from spring 2007. The frequency of A and B's was 9.0% and 35.9% respectively, compared to 12.3% and 11.9% D and F's. The mean grade for the course was 2.17 with a standard deviation of 1.13. This appendix also includes an analysis of grades by instructor. The analysis of variance shows that there was an instructor effect, however this resulted from the fact that Graves and McDaniel taught sections that were in different formats compared to the general courses of Alston, Barnes, and Blackmore. Graves had an honors section which scored significantly higher grades, and McDaniel taught on-line. Neither format would be expected to be equivalent to the general sections.

**Box Five: Learning Objectives of the African American Experience**

9. Understand African/African-American culture and traditions, including political, economic, and social challenges affecting people of African descent.
13. Understand the role of literature, music, and the fine arts in describing, defining, and celebrating the human condition in diverse world cultures.
14. Understand and apply ethical reasoning principles to resolve moral, social, and professional issues.
15. Understand the role that markets, governments and other social institutions can play in reducing social and economic inequality

This course was delivered in a variety of formats, including large lecture (160 students), with 4 breakout sections (40 students each.) These were used to facilitate active learning exercises and allow students to receive feedback in smaller groups. The breakout sections were taught by a combination of tenure track faculty, adjunct faculty, and graduate teaching assistants. The graduate teaching assistants and adjunct instructors had received a week of training organized by the division of University Studies in conjunction with the Academy of Teaching and Learning in the summer of 2006. In addition, some sections were taught at a limit of 40 students, as well as an honors section that was taught with 28 students in spring 2007. Dr. Cecily McDaniel taught the course in on-line format both semesters.

The fact that this course was delivered in multiple formats allows us to examine the impact of class size and type of delivery on student grades. To accomplish this a two factor ANOVA utilizing format (large, small, on-line) and instructor (Barnes, Blackmore, Alston, and McDaniel) was computed (Appendix 8.2). The honors section was not utilized in this analysis (instructor: Graves.) The ANOVA showed that there was not a significant impact of format on student grades in the spring 2007. Contrary to popular wisdom, the mean grades of the formats were on-line > large > small sections. There was a significant impact of instructor on grades. The interaction term between format and instructor was almost significant. This may have resulted from the fact that the instructor who taught the on-line section awarded higher average grades than the other instructors. At this point in time it is impossible to determine whether the difference resulted from the characteristics of the instructor, or whether it was due to the on-line instruction environment. Also, it is important to recognize that while the ANOVA for small versus large class size was not significant, this could have resulted from the fact that we only had two small sections in the analysis. Subsequent evaluation of the class size effect will be required before we have a high degree of confidence in the significance of this result.

#### Future Evaluation of the African American Experience

In fall 2007, the African American Experience will also administer a pre-test to determine how much background information and critical thinking students bring to the University concerning the African American Experience. Ironically, most of our students enter the university with little formal course work in African American Studies. This means that they harbor a variety of misconceptions, factual and logical concerning this crucial body of knowledge. By documenting these misconceptions, we will be better able to demonstrate value added from this course. Formative data was collected in the form of class room response

systems from spring 2007. As of yet this data has not been analyzed for this course. We will continue to gather this information to allow us to provide improvement of instruction.

### **Assessment of theme based cluster courses**

The UNST core requires 12 credit hours of Theme-based courses. All Foundation Courses (or their equivalent) must be completed before taking Theme-based courses. Students will be required to select one cluster theme and take 12 credit hours within the same theme. These courses will be taught for UNST studies credit for the first time in the fall of 2007. Theme-based courses were designed to emphasize interdisciplinary learning motivated by societal issues and problems.

The four currently available themes and courses within each theme are given in Appendix 9. The courses that will be offered by University Studies in the fall of 2007 are highlighted in bold in this appendix. The vast majority of the theme-based cluster courses are not offered by the division of University Studies (only 23 of 77 are UNST courses.) In fall 2007, we will only be offering UNST 207, 208, 209, 212, 216, and 221. For organization reasons, the division will have the most control over these courses, and therefore the most influence over the collection of data that will allow us to assess student learning.

The non-University Studies theme courses that will be offered in the fall of 2007 are listed in Appendix 9.1. These courses were accepted for inclusion in the theme clusters on the promise that they would address a subset of the learning objectives specified for the University Studies curriculum. During the fall 2005, programs submitted documentation to the faculty roundtable concerning any course they wished to be included in a theme cluster. The documentation included a form that described the broad University Studies themes that were to be covered in the course (see appendix 9.2). The form did not ask for specific learning objectives from the University Studies list that would be covered in the course. Appendix 9.2 shows that few of the general themes were actually reported to the faculty roundtable in the fall 2005. Therefore the first step toward evaluating the impact of each cluster will be to determine which UNST learning objectives each of its courses addresses, and how that specific course will assess the student learning around those learning objectives. Beginning in the summer of 2007, the division will begin contacting the departments offering these courses to get both a report of which of the general themes the course actually addresses and how the course will assess student learning concerning these objectives. We shall also make a request that the assessment data be forwarded to the division for inclusion in our analysis at the end of each semester the course is offered.

Assessment of the University Studies theme cluster courses will be easier to handle logistically. In fall 2007, these courses will be delivered by faculty members who are all members of the division. These faculty will utilize both the course delivery and assessment techniques that have been agreed upon within the division. We will be able to use pre-tests to assess student base line knowledge and thinking at the onset of the courses. We will utilize class room response technology to gather formative assessments across classes. UNST 221 Thematic Writing and Speaking will utilize assessment techniques similar to those used in UNST 110 Critical Writing. In this way, we will be able to compare student learning in our foundation

courses, with that which we observe in the individual theme cluster classes.

### **Senior Capstone Courses**

These courses are major-specified. Their purpose in the University Studies curriculum is to demonstrate the relationship between the broad University Studies learning objectives and the student's major. This is not necessarily the purpose for which these courses were originally designed. For example, the senior capstone course varies considerably in form. Appendix 10 lists the senior capstone courses for the School of Agriculture and Environmental Science as well as the College of Arts and Sciences. The course descriptions show that the capstones courses fall into five categories: senior projects, independent study, seminars, internships, and student teaching. Many of these capstone courses are constrained by accreditation requirements, such as student teaching.

Thus under present circumstances it will be difficult to assess the impact of these courses relative to the University Studies curriculum or of the impact of the University Studies curriculum on these courses. The first students under the University Studies curriculum who will be eligible for senior capstone courses will appear in 2010. Between now and that time it will be imperative to begin gathering data with regard to how University Studies learning objectives will be treated in the major-specified senior capstones. In addition, the Division will need to develop a means of ensuring that data from the assessment of these learning objectives is collected and submitted to us for analysis relative to the general education curriculum.

### **Service learning**

The UNST curriculum requires 50 hours of service learning between freshman year and before the senior capstone project. The volunteer service component of the University Studies curriculum is designed to allow students to connect theoretical perspectives from a wide range of disciplines in real world circumstances. Service learning allows civic engagement and social responsibility to be infused into the undergraduate curriculum and creates intentional learning environments where students can apply their academic knowledge to real world situations. It also explicitly expresses the university's commitment to preparing students for a lifelong commitment to service. It highlights the historical connection between the university, its local community, North Carolina, the nation and the world.

The volunteer service component of the University Studies curriculum is designed to allow students to connect theoretical perspectives from a wide range of disciplines in real world circumstances. Service learning specifically addresses (although should not be limited to) UNST learning objectives 10 and 17:

10. Interact effectively with people from diverse cultures.

17. Recognize behaviors that place individuals, families and communities at risk.

Our present plan has Student Affairs monitoring the volunteer hours, while UNST faculty shall keep track of the academic component of the service. Student Affairs has appointed a staff

person, Lee Morgan, to oversee service learning. Student service learning opportunities are being coordinated through the Civic and Service Education Program (C.A.S.E.) via partnerships established with outside agencies. These opportunities are listed in Appendix 11.

During academic year 2006-07 little has been done to integrate the service learning activities with the University Studies curriculum. Thus a primary task during academic year 2007-08 will be to develop means of integrating and developing new service learning activities that can be tied to specific learning objectives. Once this has been accomplished we will be able to assess the degree to which service learning is reinforcing the learning objectives.

### **Sum Greater than the Parts: Overall Assessment of the University Studies Curriculum**

The preceding discussion has focused on the assessment of individual components of the University Studies curriculum. However, University Studies was designed to work via the interaction of its component parts, as well as its interaction with the rest of the curriculum. Dr. Derek Bok describes the importance of viewing all general education curricula with regard to this latter concern:

“A fourth problem in most debates on the curriculum is a tendency to spend almost the time discussing the general education program, even though that program normally makes up only one-third or slightly more of the courses students take...

Derek Bok, *Our Underachieving Colleges*, Chapter 2: Faculty Attitudes Toward Undergraduate Education, pg. 32, 2006.

Dr. Bok suggests here that the reform of undergraduate education must be comprehensive. This means that the learning objectives for undergraduate education must be fully incorporated as well as assessed across the entire curriculum. This view is also shared by others, (e.g. Leskes and Wright 2005; Greater Expectations 2004; Ewell 2004; Ratcliff, Johnson, and Gaff, 2004; Gaff 1999; Scheider and Schoenberg 1998.) Presently, there is little evidence that systematic and comprehensive assessment of learning is being carried out across majors at NCATSU. In this context, a straight forward evaluation of the general education program at NCATSU will be difficult. Especially since there will be little data from other curricula (majors) by which we can compare the efficacy of the learning in University Studies. For example, student evaluations of teaching cannot be used for this purpose. Students evaluate professors and courses in a variety of ways that do not accurately reflect learning (Greenwald, A., and Gillmore. G. 1998; Abrami, P.C., d'Apollonia, S. & Cohen, P.A. , 1990; Cashin, W. 1990; Feldman, Kenneth A. 1978 and others.) Furthermore, student grades in courses do not always reflect learning, particularly in a culture where faculty understand that student evaluations of them are influenced by the grades they award (Adams 1997; March and Roche 1997.)

Clearly, we as a campus must move in the direction of systematic assessment of student learning. One approach would be to implement measures of student learning that are subject to bias by either professors or students. Standardized tests generated from outside agencies are one way to accomplish this. It may be fortuitous that we are currently participating in a national Collegiate Learning Assessment (CLA). The CLA is a test designed to examine critical thinking

skills. This is a longitudinal study that will track and measure learning gains in analytical reasoning, critical thinking, and writing from a sample of freshman students taken over three years. The first cohort of freshman was tested in the fall 2006 before they completed the University Studies foundation courses. They are scheduled to be tested again in fall 2007 (as sophomores.) The first CLA results demonstrated that our students CLA scores were consistent with their average SAT scores. Thus one indication of the effectiveness of University Studies might be whether the cohort tested as sophomores, has improved their scores so that they are higher than predicted by their average SAT scores. However, even this result could be questioned, since students might have improved their scores solely due to being one year more mature than they were in fall 2006. Despite the problems of interpretation, standardized testing could give of some indication of improvement in critical thinking skills, particularly if it were administered in a more regular fashion than we will be allowed to with the CLA agreement.

Another way of attempting to gather data on our student's critical thinking ability might be to use the Measure of Academic Proficiency and Progress test offered by Educational Testing Service. The Measure of Academic Proficiency and Progress (MAPP™) is an integrated, general education) assessment designed to evaluate student achievement in critical thinking, reading, writing, and mathematics. MAPP measures four general education skills (critical thinking, reading, writing, and mathematics) in one integrated test. A full description of the test can be found at [www.ets.org/mapp](http://www.ets.org/mapp). There is now an on-line version of MAPP that can be administered and it is claimed to be equivalent to the proctored test.

MAPP can be purchased for about \$4,650.00 for 300 tests. A sample of 150 students would be tested in the fall and spring. We would want to test the same students to determine if their critical thinking skills have improved due to their University Studies coursework. At this sample size, we would need to see an improvement of at least 10 percentage points in their score to provide evidence that the curriculum has improved their critical thinking skills. Obviously, if we increase the sample of students tested, the burden of proof in percentage point improvement would decline. Thus, we will purchase MAPP tests this fall and organize testing of students early in the fall semester. The goal would be to test them again at the end of the spring semester.

In addition to MAPP, ETS also offers major field assessment tests ([www.ets.org/mft](http://www.ets.org/mft).) These include areas such as Biology, Business, Chemistry, Computer Science, Criminal Justice, Economics, Mathematics, Physics, Political Science, and Sociology. This test includes subject matter knowledge and critical thinking skills in the discipline. We would get a better sense of how our undergraduate education program as a whole was operating if we instituted both general education, as well as major field testing. This would also allow us to compare the efficacy of the University Studies programs to other programs on the campus. For example, if University Studies was improving the learning of students at a rate of 7%, but all other majors were improving the student learning at a rate of 5%, then we would consider University Studies over performing relative to general instruction on the campus. If vice versa, then the program would be underperforming. Either way, any meaningful evaluation of the program would require that other programs on the campus be examined using the same standard.

ETS provides the option of allowing us to compare the results of our students with peer institutions. This will be useful information which will give us the ability to determine what sorts of changes we may need to make to remain competitive with our peers. Given the general

important of this sort of evaluation, this needs to be implemented as a campus-wide priority. This would mean that funding for this sort of assessment needs to be made available, and a unit should be made responsible for insuring its proper implementation (such as Institutional Research.) In addition to generalized testing, other forms of assessment are available. These include the development of portfolios. University Studies hasn't done enough research on either the technique or the technology of portfolio assessment. This will be investigated in the fall of 2007.

### **Conclusion: Intentional Assessment**

From its onset, University Studies has been intentional concerning the assessment of student learning. In the fall 2007, we will continue this process. Assessment will be carried on at the level of individual assignments within courses, courses as a whole, foundation level, theme-based clusters, and service learning. We will begin the process of determining how to best assess what will be offered in major-specified senior capstone courses.

In addition, we see the assessment of the University Studies program as important scholarship. Teams of faculty will begin to develop fundable research programs in scholarship of teaching and learning. Given the bold character of this curriculum reform, it has the potential to make important contributions to how students learn at the undergraduate level. We will be engaged in gathering this data, interpreting it, and reporting it at the national and international level.



## **Appendix 1. University Studies Learning Objectives**

### Communication

- 1) Effectively use information technology to find, interpret, evaluate, and use information discerningly.
- 2) Effectively communicate in diverse settings and groups using written, oral, and visual means.
- 3) Effectively employ critical thinking skills in written and oral communication.
- 4) Effectively relate ideas and concepts, as well as modes of inquiry, across disciplines.

### Analytical Reasoning

- 5) Use analytical thinking skills to evaluate information critically.
- 6) Apply multiple modes of inquiry, including quantitative and qualitative analysis, to formulate, describe, evaluate, and solve problems.

### Application of Scientific Method

- 7) Apply scientific reasoning skills to model natural, physical, social, and aesthetic phenomena using multiple modes of inquiry.
- 8) Use a wide range of disparate information and knowledge to draw inferences, test hypotheses, and make decisions.

### Multicultural Relations Within a Global Society

- 9) Understand African/African American culture and traditions, including political, economic, and social challenges affecting people of African descent.
- 10) Interact effectively with people from diverse cultures.
- 11) Understand and appreciate the diversity and interrelationship of cultures locally, regionally, nationally, and internationally.

### Historical and Social Processes in a Changing World

- 12) Understand the role of social, political, and economic institutions and processes in the development of societies and the factors that lead to dynamic change in societies over time.

### Artistic and Literary Understanding

- 13) Understand the role of literature, music, and the fine arts in describing, defining, and celebrating the human condition in diverse world cultures.

### Ethics and Social Responsibility

- 14) Understand and apply ethical reasoning principles to resolve moral, social, and professional issues.
- 15) Understand the role that markets, governments, and other social institutions can play in reducing social and economic inequality.

### Health, Lifestyles, and Behavior

- 16) Understand and promote principles of wellness that include nutrition, exercise, avoidance of mind-altering chemicals, development of healthy relationships, and personal growth.
- 17) Recognize behaviors that place individuals, families, and communities at risk.

**Appendix 2.**  
**Rubric on Significance of**  
**College**

Teacher Name:

Student Name: \_\_\_\_\_

CATEGORY	4	3	2	1
Reasons for attending college	This student fully understands why they should attend college.	This student has a good understanding of why they should attend college.	This student has a fair understanding of why they should attend college.	This student has a weak understanding of why they should attend college.
Benefiting from Resources and Services	This student fully understands how to utilize resources and services to achieve college success.	This student has a good understanding of how to utilize resources and services.	This student has a fair understanding of how to utilize resources and services.	This student has a weak understanding of how to utilize resources and services.
Financial Aid	This student fully understands the financial aid options that are available to them to pursue their college career.	This student has a good understanding of the financial aid options that are available to them.	This student has a fair understanding of the financial aid options available to them.	This student has a weak understanding of financial aid options available to them.
Balancing school, work, family, and friends.	This student fully understands strategies for balancing competing demands with their college education.	This student has a good understanding of strategies for balancing competing demands.	This student has a fair understanding of strategies for balancing competing demands.	This student has a weak understanding of strategies for balancing competing demands.

### Appendix 3 – UNST 110 Grades for Students Enrolled in UNST 103

#### Grade

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	31	15.8	23.1	23.1
	1.00	13	6.6	9.7	32.8
	2.00	46	23.5	34.3	67.2
	3.00	35	17.9	26.1	93.3
	4.00	9	4.6	6.7	100.0
	Total	134	68.4	100.0	
Missing	System	62	31.6		
Total		196	100.0		

This chart shows spring 2007 grades in UNST 110 for students enrolled in UNST 103 in fall 2006.

## Appendix 4.0 Criterion Writing Assessment

Question: Many adults become upset when young people break with the traditions of the past. Do you think that these adults are justified in reacting this way? Why or why not? Support your position with evidence from your own experience or the experience of people you know.

Student response – scored 2.

Adults should not be upset if traditions are broken by young people. For one, they may have got tired of the old tradition and wanted to try something new, or may not like the past tradition.

First of all adults shouldn't be angry with young people for the fact that they would love to try new things instead of only old traditions. For instance, your family goes on a trip to the beach every year, but after a while they probably would like doing something different. There are so many things that are even better from what they were in the past. But the older people are use to what their traditions are that's how they would like for it to continue.

Next young people may not enjoy the old tradition, and this could also lead to a problem with adults. Because some adults are stuck in their ways. The younger ones would be doing things of their traditions and not the adults and they sometimes don't like that.

Everyone's not going to want the same thing and that could be because of their age or how they grew up. Some people are not going to agree with what you like because everyone's different.

Student response – scored 3

Traditions are past times passed down from generation to generation. Over the years the traditions are sometimes altered or maybe even forgotten. I believe adults are not justified in becoming upset when young people break traditions of the past because as times change, people and traditions do too.

It would be wonderful if traditions lasted forever and things always stayed the same, however this is certainly not the case. Traditions sometimes get boring and fade away after a period of time. For example, before my grandmother died, my family ate dinner at her house every Sunday after church. This tradition was passed down from my great grandmother to my grandmother, and stayed in the family during my great grandmother's childhood. However, now that my grandmother has died, the tradition has died along with her. We no longer eat together as one big family on Sunday's, instead we will always remember her as the grandmother who cooked for everyone on Sunday's. I'm sure my grandmother would not get upset if she knew her tradition did not live on because she knows everyone is not that great a cook. She cooked every Sunday because she enjoyed cooking, and that is not the case for everyone. People change and traditions do too.

There are very few traditions, if any, that have lasted from generation to generation. Not everyone has the same interests, causing traditions to die out. The blame cannot be placed on the

youth by adults, because changes are a way of life. It would be unfair for adults to become angry when the youth break traditions, because nothing in the world stays the same.

**Criterion**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	5	.5	.5	.5
	1.00	5	.5	.5	1.1
	2.00	177	17.6	18.9	20.0
	3.00	464	46.3	49.6	69.6
	4.00	227	22.6	24.3	93.9
	5.00	52	5.2	5.6	99.5
	6.00	5	.5	.5	100.0
	Total	935	93.2	100.0	
Missing System		68	6.8		
Total		1003	100.0		

**Correlations**

		Criterion	VerbSAT
Criterion	Pearson Correlation	1	.047
	Sig. (2-tailed)		.147
	N	935	935
VerbSAT	Pearson Correlation	.047	1
	Sig. (2-tailed)	.147	
	N	935	935

**Correlations**

		Grade	VerbSAT
Grade	Pearson Correlation	1	.034
	Sig. (2-tailed)		.302
	N	935	935
VerbSAT	Pearson Correlation	.034	1
	Sig. (2-tailed)	.302	
	N	935	935

**Correlations**

		Criterion	Grade
Criterion	Pearson Correlation	1	.137(**)
	Sig. (2-tailed)		.000
	N	935	935
Grade	Pearson Correlation	.137(**)	1
	Sig. (2-tailed)	.000	
	N	935	935

\*\* Correlation is significant at the 0.01 level (2-tailed).

## Appendix 4.1 Assignments, Activities, and Assessments in Critical Writing

Cluster	Assignment	Activities	Assessments	Learning Domain/Critical Thinking Skill
<b>Weeks 1-2</b>	Diagnostic Essay	Describe an artifact		Knowledge
	Narrative/Description	Interview	Ask students to cooperate with others	Observation
		Event Review	Weekly reports	(describe, identify, define)
	(Introduce Portfolio)	(Collaboration)	Image analysis	
			Concept Mapping	
			Reflection	
			Annotate Draft	
			Minute Papers	
			Muddiest Question	
			Oral Response	
<b>Weeks 3-4</b>	Learning Skills	Summarize	captioning	Comprehension
		Paraphrase	Double entry journal	Experience
		Note-taking /Outlining	Typed notes	(summarize, interpret, associate)
		Critical Reading	Reading quizzes	
		Plagiarism/ Documentation	Scavenger hunt	
		Vocabulary Acquisition	Explication exercise where students show they Comprehend mature vocabulary, Understand, and integrates literal and figurative meanings of a text	
		Visual Literacy	Photograph syntax	
		Using Technology	Power point presentation	
		Speaking Skills	Mini presentations	
		Group Work	Group project assignments	
<b>Weeks 5-8</b>	Analytic Essay	Introduce Course Theme	Analyze and interpret	Analysis
	Oral Presentation/ Collaboration	Shaping Argument	Present issues that give students opportunity to argue	Reasoning
		Frame Productive Questions		(demonstrate, solve, apply)
		Access Information		
		Evaluate Information /Sources		

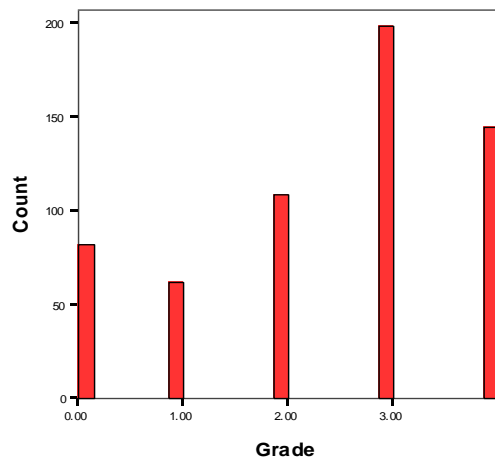
		Consider All Points of View		
		Reinforce Interdisciplinarity	Assign work that considers approaches across disciplines	
		Logos, Pathos, Ethos	Written and oral exercises for students to practice the use of the 3 modes	
		Induction/Deduction	Have students identify reasoning modes from texts	
		Logical Fallacies	Have students identify fallacies in selected arguments	
		Group Work		
		Integrating Technology		
		Library Visit		
<b>Weeks 10-13</b>	Researched Argument	Generate Research Questions	Have students demonstrate their ability to formulate effective questions through in class exercises	Synthesis
		Developing a Claim/Support	Have students identify issues, and then ask them to write supportable claims.	Reflection
		Exploring/Gathering Sources		(generalize, integrate, recommend)
		Synthesize Ideas w/ Source Material	Have students select articles on class theme and synthesize the information	

## Appendix 4.2 Summative Assessments for Critical Writing

### Sample Grades Critical Writing Fall 06

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	82	13.7	13.7	13.7
	1.00	62	10.4	10.4	24.1
	2.00	109	18.3	18.3	42.4
	3.00	199	33.3	33.3	75.7
	4.00	145	24.3	24.3	100.0
	Total	597	100.0	100.0	

### Frequency Distribution for Critical Writing Grade Sample – Fall 2006



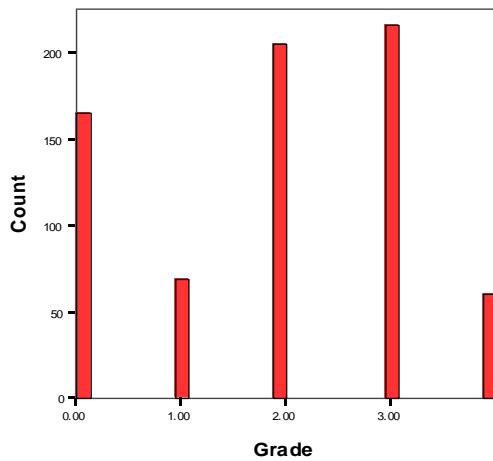
### Mean score for Critical Writing Grade Sample – Fall 2006

	N	Minimum	Maximum	Mean	Std. Deviation
Grade	597	.00	4.00	2.4405	1.32929
Valid N (listwise)	597				



**Sample Grades Critical Writing Spring 2007**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	166	23.1	23.1	23.1
	1.00	69	9.6	9.6	32.7
	2.00	206	28.7	28.7	61.3
	3.00	217	30.2	30.2	91.5
	4.00	61	8.5	8.5	100.0
	Total	719	100.0	100.0	



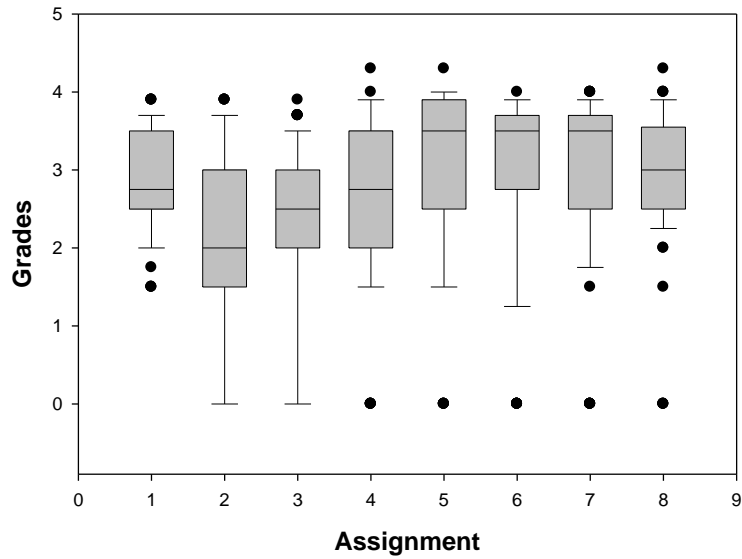
**Frequency of Grades Critical Writing, Spring 2007**

**Mean Grade Critical Writing Spring 2007**

	N	Minimum	Maximum	Mean	Std. Deviation
Grade	719	.00	4.00	1.9138	1.28666
Valid N (listwise)	719				

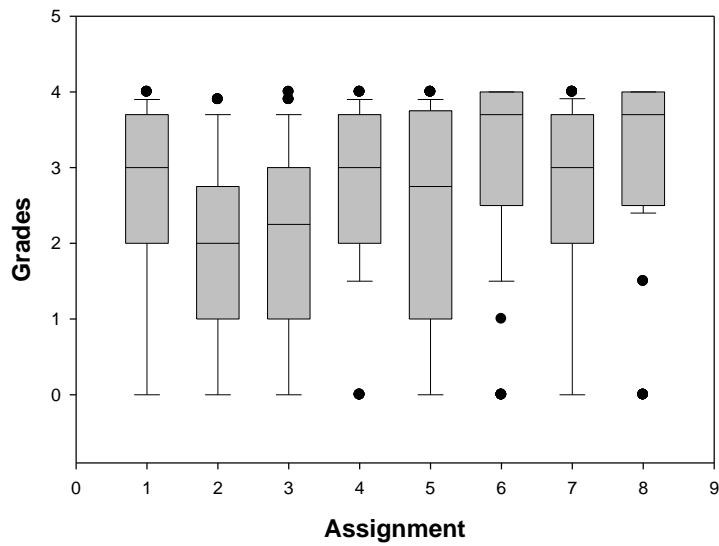
## Appendix 5. Critical Writing Assessments – Spring 2007

Critical Writing Grades  
Instructor - N. Hannon  
Spring 2007



### Ruth Omunda

Critical Writing Grades  
Instructor - R. Omunda  
Spring 2007



## **Appendix 6: Contemporary World Syllabus**

### **Required Text**

Your text for the course is a soft cover publication titled *The Contemporary World: University Studies 120 for North Carolina A&T*. The cover has a photo of the “February One (1960)” monument to the A&T Four.

### **PRAXIS competencies**

#### **World History Questions**

- Nationalism and Imperialism in Europe, the Americas, Africa, and Asia
- Twentieth Century
- Current Trends

#### **Geography Questions**

- Physical Geography
- Regional Geography

### **Blackboard: The Course Website**

Learning to use Blackboard technology skillfully is an important objective for this course. To insure success, students must develop a level of basic mastery of its e-learning component. Students must be personally responsible for accessing and using Blackboard.

**Accessing Blackboard:** All of the assignments and assessments of student learning in this course will be done electronically using Blackboard. It is absolutely imperative that you establish access to Blackboard at the start of the semester. You must first get your PIN from your advisor and create an Aggie Email account to access Blackboard the first time. You will then use the first part of your email log-in and PIN to get into the Blackboard site for your particular course and section. Check this site daily for new information.

**Using Blackboard:** Use these parts of the course website to:

- Read and consult the syllabus = Syllabus
- Check for daily/weekly announcements from instructors = Announcements
- Take the online quizzes = Course Information
- Check your quiz and exam scores = Grade book
- View the lists of key terms = Course Documents
- Investigate issues = External Links
- Discuss issues = Discussion Board

**Taking the Online Quizzes:** Follow these steps to avoid problems

- When taking the online quizzes, try whenever possible to log-in from one of the on-campus computer labs or Bluford Library, which has wireless laptops and numerous computer stations available. This will help you avoid network problems.
- Go to Course Information to locate the links to the quizzes. Once you begin a quiz you cannot open a new browser window to search for information.

Doing so will cause the quiz to crash and you may get “locked-out” of the quiz. Also do not hit the Save button. Simply input your answers and when you are ready to turn it in hit the Submit button.

- If you have a technical problem during a quiz you will see a small lock icon where you would normally see your quiz score (in the online grade book). Your instructors can reset your account so that you can re-take the quiz. Pay attention to your instructors’ in-class and Blackboard announcements on the days before and during the quizzes.
- You will have four days to take each quiz. If a student does not attempt a quiz within its window of availability that student will not be allowed to make it up. There are no make-up quizzes or exams in this course except under extraordinary circumstances (which require written documentation).

### **A&T Email and Blackboard Issues**

- Aggie Help Desk = (336) 334-7195 (basement of Bluford Library)
- For Aggie Email Accounts go to <http://www.ncat.edu/accounts/request.php>

### **Quizzes, the Final Exam, and Final Course Grades**

- Final course grades will be determined by a point system and grading scale
- Each student can earn up to 175 points by adding up their five quiz scores and their final exam score
- There will be a total of five quizzes given during the semester.
- Students are required to take all quizzes. See the Course Schedule for specific days and times.
- Quizzes will be available on Blackboard for a period of four days – after that the link to that quiz will not work - instructors will provide additional instructions on taking the online quizzes in class during the semester (and always watch for last-minute Announcements on Blackboard). See also “Taking the Online Quizzes” on pg. 4 above.
- The final exam will be given during final exams week. See the Course Schedule for specific days and times.
- The final exam will be a cumulative exam – it will build upon the material covered in the previous quizzes.

### **Point System**

5 Quizzes = 125 points (25 points each)

Final Exam = 50 points

Total points = 175

### **Grading Scale**

A = 157-175 points

B = 140-156

C = 122-139

D = 105-121

F = 104 and below

**Schedule of Readings:** See the Course Schedule for the specific weekly reading assignments in the custom textbook. It is imperative that students keep up with the reading to be successful in this course. The quizzes and the final exam will include material covered in the textbook that may not be covered elsewhere.

**Lists of Key Terms:** At the end of each unit, students are encouraged to use the lists of key terms to review and prepare for the quizzes. Make sure you can identify each term (or pair of terms) and its relationship to the major themes of the course. The lists should also help students stay focused on the main points when they take notes on the readings (strongly recommended).

**Bibliography:** At the end of every chapter in your custom textbook are several useful tools. These include suggestions for further reading and searching the web, as well as standard bibliographies. Students wishing to explore any of the subjects covered in the course in greater depth are strongly encouraged to use these tools. Also check the External Links section of the course website for selected links on modern and contemporary world history.

### **Course Outline (subject to minor changes)**

***Introduction to the Course:*** comments by faculty team, going over the syllabus, explaining University Studies

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#### ***What is the Contemporary World?***

**Instructor: Dr. Roberto**

Topics: Defining the Contemporary World; Facts and Figures; Historical and Political Concepts; Overview of the Long 20<sup>th</sup> Century

Reading: “International Contact and Conflicts, 1914 – 1999”

**MLK Day, Monday 1/16, No Classes**

**QUIZ #1:**

---

#### ***Europe and Russia***

**Instructor: Dr. Porter**

Topics: Geography and Population; Apex of European Imperialism; the First World War; the Russian Revolution and the USSR; The Great Depression, the Rise of Fascism; the Second World War; the Holocaust; Postwar Germany and Europe, Stalinism; Cold War Crises in Europe, Nuclear Arms Race; the Revolutions of 1989; Collapse of the Soviet Union; European Union

Reading: “Russia and Eastern Europe;” plus review “International Contacts and Conflicts, 1914 – 1999”

**QUIZ #2:**

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## *China and India*

**Instructor: Dr. Zhang**

Topics: Geography and Population; European Imperialism in Asia; India's Struggle for Independence; India since Independence; The Chinese Revolution of 1911; WWII in East Asia; the Chinese Revolution of 1949; China under Communism; China since the Cold War

Reading: "China and India, 1914 – 2000"

### **QUIZ #3:**

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## *The Americas*

**Instructor: Dr. Wood**

Topics: Geography and Population; Political Independence and Neocolonialism; US Interventions in Latin America; Mexican Revolution; Populism and Socialism; Cuban Revolution; Cold War and Military Rule; Latin America since the Cold War

Reading: "Latin America: Revolution and Reaction in the 20<sup>th</sup> Century"

### **QUIZ #4:**

---

## The Middle East & North Africa

*Instructor:*

Topics: Geography and Population; WWI and the Collapse of the Ottoman Empire; the Creation of Israel and the Arab-Israeli Conflict; Oil in the Middle East; Iranian Revolution; the Persian Gulf Wars

Reading: "The Middle East and North Africa, 1880s – 2000"

### **QUIZ #5:**

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## *Sub-Saharan Africa*

**Instructor:**

Topics: Geography and Population; Africa under European Imperial Rule; Movements for Independence; the Process of Decolonization; Rise and Fall of *Apartheid* in South Africa; the Problems of Postcolonialism

Reading: "Sub-Saharan Africa, 1914 – 2000"

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## *Summing Up: The Past in the Present*

**All Faculty**

What knowledge-based information have we learned?

What learning methods have we learned?

What skills have we developed?

How have our views of the contemporary world changed?

How can we go further with our study of the contemporary world?

Final Reading: “Globalization and Resistance: World History 1990-2003”

**FINAL EXAM:**

## Appendix 6.1: Student Grade Distribution Contemporary World

### Fall 2006

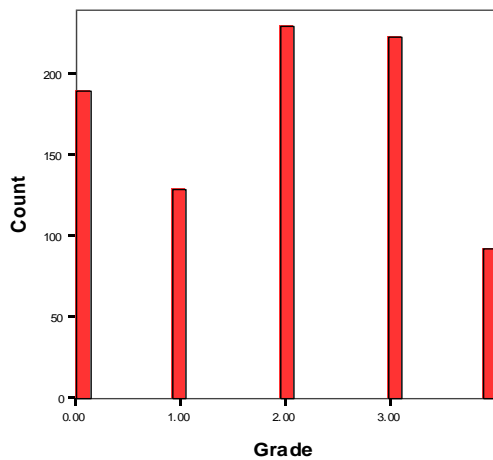
Grade	120-01	120-02	120-03	120-04	Total %
A	28	39	50	31	12.8
B	119	123	134	99	41.1%
C	91	75	64	68	25.8%
D	28	16	17	35	8.3%
F	37	28	27	45	11.8%
	303	282	292	278	

Mean Grade Fall 2006 = 2.34

### Spring 2007

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	190	21.9	22.0	22.0
	1.00	129	14.9	14.9	36.9
	2.00	230	26.6	26.6	63.5
	3.00	223	25.8	25.8	89.2
	4.00	93	10.7	10.8	100.0
	Total	865	99.9	100.0	
Missing	System	1	.1		
Total		866	100.0		

### Frequency of Grades Spring 2007



### Mean Grade Spring 2007

	N	Minimum	Maximum	Mean	Std. Deviation
Grade	865	.00	4.00	1.8844	1.30545
Valid N (listwise)	865				



## **Appendix 6.2 – Pre-Test Questions for Contemporary World.**

### Proposed specific learning objectives:

1. Students will define major historical, political, scientific, economic, and social themes in the contemporary world from the 20th century to the present.
2. Students will describe the fundamental historical and cultural patterns in the contemporary world from the 20th century to the present.
3. Students will explain the historical and political context of current world events and issues.
4. Students will demonstrate a basic understanding of world geography.
5. Students will develop analytical and critical thinking skills.
6. Students will develop effective writing and oral communication skills

### **Questions concerning knowledge and critical thinking about world population.**

1. What is the most reliable estimate of the world population in 2006?
  - a. 302 million
  - b. 1.5 billion
  - c. 0.9 billion
  - d. 6.6 billion
  - e. 13.2 billion

This question tests a student's knowledge of world population figures. The correct answer is response d. Response a is the population of the United States, response b is the population of the People's Republic of China, response c is the population of India, and response e is what world population will be by 2040.

2. In the year 2006, on what continent do most of the world's people live?
  - a. Africa
  - b. Asia
  - c. Europe
  - d. North America
  - e. South America
3. In the year 2006, which of these continents has the least amount of people?
  - a. Africa
  - b. Asia
  - c. Europe
  - d. North America
  - e. South America

These two questions tests a student's knowledge of the distribution of world population. The correct answers are 2. Asia and 3. South America.

4. How long will it be before the present world's population doubles?
- a. 1,000 years
  - b. 500 years
  - c. 100 years
  - d. 40 years
  - e. 10 years

This question addresses whether a student has an understanding of the urgency of human population growth. The correct answer is d, 40 years.

5. Which country would be expected to exhibit the fastest population growth of the countries listed in this table?

Country	Birth rate/1000	Death rate/1000
Cameroon	36.60	11.89
China	16.12	6.73
Canada	11.34	7.39
Chile	17.19	5.52
Croatia	12.82	11.51

6. Which country would be expected to exhibit the slowest population growth of the countries listed in the table above?

This question tests whether students can think critically about population growth. To answer the question they must reason that population growth will be influenced by the difference between the birth and death rates. Thus, in question 5 they would conclude that the population of Cameroon has the highest growth rate  $(36.60 - 11.89)/1000 = 0.0241$  and Croatia has the lowest at  $(12.82 - 11.51)/1000 = 0.0013$ .

## Appendix 7. Syllabus of Analytical Reasoning

### OVERVIEW

This course is interdisciplinary. It will utilize subject matter from a variety of academic disciplines, to introduce students to critical thinking. We will emphasize logical, quantitative and scientific reasoning. The pedagogical approach utilized in this course introduces students to how critical thinking is accomplished for any specific discipline as well as for interdisciplinary problems. **It has five learning objectives:**

1. Students will learn the basic concepts of probability, estimation, data collection, recognition of erroneous data, and understand their importance in solving problems.
2. Students will use mathematical, scientific, and technological tools to analyze information and make informed decisions.
3. Students will develop critical, logical, and analytical thinking skills in order to evaluate data and formulate reasonable conclusions.
4. Students will use the scientific method and formulate questions that will enable one to logically define, test, and ultimately solve a variety of problems.
5. Finally, students will utilize the above tools to analyze and evaluate news reports and statistical studies.

### REQUIRED TEXTS:

1. Brooke Noel Moore and Richard Parker, *Critical Thinking* 8<sup>th</sup> Edition, McGraw Hill, 2007.
2. Jeffrey O. Bennett and William L. Briggs, *Essentials of Using and Understanding Mathematics: A Quantitative Reasoning Approach*, Addison-Wesley, 2003

### PREREQUISITES

There are no prerequisites for this class, other than an inquisitive mind. Students should be warned that analytical reasoning does require use of mathematical and statistical tools. We will present all the mathematics required to comprehend all of the topics addressed in the course.

### GRADING

The summative evaluation will consist of: homework and quizzes [20%]; writing assignments [10%]; in class examinations [20%]; mid-term examination [25%]; and a final examination [25%]. All grades are determined by your earned point totals. No other factors will be considered when determining your final grade. Anyone asking for special grading consideration will be referred to this policy.

### PAPER GRADES:

There will be writing assignments. A common student misconception is that everyone starts with full points and is marked down for errors or deficiencies. Papers that meet the standard requirements are C papers (75% of total points). Papers with errors or that leave out major arguments or objections are graded down from there. Papers that exceed the standard requirements and are superior to the average paper will receive a B. Only papers that are error free, meet all requirements, and demonstrate outstanding work for this course will receive an A.

*Analytical Reasoning*  
*University Studies 130*

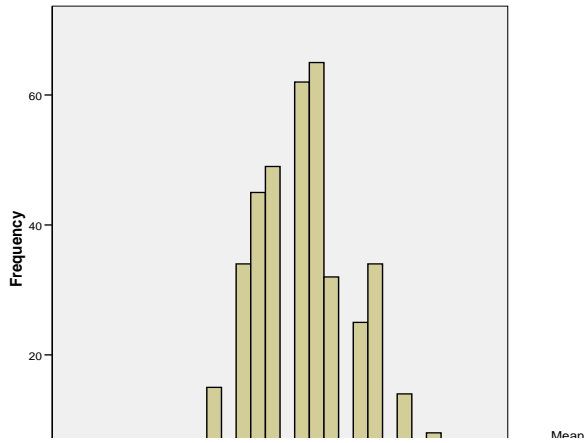
Section	Dates	Outline of Topics to be Covered	Readings
<b>ONE</b>		<b><i>What is Critical Thinking?</i></b>	
	August 21-25	<i>Introduction</i>	Chapter 1(Moore & Parker)
	Aug. 28-September 1	<i>Sharpening Our Tools: The Basics of Arguments</i>	Chapter 7,8 (Moore & Parker)
	September 4-8	<i>Credibility</i>	Chapter 3 (Moore & Parker)
	September 11-15	<i>Analysis: The Heart of Critical Thinking</i>	Adolph Reed, "Classifying the Hurricane"; Five Perspectives on Malcolm X Assassination
	September 18-22	<b><i>Examination #1</i></b>	
	September 25-29	<i>Thinking Critically: Steering Clear of Argumentative Quicksand</i>	Chapter 4 (Moore & Parker)
<b>TWO</b>		<b><u>Quantitative Reasoning</u></b>	
	October 2-6	<i>Numbers in the Real World</i> <b>Midterm Examination</b>	Units #3A, 3B (Bennett & Briggs)
	October 9-14	<i>Causal Reasoning.</i>	Chapter 11 (Moore & Parker)
	October 16-20	<i>Statistical Reasoning, Part 1</i>	Units #5A, 5B (Bennett & Briggs)
	October 23-27	<i>Statistical Reasoning, Part 2</i>	Units #5C, 5D, 5E (Bennett & Briggs)
	October 30-November 3	<b><i>Examination # 2</i></b>	
	November 6-10	<i>Probability: Living with the Odds.</i>	Units #7A, 7B (Bennett & Briggs)
<b>THREE</b>		<b><u>Scientific Reasoning</u></b>	
	November 13-17	<i>Introduction to Scientific Thinking and Scientific Method.</i>	TBA
	November 20-24	<i>Scientific Method</i>	TBA
	November 27-December 1	<i>Creationism, Evolution and the Criteria of Adequacy</i>	TBA
	December 5	Classes End	
	December 6	Reading Day	
	December 7-13	<b>Final Examination Week</b>	

**University Studies 130 - Analytical Reasoning**  
**Homework assignments**

<b>Week</b>	<b>Topic</b>	<b>Assignment</b>
August 21-25	What is Critical Thinking?	Ex. 1-3 (#2, 3, 5, 6, 7, 9, 10) Ex. 1-4 (#2,6,8,12, 14) Ex. 1-5 (#2, 5, 6, 7, 8) (Moore & Parker)
Aug. 28-September 1	Sharpening Our Tools: The Basics of Arguments	Ex. 7-2 (#2, 3, 5, 6, 8, 9) Ex. 7-3 (#2, 3, 5, 6, 8, 9) Ex. 7-10 (#2, 3, 5, 6, 9) Ex. 8-1 (#2, 3, 5, 6, 8) Ex. 8-3 (# 2, 3, 5, 6, 7) Ex. 8-4 (#2, 3, 5, 6, 8) (Moore & Parker)
September 4-8	Credibility	Ex. 3-9 (#4, 5) Ex. 3-10 (#2) (Moore & Parker)
September 11-15	Analysis: The Heart of Critical Thinking	TBA
September 18-22	<b>Examination #1</b>	No Homework
September 25-29	Thinking Critically: Steering Clear of Argumentative Quicksand  Numbers in the Real World	Ex. 4.1 (#1, 3, 5, 6, 8, 9, 11, 13, 14, 16, 17) (Moore & Parker)  Unit 3A 17-22 & 45-50 Unit 3 B 15-20 (Bennett & Briggs)
October 2-6	<b>Midterm Examination</b>	No Homework
October 9-14	Causal Arguments	Exercises 11-2 # 2, 8 11-4 #2,8 and 11-9 #3, 9 (Moore & Parker)
October 16-20	Statistical Reasoning, Part 1	Unit 5A 15-17 & 21-23 &35-38 Unit 5B 9-11 (Bennett & Briggs)
October 23-27	Statistical Reasoning, Part 2	Unit 5C- 15-16 Unit 5D- 14 Unit 5E- 13-15; 17-20 (Bennett & Briggs)
October 30-November 3	<b>Examination #2</b>	No Homework
November 6-10	Probability: Living with the Odds	7A-13-15& 23 7B- 11-15 & 22-26 (Bennett & Briggs)
November 13-17	Introduction to Scientific Thinking and Scientific Method	TBA
November 20-24	Scientific Method	TBA
November 27-December 1	Creationism, Evolution and the Criteria of Adequacy	TBA
December 5	<b>Classes End</b>	
December 6	<b>Reading Day</b>	

## Appendix 7.1: Pre-test Results Academic Year 2006-07.

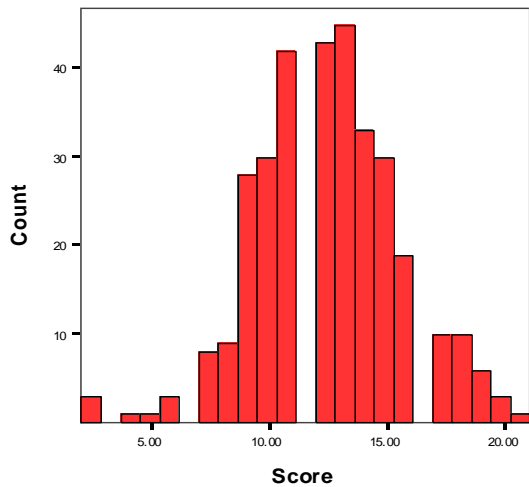
### Fall 2006



#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Score	410	.07	.69	.3941	.10338
Valid N (listwise)	410				

### Spring 2007



#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Percent	325	.07	.72	.4283	.10751
Valid N (listwise)	325				

## Appendix 7.2: Session Report Interwrite-PRS – 2/13/2007

The full session had 131 respondents. The mean score correct was 3.43 with standard deviation of 1.34. The lowest score in the session was 1 correct and the highest was 6 correct.

Example of student responses from Question 2.

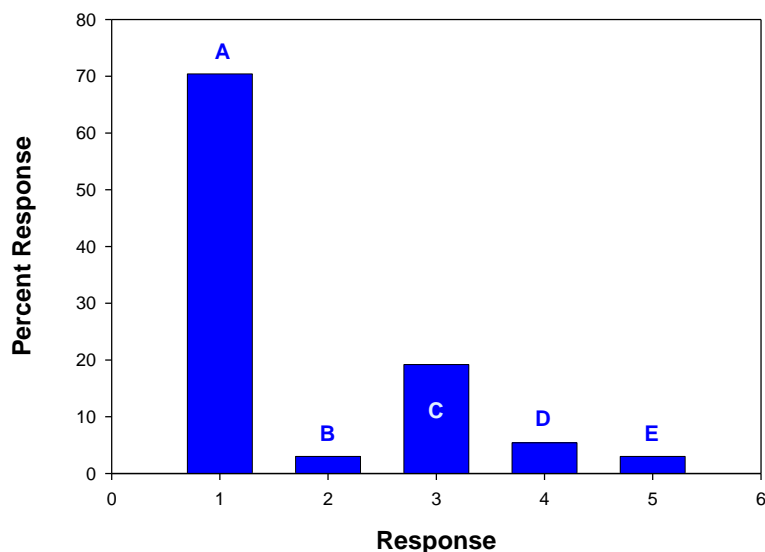
Which of these is an inductive argument? – Correct Answer: C

- ▶ A. Raleigh is in North Carolina. NC is in the United States, therefore Raleigh is in the United States. [This is a deductive argument...students who answered this, are still confused about the difference between deductive (premise guarantees conclusion) and inductive (premise does not guarantee conclusions.)]
- ▶ B. Time is money. Time flies. Therefore money flies. (Logical fallacy.)
- ▶ C. Most people do not live to be older than 100, therefore you won't live to be older than 100.
- ▶ D. Jamie Foxx is a better actor than Denzel Washington. (Subjective statement, but not an argument.)
- ▶ E. None of the above.



**Class Response:**

**Class Response Question 2**



*The class results show that the vast majority of the class could not distinguish a deductive from an inductive argument. However, the majority of the class could recognize an argument.*

**Appendix 7.2 Continued...Student ID in each response**

<b>Response A</b>	<b>Response B</b>	<b>Response C</b>	<b>Response D</b>	<b>Response E</b>	<b>None</b>
tmhughes	crjohns3	Dmwatts	tsratlif	csjones1	4994
jrlawary	jdstrait	112445	caadams	ndenglis	nrblount
jimaddox	anreynol	jbwinche	ahcobb	msyoung	srmalone
aymattoc	nrwillia	jlgardin	jonesnl	tsallen1	gwevans
gdthornw		jfneuman	kmtyson		d
696263		rjklugh			lwilson1
mdharris		jrgatlin			
rjnorman		dmthoma1			
615308		dzsmith			
wjlayer		mlfoste1			
3081		klwilli5			
Abadams		ljpierce			
cscopela		llsawyer			
dndarden		drbracey			
easiler		sldubrey			
ejtaylor		drflen			
elnewsom		algaine			
jjcadams		jkmicken			
jhbryant		jwmitche			
ldmacon		drmullin			
jlwilso1		slneal			
jahollan		brrhim			
ntmoore		lmrose			
sccolvin					
sdbrown3					
tsmy					
wshooker					
debailey					
rcbaker					
tabean					
adblackw					
cjbrinso					
dlbrown2					
esburton					
spbutler					
jlcanty					
kechapma					
bechrisp					
dscraig					

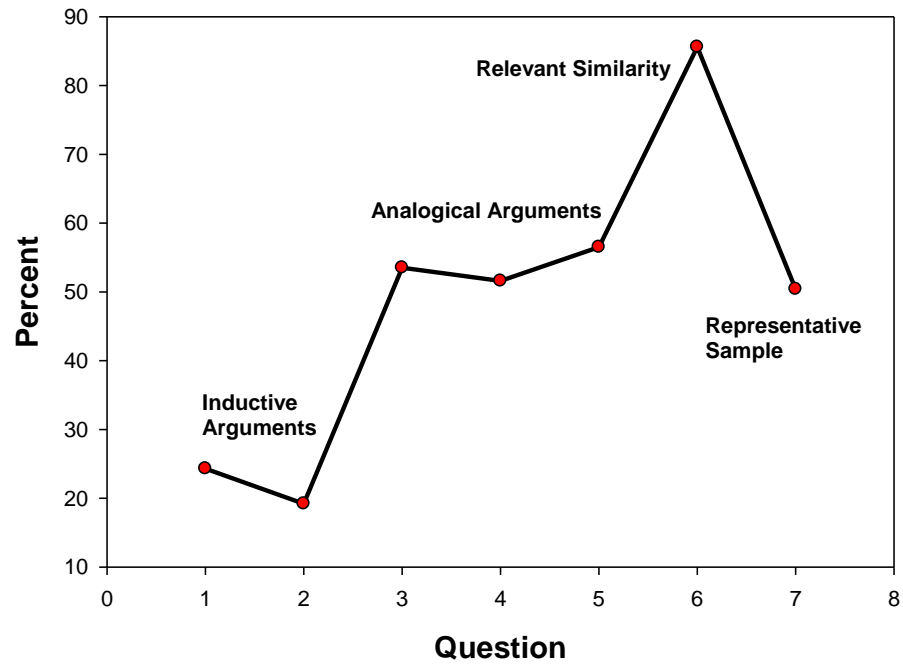


cvdavis					
jldavis3					
jedavis1					
djdomini					
dbdorsey					
jrescoba					
arestrad					
refarrow					
crgoodma					
cehall					
lmheckst					
rjhill1					
wcjames					
jbjohnso					
snjohns					
zajohns1					
cllawren					
belock					
pslockha					
lslopez					
mamajors					
gmmangum					
nomarabl					
csmarsha					
ramathe					
kpmcknig					
tlmcnair					
usmillik					
ccmims					
mimohame					
slnorwoo					
mcoluoch					
kjparker					
cjparks					
adpeaks					
slrankin					
dmrichard					
amross					
kdschofi					
jjserran					
ksmithjr					
agthomps					
cward					
jcweaver					
jawhite					

klwilli6					
mvwillia					
sawilli4					
kwright1					

## Appendix 7.3 Class Responses Across Questions

### Analytical Reasoning Lecture on Inductive Arguments 2/13/2007



## Appendix 7.4: Survey of Turning Point Clicker System

Question 1: I have used both the Turning Point and PRS clicker.

Answers	%
True	89.06
False	7.81
No Answer	3.12

Question 2: I found the Turning Point Clicker easy to use.

Answers	%
Strongly Agree	51.56
Agree	42.18
Disagree	1.56
Strongly Disagree	0.00
No Answer	4.68

Question 3: I like the size of the Turning Point Clicker.

Answers	%
Strongly Agree	48.43
Agree	25.00
Neutral	14.06
Disagree	7.81
Strongly Disagree	1.56
No Answer	3.12

Question 4: I found the Turning Point Clicker reliable

Answers	%
Strongly Agree	32.81
Agree	40.62
Neutral	17.18
Disagree	6.25
Strongly Disagree	0.00
No Answer	3.12

Question 5: I found the Turning Point questions easy to read.

Answers	%
Strongly Agree	39.06
Agree	37.50
Neutral	17.18
Disagree	1.56
Strongly Disagree	0.00
No Answer	4.68

Question 6: I found the Turning Point graphics easy to read.

Answers	%
Strongly Agree	37.50
Agree	42.18
Neutral	14.06
Disagree	3.12
Strongly Disagree	0.00
No Answer	3.12

Question 7: I found the Turning Point graphics easy to understand.

Answers	%
Strongly Agree	43.75
Agree	35.93
Neutral	17.18
Disagree	0.00
Strongly Disagree	0.00
No Answer	3.12

**Question 8: After the class answered a question, I understood the results that my teacher displayed on the screen.**

Answers	%
Strongly Agree	53.12
Agree	35.93
Neutral	6.25
Disagree	1.56
Strongly Disagree	0.00
No Answer	3.12

Question 9: I would recommend this clicker to other students at North Carolina A&T State University.

Answers	%
Strongly Agree	43.75
Agree	21.87
Neutral	25.00
Disagree	4.68
Strongly Disagree	1.56
No Answer	3.12

Question 10: In comparison to other clickers I have used, the Turning Point Clicker is better.

Yes: 89.1%

No: 11.9%

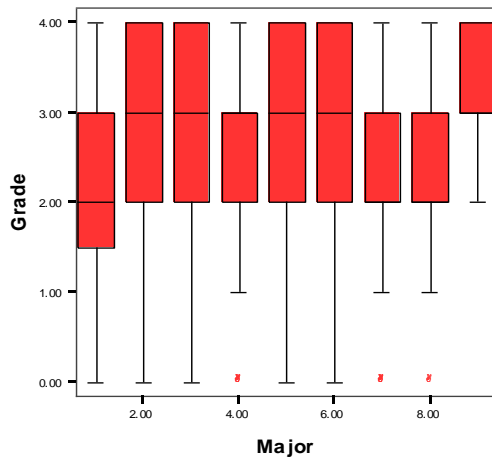
## Appendix 7.5: Summative Assessment of Analytical Reasoning, Academic Year 2006-07.

### Analytical Reasoning Grades, Fall 2006

		Grade			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	104	10.9	10.9	10.9
	1.00	53	5.6	5.6	16.5
	2.00	280	29.5	29.5	46.0
	3.00	279	29.4	29.4	75.4
	4.00	234	24.6	24.6	100.0
	Total	950	100.0	100.0	

The D, W, F ratio was 21.7%, not close to 30% requirement to be considered a high failure course. The percentage of B's was 29.4% which was more than 4 times the percentage of D's.

### Analysis of Analytical Reasoning Grades by Major – Fall 2006



#### Box Plot by Major

- 1 = Undeclared
- 2 = Engineering
- 3 = Business
- 4 = Arts and Sciences
- 5 = Arts and Sciences (Math/Science)
- 6 = Agriculture
- 7 = Education
- 8 = Technology
- 9 = Nursing

### ANOVA

Grade

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	85.614	8	10.702	7.467	.000
Within Groups	1456.097	1016	1.433		
Total	1541.711	1024			

One Way Anova for Grade v. Major

This tests the hypothesis that at least one major group has a mean different from the rest.

This test is highly significant.

### Bonferroni Analysis

#### Multiple Comparisons

Dependent Variable: Grade

Bonferroni

(I) Major	(J) Major	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
		Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound
1.00	2.00	-.53194(*)	.10621	.000	-.8724	-.1915
	3.00	-.77146(*)	.12941	.000	-1.1863	-.3566
	4.00	-.39190	.13961	.183	-.8395	.0557
	5.00	-.54647	.20669	.300	-1.2091	.1161
	6.00	-.57706(*)	.15244	.006	-1.0658	-.0884
	7.00	-.19792	.14457	1.000	-.6614	.2655
	8.00	.06073	.19096	1.000	-.5514	.6729
	9.00	-1.21780(*)	.36913	.036	-2.4012	-.0344
	2.00	1.00	.53194(*)	.10621	.000	.1915
3.00		-.23952	.12682	1.000	-.6461	.1670
4.00		.14004	.13722	1.000	-.2998	.5799
5.00		-.01453	.20508	1.000	-.6720	.6429
6.00		-.04511	.15025	1.000	-.5268	.4366
7.00		.33403	.14226	.686	-.1220	.7901
8.00		.59267	.18921	.064	-.0139	1.1992
9.00		-.68586	.36823	1.000	-1.8663	.4946
3.00		1.00	.77146(*)	.12941	.000	.3566
	2.00	.23952	.12682	1.000	-.1670	.6461
	4.00	.37956	.15587	.542	-.1201	.8793
	5.00	.22499	.21800	1.000	-.4739	.9238
	6.00	.19440	.16746	1.000	-.3424	.7312
	7.00	.57354(*)	.16033	.013	.0596	1.0875
	8.00	.83219(*)	.20315	.002	.1809	1.4834
	9.00	-.44634	.37558	1.000	-1.6504	.7577
	4.00	1.00	.39190	.13961	.183	-.0557
2.00		-.14004	.13722	1.000	-.5799	.2998



	3.00	-.37956	.15587	.542	-.8793	.1201
	5.00	-.15457	.22421	1.000	-.8733	.5642
	6.00	-.18516	.17546	1.000	-.7477	.3773
	7.00	.19399	.16867	1.000	-.3467	.7347
	8.00	.45263	.20979	1.000	-.2199	1.1252
	9.00	-.82590	.37922	1.000	-2.0416	.3898
5.00	1.00	.54647	.20669	.300	-.1161	1.2091
	2.00	.01453	.20508	1.000	-.6429	.6720
	3.00	-.22499	.21800	1.000	-.9238	.4739
	4.00	.15457	.22421	1.000	-.5642	.8733
	6.00	-.03058	.23241	1.000	-.7756	.7145
	7.00	.34856	.22733	1.000	-.3802	1.0773
	8.00	.60720	.25931	.698	-.2241	1.4385
	9.00	-.67133	.40870	1.000	-1.9815	.6389
6.00	1.00	.57706(*)	.15244	.006	.0884	1.0658
	2.00	.04511	.15025	1.000	-.4366	.5268
	3.00	-.19440	.16746	1.000	-.7312	.3424
	4.00	.18516	.17546	1.000	-.3773	.7477
	5.00	.03058	.23241	1.000	-.7145	.7756
	7.00	.37914	.17943	1.000	-.1961	.9544
	8.00	.63779	.21854	.129	-.0628	1.3384
	9.00	-.64074	.38413	1.000	-1.8722	.5907
7.00	1.00	.19792	.14457	1.000	-.2655	.6614
	2.00	-.33403	.14226	.686	-.7901	.1220
	3.00	-.57354(*)	.16033	.013	-1.0875	-.0596
	4.00	-.19399	.16867	1.000	-.7347	.3467
	5.00	-.34856	.22733	1.000	-1.0773	.3802
	6.00	-.37914	.17943	1.000	-.9544	.1961
	8.00	.25864	.21312	1.000	-.4246	.9419
	9.00	-1.01989	.38107	.272	-2.2415	.2018
8.00	1.00	-.06073	.19096	1.000	-.6729	.5514
	2.00	-.59267	.18921	.064	-1.1992	.0139
	3.00	-.83219(*)	.20315	.002	-1.4834	-.1809
	4.00	-.45263	.20979	1.000	-1.1252	.2199
	5.00	-.60720	.25931	.698	-1.4385	.2241
	6.00	-.63779	.21854	.129	-1.3384	.0628
	7.00	-.25864	.21312	1.000	-.9419	.4246
	9.00	-1.27853	.40097	.053	-2.5640	.0069
9.00	1.00	1.21780(*)	.36913	.036	.0344	2.4012
	2.00	.68586	.36823	1.000	-.4946	1.8663
	3.00	.44634	.37558	1.000	-.7577	1.6504
	4.00	.82590	.37922	1.000	-.3898	2.0416
	5.00	.67133	.40870	1.000	-.6389	1.9815
	6.00	.64074	.38413	1.000	-.5907	1.8722
	7.00	1.01989	.38107	.272	-.2018	2.2415
	8.00	1.27853	.40097	.053	-.0069	2.5640

\* The mean difference is significant at the .05 level.

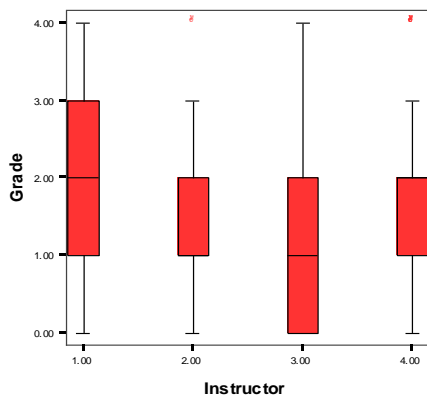
This shows that Engineering and Business majors did significantly better than Undeclared, Education, and Technology. Notable is the fact that A&S science students did no better than A&S non-science majors, nor did they do significantly better than Undeclared, Education, or Technology students. I shall perform further analysis to determine whether the advantage shown by Engineering and Business results from the fact that they may begin with students that have better university level preparation. This may be evidenced by examining the total SAT scores across majors. This taken together with the pre-test results vitiates the claim that science and engineering majors don't really need to take Analytical Reasoning because they already know the material presented in the course.

**Analytical Reasoning Grades – Spring 2007 – results from 4 of 8 sections.**

**Grade**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid .00	128	22.5	22.5	22.5
1.00	131	23.0	23.0	45.5
2.00	165	29.0	29.0	74.5
3.00	110	19.3	19.3	93.8
4.00	35	6.2	6.2	100.0
Total	569	100.0	100.0	

**Analytical Reasoning Grades by Section**



**Report**

Grade

Instructor	Mean	N	Std. Deviation
1.00	2.1053	152	1.32304
2.00	1.5391	128	.97933
3.00	1.2201	159	1.13432
4.00	1.6923	130	1.13333
Total	1.6362	569	1.19983

**Tests of Between-Subjects Effects**

Dependent Variable: Grade

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	62.586(a)	3	20.862	15.610	.000
Intercept	1515.208	1	1515.208	1133.735	.000
Instructor	62.586	3	20.862	15.610	.000
Error	755.108	565	1.336		
Total	2341.000	569			
Corrected Total	817.694	568			

a R Squared = .077 (Adjusted R Squared = .072)

**Multiple Comparisons**

Dependent Variable: Grade

Bonferroni

(I) Instructor	(J) Instructor	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
		Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound
1.00	2.00	.5662(*)	.13869	.000	.1990	.9334
	3.00	.8851(*)	.13114	.000	.5379	1.2323
	4.00	.4130(*)	.13811	.017	.0473	.7786
2.00	1.00	-.5662(*)	.13869	.000	-.9334	-.1990
	3.00	.3189	.13728	.123	-.0445	.6824
	4.00	-.1532	.14395	1.000	-.5344	.2279
3.00	1.00	-.8851(*)	.13114	.000	-1.2323	-.5379
	2.00	-.3189	.13728	.123	-.6824	.0445
	4.00	-.4722(*)	.13670	.004	-.8341	-.1103
4.00	1.00	-.4130(*)	.13811	.017	-.7786	-.0473
	2.00	.1532	.14395	1.000	-.2279	.5344
	3.00	.4722(*)	.13670	.004	.1103	.8341

Based on observed means.

\* The mean difference is significant at the .05 level.

**Mean for all Sections – Spring 2007 -- Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Grade	569	.00	4.00	1.6362	1.19983
Valid N (listwise)	569				

## Appendix 7.6 Rubric of Learning Objectives for Analytical Reasoning

<b>1. Ability to recognize and state scientific problems</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
The student can recognize and identify the central problem.	This student fully understands how to recognize and identify the central problem.	This student has a good ability to recognize and identify the central problem.	This student has a fair ability to recognize and identify the central problem.	This student has a weak ability to recognize and identify the central problem.
The student can indicate whether non-scientific factors (e.g. value judgments) are contained within the problem.	This student fully understands whether non-scientific factors are contained in the problem.	This student has a good ability to recognize non-scientific factors involved in a problem.	This student has a fair ability to recognize non-scientific factors involved in a problem.	This student has a weak ability to recognize non-scientific factors involved in a problem.
The student can identify when a non-scientific factor contains moral, legal, or aesthetic reasoning.	This student fully understands how moral, legal, and aesthetic reasoning may influence scientific questions.	This student has a good ability to understand how moral, legal, and aesthetic reasoning may influence scientific questions.	This student has a fair ability to understand how moral, legal, and aesthetic reasoning may influence scientific questions.	This student has a weak ability to understand how moral, legal, and aesthetic reasoning may influence scientific questions.

<b>2. Ability to select, analyze, and evaluate information in relation to a problem</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
The student can recognize when the given information is inadequate.	This student fully understands how to recognize when information is inadequate to solve the problem.	This student has a good ability to recognize inadequate information.	This student has a fair ability to recognize inadequate information.	This student has a weak ability to recognize inadequate information.
The student can evaluate the authenticity (credibility ) of given sources of information.	This student fully recognizes when information is authentic.	This student has a good ability to recognize authentic information.	This student has a fair ability to recognize authentic information.	This student has a weak ability to recognize authentic information.
The student can apply information to a given problem's solution.	This student fully understands how to apply information to solve a problem, including new problems.	This student has a good ability to apply information to solve problems.	This student has a fair ability to apply information to solve a problem.	This student has a weak ability to apply information to solve a problem.

<b>3. Ability to recognize, state, and test hypotheses and other tentative explanations.</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
This student can formulate or recognize hypotheses based on given data.	This student fully understands how to formulate and recognize hypotheses.	This student has a good ability to formulate and recognize hypotheses.	This student has a fair ability to formulate and recognize hypotheses.	This student has a weak ability to formulate and recognize hypotheses.
This student can identify the evidence necessary to judge the truth of a given deduction.	This student fully understands what evidence is necessary to judge the truth of a deduction.	This student has a good understanding of the evidence necessary to judge the truth of a deduction.	This student has a fair ability to understand the evidence necessary to judge the truth of a given deduction.	This student has a weak ability to understand the evidence required to judge the truth of a given deduction.
This student can formulate an experiment to test a hypothesis.	This student fully understands how to formulate an experiment.	This student has a good ability to formulate an experiment.	This student has a fair ability to formulate an experiment.	This student has a weak ability to formulate an experiment.
This student can recognize when data support the hypothesis, and to what degree.	This student fully understands when data support a hypothesis and can describe accurately the degree of support.	This student has a good understanding of when data support a hypothesis and can describe with accuracy the degree of support.	This student has a fair understanding of when data support a hypothesis and inconsistently describes the degree of support.	This student has a weak understanding of when data support a hypothesis and can not describe the degree of support.

<b>4. Ability to formulate, recognize, and evaluate conclusions</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
This student can recognize generalizations in a conclusion.	This student fully understands how to recognize a generalization.	This student has a good ability to recognize generalizations.	This student has a fair ability to recognize generalizations.	This student has a weak ability to recognize generalizations.
This student can detect unstated assumptions.	This student fully recognizes unstated assumptions.	This student recognizes unstated assumptions well.	This student has a fair ability to recognize unstated assumptions.	This student has a weak ability to recognize unstated assumptions.
This student recognizes when evidence is inadequate to justify a conclusion.	This student fully recognizes inadequate evidence.	This student has a good ability to recognize inadequate evidence.	This student has a fair ability to recognize inadequate evidence.	This student has a weak ability to recognize inadequate evidence.
This student understands the difference between deduction and induction.	This student fully understands when an argument is deductive or inductive.	This student has a good understanding of when an argument is deductive or inductive.	This student has a fair understanding of when an argument is deductive or inductive.	This student has a weak understanding of when an argument is deductive or inductive.
This student can differentiate between fact and assumption.	This student can fully differentiate between fact and assumption.	This student has a good understanding of the difference between fact and assumption.	This student has a fair understanding of the difference between fact and assumption.	This student has a weak understanding of the difference between fact and assumption.



<b>5. Ability to recognize and formulate attitudes and take action after critical consideration.</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
The student can recognize proper and improper use of such concepts as causality and the tentative nature of truth.	This student fully understands the concept of causality and the tentative nature of truth.	This student has a good understanding of causality and the tentative nature of truth.	This student has a fair understanding of causality and the tentative nature of truth.	This student has a weak understanding of causality and the tentative nature of truth.
The student can assess a situation and recognize action that is consistent with scientific reasoning.	This student fully understands when an action is consistent with scientific reasoning.	This student has a good ability to understand when an action is consistent with scientific reasoning.	This student has a fair ability to understand when an action is consistent with scientific reasoning.	This student has a weak ability to understand when an action is consistent with scientific reasoning.
The student understands the relationship between scientific reasoning and various societal values.	This student fully understands the relationship between scientific reasoning and societal values.	This student has a good understanding of scientific reasoning and societal values.	This student has a fair understanding of scientific reasoning and societal values.	This student has a weak understanding of scientific reasoning and societal values.

Rubrics based on Dressel, P. and Mayhew, L.B., *General Education: Explorations in Evaluation*, Washington, D.C: American Council on Education, 1954.

## Appendix 8 – Syllabus and Learning Objectives – African American Experience

### UNST I40 African American Experience

Dr. Deborah H. Barnes

Office hours, W 1-3 pm & by appointment; 285-2059, Hines Hall  
dhbarnes@ncat.edu

#### Boiler Plate Material – Here

#### Course Description

UNST 140 introduces students to sociological, political, legal, scientific, artistic, and historical aspects of the African and African American experience in the Americas. Students will read key texts in Africana Studies from various fields of study. The materials are presented in an interdisciplinary format to encourage students' integration of events and concepts across disciplines.

#### African American Experience Course Objectives

- **Cultural Literacy:** demonstrate a transdisciplinary understanding of African American culture and experience through exams, written essays, and group work.
- **Critical Reading:** demonstrate critical reading skills in reading journals and class discussion
- **Communication:** demonstrate effective and informative communication skills through regular participation in class discussion and presentation
- **Collegiality:** develop habits of broadmindedness, civility, and ethnic responsiveness
- **Collaboration:** demonstrate an ability to work collaboratively on a variety of projects in small and large groups

#### UNST Learning Objectives

The African American Experience meets UNST objectives 2, 3, 4, 5, 9-15.

#### Communication

- 2 Encourages effective communication in diverse settings and groups using written, oral, and visual means
- 3 Aids in employment of critical thinking skills in written and oral communication
- 4 Helps students effectively relate ideas and concepts, as well as modes of inquiry across disciplines

#### Analytical Reasoning

- 5 Use analytical thinking skills to evaluate information critically

#### Multicultural Relations within a Global Society

- 9 Understand African and African American culture and traditions, including political, economic, and social challenges affecting people of African descent
- 10 Interact effectively with people from diverse cultures
- 11 Understand and appreciate the diversity and interrelationship of cultures locally, regionally, nationally, and internationally.

#### Historical and Social Processes in a Changing World

- 12 Understand the role of social, political, and economic institutions and processes in the development of societies and the factors that lead to dynamic change over time.

**Artistic and Literary Understanding**

- 13 Understand the role of literature, music, and the fine arts in describing, defining, and celebrating the human condition in diverse world cultures.

**Ethics and Social Responsibility**

- 14 Understand and apply ethical reasoning principles to resolve moral, social, and professional issues.
- 15 Understanding the role that markets, governments, and other social institutions can play in reducing social and economic inequality.

**Schedule of Readings – Fall06**

**Week 1**

- 8/21 – 25 Introduction to the course: **Race as Rubric**  
 Assessment: reading journals, learning logs  
 70 “What Can or Will We Do Without Race,” Graves

**Week 2**

- 8/28 – 9/1 72 from *Black Skin, White Masks*, Fanon  
**“Recitatif,” Toni Morrison**  
**Quiz**

**Week 3**

- 9/4 **Labor Day: No Classes**  
 9/6– 8 **Manifestations of Race**  
 21 “Race Matters,” West  
 79 “The Miseducation of Hip Hop,” Evelyn  
 44 “Black American Cinema: The New Realism,” Diawara

**Week 4**

- 9/11-15 **Foundations and paradigms**  
 3 “Meaning of KMT,” Hilliard  
 36 “Africa, Slavery, and the Shaping of Black Culture,” Berry  
 74 “Black Psychology,” Karenga

**Week 5**

- 9/18 - 22 **Views from the Past**  
 11 from “The Life of Olaudah Equiano,” Equiano  
 31 “An Address,” Stewart

**Week 6**

- 9/25 – 29 **Education: the Pathway to Freedom**  
**Up From Slavery, Washington**  
**Exam**

**Week 7**

- 10/2 – 6      **The New Middle Class**  
29      “Growing Up in the New Negro Renaissance, Davis  
28      from *Black Bourgeoisie*, Frazier  
Visit University Galleries, Dudley Building

**Week 8**

- 10/9 -10      **Fall Break [Monday & Tuesday]**  
**Arts and Letters**  
10/11 - 13      55      “Letter from the Birmingham Jail,” King  
26      “For My People,” Walker  
69      “I, Too,” Hughes  
54      “If We Must Die,” McKay  
56      “Toussaint,” Shange

**Week 9**

- 10/16 - 20      52      **Resistance and Revolution**  
53      “The Haitian Revolution,” Geggus  
53      “The Ballot or the Bullet,” Malcolm X  
**Homecoming Weekend**

**Week 10**

- 10/23 – 27      29      **A New Way Forward**  
67      “Marcus Garvey and the Universal Negro Improvement Association”  
68      “The Black Panther Party”  
68      “A Black Feminist Statement”  
**Exam**

**Week 11**

- 10/30 – 11/3      **The Souls of Black Folks, DuBois**  
**Quiz**

**Week 12**

- 11/6 - 10      **Institutional Racism**  
43      “Bullet Holes in the Wall,” Barnes  
78      “Unnatural Disasters,” Dyson  
84      “Women in Prison: How We Are,” Shakur

**Week 13**

- 11/13 – 17**      **Politics of Health**  
22      “Sick and Tired of being Sick and Tired,” Davis  
82      “The Mother,” Brooks  
HIV/AIDS

**Week 14**

11/20 – 21      80      “Voices from the Margin,” Rose  
11/22 -26      **Thanksgiving Break**

### Week 15

11/27-12/4      **The Future of Race**  
77      “Thoughts about Restitution,” Robinson  
85      “The African American Warrant for Reparations,” Asante

12/7 – 13      **Final Exam**

## Spring 2007

### Course Description

UNST 140 introduces students to sociological, political, legal, scientific, artistic, and historical aspects of the African and African American experience in the Americas. Students will read key texts in Africana Studies from various fields of study. The materials are presented in an interdisciplinary format to encourage students’ integration of events and concepts across disciplines.

### African American Experience Course Objectives

- **Cultural Literacy:** demonstrate a transdisciplinary understanding of African American culture and experience through exams, written essays, and group work.
- **Critical Reading:** demonstrate critical reading skills in reading journals and class discussion
- **Communication:** demonstrate effective and informative communication skills through regular participation in class discussion and presentation
- **Collegiality:** develop habits of broadmindedness, civility, and ethnic responsiveness
- **Collaboration:** demonstrate an ability to work collaboratively on a variety of projects in small and large groups

### UNST Learning Objectives

The African American Experience meets UNST objectives 2, 3, 4, 5, 9-15.

#### Communication

- 6 Encourages effective communication in diverse settings and groups using written, oral, and visual means
- 7 Aids in employment of critical thinking skills in written and oral communication
- 8 Helps students effectively relate ideas and concepts, as well as modes of inquiry across disciplines

#### Analytical Reasoning

- 9 Use analytical thinking skills to evaluate information critically

#### Multicultural Relations within a Global Society

- 16 Understand African and African American culture and traditions, including political, economic, and social challenges affecting people of African descent
- 17 Interact effectively with people from diverse cultures
- 18 Understand and appreciate the diversity and interrelationship of cultures locally, regionally, nationally, and internationally.

#### Historical and Social Processes in a Changing World

- 19 Understand the role of social, political, and economic institutions and processes in the development of societies and the factors that lead to dynamic change over time.

#### Artistic and Literary Understanding

- 20 Understand the role of literature, music, and the fine arts in describing, defining, and celebrating the human condition in diverse world cultures.

**Ethics and Social Responsibility**

- 21 Understand and apply ethical reasoning principles to resolve moral, social, and professional issues.
- 22 Understanding the role that markets, governments, and other social institutions can play in reducing social and economic inequality.

**Course Grade Distribution**

Exam I	5%	In class quizzes	20%
Exam II	10%		
Exam III	20%		
Final Exam	20%		
Group Project			

UNST 140 African American Experience  
Schedule of Readings

Class Schedule	T	R	Film Series FRI 7 – 9 pm NCB auditorium Tues. 7:30 pm 308 Noble Hall
Jan 8 – 12	Course Overview	Clicker Registration “The Meaning of Race”, p. 99.	<i>Sankofa</i>
Jan 16 – 19	Slavery	“Equiano” p 68; “An Address” p 196	<i>Africans in America Pt 1</i>
Jan 22 - 26	Reconstruction	<i>Up From Slavery</i>	<i>Africans in America Pt 2</i>
Jan 29 – Feb 2	Turn of the Twentieth Century	Paul Laurence Dunbar, selections [blackboard]	<i>Africans in America Pt 3</i>
Feb. 1		<b>Exam I—5%</b> knowledge/observation	
Feb 5 – 9	Jim Crow	<i>from Lay This Body Down library e-reserves</i>	<i>Rise and Fall of Jim Crow Pt 1</i>
Feb 12 – 16	Lynching Era	<i>from The Facts in the Case</i> [blackboard]	<i>Rise and Fall of Jim Crow Pt 2</i>
Feb 19 - 23	The Talented Tenth	<i>Souls of Black Folks</i>	<i>Rise and Fall of Jim Crow Pt 3</i>
Feb 26 – Mar 2	Harlem/Chicago Renaissance	“Growing up in the New Negro Renaissance” p 187	<i>Rise and Fall of Jim Crow Pt 4</i>
Mar. 1		<b>Exam II—10%</b> Comprehension/experience	
<b>Mar 5 – 9</b>	<b>Spring Break</b>	<b>Spring Break</b>	<b>Spring Break</b>
Mar 12 – 16	Civil Rights	“Letter from the Birmingham Jail,” p 426	<i>Eyes on the Prize</i>

<b>Mar 19 – 23</b>	Desegregation	<i>Recitatif</i>	<i>Ethnic Notions</i>
Mar 26 – 30	Integration	“African American Literature,” p 257	<i>February One: The Story of the Greensboro Four</i>
Mar. 29		<b>Exam III—20%</b> Application/reasoning	
Apr 2 – 5	Hip Hop Era	“Race Matters,” p 147 <b>Group Projects</b> synthesis/communication	<i>Bamboozled</i>
Apr 9 - 13	Twenty-First Century; HIV/AIDS	<b>Group Projects</b>	<i>One Week</i>
Apr 16 – 20	Globalism	“African American Warrant for Reparations,” p 595 <b>Group Projects</b>	<i>Sometimes in April</i>
Apr 23 - 27	Sexuality	“No More Secrets, No More Lies,” p 545	TBA
<b>Apr 30-May 1</b>	<b>Last day of class</b>	<b>Last day of class</b>	
<b>May 3 - 9</b>		<b>Final Exam—20%</b> analysis/reflection	

**Appendix 8.1: Summative Assessments African American Experience – Spring 2007-06-01**

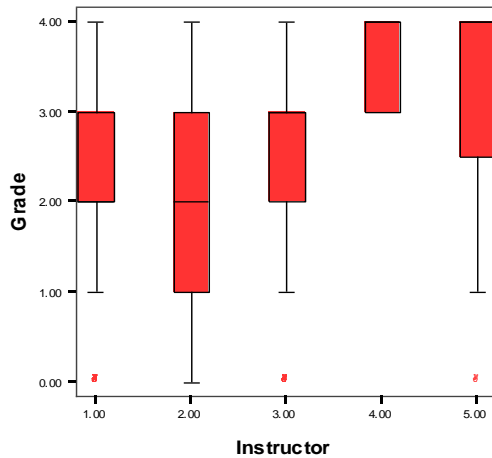
**Grade**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	119	11.9	11.9	11.9
	1.00	123	12.3	12.3	24.2
	2.00	308	30.9	30.9	55.1
	3.00	358	35.9	35.9	91.0
	4.00	90	9.0	9.0	100.0
	Total	998	100.0	100.0	

**Mean Grade African American Experience spring 2007**

	N	Minimum	Maximum	Mean	Std. Deviation
Grade	998	.00	4.00	2.1774	1.13555
Valid N (listwise)	998				

**Grades by Instructor**



**Alston = 1**  
**Barnes = 2**  
**Blackmore = 3**  
**Graves\* = 4**  
**McDaniel\*\* = 5**

**\* = honors section**  
**\*\* = on-line section**



### Mean Grade by Instructor

Grade

Instructor	Mean	N	Std. Deviation
1.00	2.0762	328	1.04793
2.00	1.8299	294	1.17060
3.00	2.3774	310	1.00298
4.00	3.6154	26	.49614
5.00	3.0750	40	1.34712
Total	2.1774	998	1.13555

### Tests of Between-Subjects Effects

Dependent Variable: Grade

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	137.246(a)	4	34.312	29.670	.000
Intercept	2301.467	1	2301.467	1990.102	.000
Instructor	137.246	4	34.312	29.670	.000
Error	1148.362	993	1.156		
Total	6017.000	998			
Corrected Total	1285.608	997			

a R Squared = .107 (Adjusted R Squared = .103)

### Multiple Comparisons

Dependent Variable: Grade

Bonferroni

(I) Instructor	(J) Instructor	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
		Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound
1.00	2.00	.2463(*)	.08637	.044	.0033	.4893
	3.00	-.3012(*)	.08518	.004	-.5408	-.0616
	4.00	-1.5392(*)	.21910	.000	-2.1556	-.9228
	5.00	-.9988(*)	.18010	.000	-1.5055	-.4921
2.00	1.00	-.2463(*)	.08637	.044	-.4893	-.0033
	3.00	-.5475(*)	.08754	.000	-.7938	-.3012
	4.00	-1.7855(*)	.22003	.000	-2.4045	-1.1664
	5.00	-1.2451(*)	.18123	.000	-1.7549	-.7352
3.00	1.00	.3012(*)	.08518	.004	.0616	.5408
	2.00	.5475(*)	.08754	.000	.3012	.7938
	4.00	-1.2380(*)	.21957	.000	-1.8557	-.6203
	5.00	-.6976(*)	.18067	.001	-1.2059	-.1893
4.00	1.00	1.5392(*)	.21910	.000	.9228	2.1556
	2.00	1.7855(*)	.22003	.000	1.1664	2.4045
	3.00	1.2380(*)	.21957	.000	.6203	1.8557
	5.00	.5404	.27091	.463	-.2218	1.3025
5.00	1.00	.9988(*)	.18010	.000	.4921	1.5055

2.00	1.2451(*)	.18123	.000	.7352	1.7549
3.00	.6976(*)	.18067	.001	.1893	1.2059
4.00	-.5404	.27091	.463	-1.3025	.2218

Based on observed means.

\* The mean difference is significant at the .05 level.

**Appendix 8.2 – Analysis of delivery format and student grades – African American Experience, Spring 2007.**

**Tests of Between-Subjects Effects**

Dependent Variable: Grade

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	66.144(a)	5	13.229	9.693	.000
Intercept	1445.559	1	1445.559	1059.155	.000
Format	2.439	1	2.439	1.787	.182
Instructor	15.967	2	7.984	5.850	.003
Format * Instructor	4.684	1	4.684	3.432	.064
Error	1480.833	1085	1.365		
Total	5891.000	1091			
Corrected Total	1546.977	1090			

a R Squared = .043 (Adjusted R Squared = .038)

This ANOVA report shows that format did not have a significant impact on student grades. Instructor was highly significant and the format by instructor interaction was close to significant.

**Multiple Comparisons**

Dependent Variable: Grade

Bonferroni

(I) Format	(J) Format	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
		Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound
1.00	2.00	.1285	.13668	1.000	-.1992	.4563
	3.00	-1.1110(*)	.18848	.000	-1.5629	-.6591
2.00	1.00	-.1285	.13668	1.000	-.4563	.1992
	3.00	-1.2396(*)	.22671	.000	-1.7831	-.6960
3.00	1.00	1.1110(*)	.18848	.000	.6591	1.5629
	2.00	1.2396(*)	.22671	.000	.6960	1.7831

Based on observed means.

\* The mean difference is significant at the .05 level.

The post-hoc comparison shows that the grades of the on-line sections were significantly higher than the small or large lecture format. This may be because there was only one instructor for these sections, and this instructor had higher grades than any of the other instructors.

**Post-hoc comparison – Instructor**

**Multiple Comparisons**

Dependent Variable: Grade  
Bonferroni

(I) Instructor	(J) Instructor	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	-.2285	.08850	.060	-.4624	.0055
	3.00	-.0410	.09191	1.000	-.2839	.2019
	4.00	-1.2216(*)	.19638	.000	-1.7406	-.7025
2.00	1.00	.2285	.08850	.060	-.0055	.4624
	3.00	.1875	.08596	.176	-.0397	.4147
	4.00	-.9931(*)	.19367	.000	-1.5050	-.4812
3.00	1.00	.0410	.09191	1.000	-.2019	.2839
	2.00	-.1875	.08596	.176	-.4147	.0397
	4.00	-1.1806(*)	.19525	.000	-1.6966	-.6645
4.00	1.00	1.2216(*)	.19638	.000	.7025	1.7406
	2.00	.9931(*)	.19367	.000	.4812	1.5050
	3.00	1.1806(*)	.19525	.000	.6645	1.6966

Based on observed means.

\* The mean difference is significant at the .05 level.

**Means by Format and Instructor (Format 1 = large, 2 = small, 3 = on-line) and Instructor (1 = Barnes, 2 = Blackmore, 3 = Alston, 4 = McDaniel)**

**Grade \* Format**

Grade

Format	Mean	N	Std. Deviation
1.00	1.9640	972	1.17200
2.00	1.8354	79	1.09111
3.00	3.0750	40	1.34712
Total	1.9954	1091	1.19132

**Grade \* Instructor**

Grade

Instructor	Mean	N	Std. Deviation
1.00	1.8534	307	1.17212
2.00	2.0819	403	1.12888
3.00	1.8944	341	1.19336
4.00	3.0750	40	1.34712
Total	1.9954	1091	1.19132

## **Appendix 9. Theme-Based Courses**

The four currently available themes and courses within each theme are given below.

### Science, Technology and Society

Courses in this cluster will help students understand the complex relationships between scientific discovery, technological advance, and societal change. In addition, students will debate the ethical implications of contemporary scientific research, examine how technology is portrayed in literature and the arts, and evaluate the frequently made claim that better science and technology lead to better lives.

AGEN 216 Geographic Information Systems in Engineering and Natural Resources

COMP 390 Social Implications of Computing

ENGL 206 Film and Culture

ENGL 231 World Literature II

ENGL 331 Writing for Science and Technology

ENGL 336 Postcolonial Novel

HIST 307 Historical Origins of Environmental Crises

PHIL 266 Contemporary Moral Problems

POLI 410 Public Policy and Technology

POLI 448 Politics of Transportation

SOCI 473 Introduction to Population Studies

SOWK 415 Medical Sociology

UNST 201 Inventing America: Science, Technology, and Progress

UNST 203 Technology, the Real, the Fake and the Authentic

UNST 206 Scientific Revolutions and Social Change

### **UNST 207 Ethics & Biotechnology**

UNST 210 Ethics in Information Technology

UNST 213 Evolution and Social Implication of Technology. Theme: Technology and Progress

UNST 219 Technology and Public Wellness

### **UNST 221 Thematic Writing and Speaking: Technology and Society**

### Energy, Environment and Society

Courses in this cluster will examine the role of energy in both local and world economies - how energy issues often intersect and collide with political power, social relationships, and economic development. In addition, this cluster will explore how decisions surrounding energy and environmental issues affect social justice within communities, across the country, and around the world.

AGEC 300 Principles of Rural Sociology

AGEN 216 Geographic Information Systems in Engineering and Natural Resources

BUAD 461 Legal Environment of Business

EASC 201 The Earth-Man's Environment

GEOG 200 Principles of Geography

GEOG 322 Economic Geography

HIST 435 Global History since 1945

PHIL 308 Culture and Value

POLI 250 Introduction to Public Policy  
POLI 410 Public Policy and Technology  
POLI 415 Environmental Policy  
POLI 448 Politics of Transportation  
SOCIO 200 Introduction to Anthropology  
SOCIO 300 Topics in Cultural Anthropology  
UNST 205 The Impact of Energy and the Environment on Development in Non-Industrialized Countries  
UNST 211 Case Studies in Environmental Issues  
**UNST 212 Contemporary Issues in Energy Uses and Sources**

### Community, Conflict and Society

Courses in this cluster help students better understand the factors that lead to conflict, and its resolution, at the local, national, and international level. Special attention will be paid to how people of different backgrounds reach peaceful solutions to difficult problems. Students will also be given opportunities to learn mediation and conflict resolution skills as part of their experience in this cluster.

BUAD 361 Legal Environment of Business  
ENGL 336 Postcolonial Novel  
HIST 203 North Carolina A&T State University: A Legacy of Social Activism  
HIST 312 History of Religions  
HIST 332 The Modern Middle East  
HIST 336 20th and 21st Century Women Activists of the World  
HIST 417 Colonialism and Slavery in Latin America and the Caribbean  
HIST 418 Conflict and Change in Post-Colonial Latin America and the Caribbean  
HIST 461 History of the New South  
PHIL 260 Introduction to Philosophy  
POLI 446 Politics of the Americas  
POLI 448 Politics of Transportation  
SOCIO 406 Criminology  
SOWK 413 The Community  
UNST 204 21st Century Organizations: Attitudes, Attention Drivers, and Angst  
UNST 208 Foundations of Negotiation And Conflict Resolution  
**UNST 216 Genocide in the Modern World**  
UNST 220 Social Consequences of Scientific and Technological Progress In the African American Experience  
UNST 222 Introduction to Crime Studies and Research

### Health, Lifestyles and Society

Courses in this cluster introduce students to the behavioral foundations of healthy lifestyles. Courses will also explore the impact of advances in biotechnology, medical research, medical ethics and the operation of the healthcare system on the human condition. Special attention is paid to health and lifestyle issues affecting women, the elderly, and the African American community.

HEFS 135 Food & Man's Survival

HPED 219 Human Sexuality

HPED 221 Health & Wellness in the 21st Century

NURS 305 Nutrition for Healthy Lifestyles

NURS 315 Issues in Women's Health

NURS 415 Health Care in a Global Society

PHIL 266 Contemporary Moral Problems

PSYC 320 General Psychology

SOCI 304 Social Aspects of Human Sexuality

SOCI 308 Sociology of Marriage and the Family

SOWK 370 Aging in Society

SOWK 409 Disability and Employment

SOWK 415 Medical Sociology

UNST 202 Ecological Approach to an Active Healthy Lifestyle

**UNST 209 Disparities In Public Health Care: The Effects On Race, Gender, And Class**

UNST 214 Maps, Mapping, and Environmental Health

UNST 215 Comparative Socio-Cultural Environments of Health Care Systems

UNST 217 Health and Wellness in the 21<sup>st</sup> Century

UNST 218 Fitness for Life

## **Appendix 9.1 Non-University Studies Theme Courses Offered in Fall 2007**

### Science, Technology and Society

AGEN 216 Geographic Information Systems in Engineering and Natural Resources  
COMP 390 Social Implications of Computing  
ENGL 206 Film and Culture  
ENGL 331 Writing for Science and Technology  
POLI 448 Politics of Transportation

### Energy, Environment and Society

AGEC 300 Principles of Rural Sociology  
AGEN 216 Geographic Information Systems in Engineering and Natural Resources  
BUAD 361 Legal Environment of Business  
EASC 201 The Earth-Man's Environment  
GEOG 200 Principles of Geography  
HIST 435 Global History since 1945  
POLI 250 Introduction to Public Policy  
POLI 448 Politics of Transportation  
SOCIO 200 Introduction to Anthropology  
SOCIO 300 Topics in Cultural Anthropology

### Community, Conflict and Society

BUAD 361 Legal Environment of Business  
CRJS/SOCI 406 Criminology  
ENGL 336 Postcolonial Novel  
HIST 418 Conflict and Change in Post-Colonial Latin America and the Caribbean  
HIST 435 Global History Since 1945  
PHIL 260 Introduction to Philosophy  
POLI 448 Politics of Transportation  
SOWK 413 The Community

### Health, Lifestyles and Society

CRJS/SOCI 406 Criminology  
HPED 222 Health & Wellness in the 21st Century  
NURS 305 Nutrition for Healthy Lifestyles  
NURS 315 Issues in Women's Health  
NURS 415 Health Care in a Global Society  
PSYC 320 General Psychology  
SOCIO 308 Sociology of Marriage and the Family



## Appendix 9.2 Broad University Studies Themes Covered in Cluster Courses

Theme 1 = Effective Written and Oral Communication of Ideas

Theme 2 = Broad Based Critical-Thinking Skills

Theme 3 = Appreciation of Diverse Cultures

Theme 4 = Social Responsibility and Civic Engagement

<b>Course/Cluster</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Course/Cluster</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
AGEN 216/STS & EES	+	+			HIST203/CCS		?	?	?
AREN 112/STS	+		+	+	HIST312/CCS		?	?	?
COMP360/STS		?		?	HIST332/CCS		?	?	?
POLI410/STS & EES		?		?	HIST336/CCS		?	?	?
POLI448/STS, EES, CCS		?		?	HIST417/CCS		?	?	?
SOCI473/STS		?	?		HIST418/CCS		?	?	?
SOWK415/STS		?	?	?	HIST461/CCS		?	?	?
ENGL206/STS	?		?		PHIL260/CCS		?	?	?
ENGL231/STS	?		?		POLI446/CCS		?	?	?
ENGL331/STS	?	?			POLI220/CCS		?	?	?
ENGL336/STS & CCS	?		?		POLI400/CCS		?	?	?
HIST307/STS		?	?		POLI460/CCS		?	?	?
PHIL266/STS		?		?	CRJS238/CCS		?	?	?
					CRJS/SOCI406/CCS		?	?	?
					SOWK416/CCS		?	?	?
<b>Course/Cluster</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Course/Cluster</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
AGEC300/STS			+	+	FCS135/HLS		?	?	
BUAD 361/EES & CCS	+	+		+	HPED219/HLS		?	?	
EASC201/EES	+	+	+		HPED221/HLS		?		?
POLI250/EES		?		?	NURS305/HLS		?		?
POLI415/EES		?		?	NURS315/HLS		?	?	?
POLI410		?		?	NURS415/HLS		?	?	
SOCI200/EES		?	?		PHIL266/HLS		?		?
SOCI300/EES		?	?		SOCI304/HLS		?	?	
GEOG200/EES		?	?		SOCI308/HLS		?	?	
GEOG322/EES		?	?		SOWK370/HLS		?	?	
HIST435/EES		?	?	?	SOWK409/HLS		?	?	
PHIL308/EES		?	?	?	SOWK415/HLS		?	?	

+ = reported by department.

? = surmised by course description.

Theme 1 = Effective Written and Oral Communication of Ideas

Theme 2 = Broad Based Critical-Thinking Skills

Theme 3 = Appreciation of Diverse Cultures

Theme 4 = Social Responsibility and Civic Engagement

**Appendix 10: Major-Specified Capstone Courses (School of Agriculture & Environmental Sciences)**

<b>Major</b>	<b>Course</b>	<b>Description</b>
Agricbusiness, Applied Economics and Agriscience Education	AGEC 599 Internship	The student participates in a temporary period of supervised work experience which provides opportunity to apply theoretical knowledge to a work situation.
Agricultural Education	AGED 502	Student must spend at least 12 weeks in an approved teaching center.
Agricultural Education (professional service)	AGED 504 Internship	Students required to spend a minimum of 6 weeks in an approved extension program, government agency, or agricbusiness doing observation and directed professional work.
Animal Sciences	ANSC 619 Special Problems	Problems in feeding, breeding, and management of beef cattle, sheep, and swine production.
Family and Consumer Sciences	FCS 612 Senior Seminar	Students review and present major research findings in the various disciplines of Family and Consumer Sciences.

## Appendix 10: College of Arts and Sciences

Major	Course	Description
Biology	BIOL 501	Senior Project: Students develop independent hypothesis based project in biology. Student must submit written paper and conduct public defense.
Chemistry	Chem 503/504	Independent research: Students use library and/or laboratory to study minor problems of research. Students submit written paper and conduct public defense.
English	ENGL 502-1	Independent Study: Students pursue independently in-depth study in the English Literature, African American Literature, English Technical Writing, Creative Writing, or Linguistics culminating in a manuscript, report, or scholarly article suitable for publication.
FOLA (French, Spanish)	FOLA 524	Seminar – includes readings, special topics, and guest speakers. Students are required to submit papers on research techniques in literary studies required.
FOLA (French, Spanish, – Teaching)	CUIN 560	Observation and student teaching – Application and practice of methods, techniques, and materials on instruction in real classrooms under supervision.
History	HIST 599	Seminar – Enduring topics of historical interest requiring extensive research and paper.
Journalism and Mass Com.	JOMC 598?	Internship – Media experience designed to assist students in applying mass communication research and theory in the development of professional practices.
Liberal Studies	LIB 601	Independent Study I – Students conduct advanced research on a specialized topic.
Mathematics	MATH 692	Independent Study – Students conduct advanced research on an approved mathematical topic (supervised by instructor.)
Physics	PHYS 550	Research – Students participate in research conducted by faculty. Topics may be analytical or experimental, independent study encouraged.
Political Science and Crim. Justice	POLI 505	Honors Seminar – Examination of selected political science and criminal justice topics.
Psychology	PSYC 542	Seminar – Major systematic and theoretical issues in psychology, students participate in research and present oral and written project.
Sociology	SOSW 625	Internship – Provides opportunity for students to enhance employability by supervised experiences in selected agencies.
Social Work	SOWK 570	Seminar – Research and discussion of professional and field issues related to careers in sociology and social work.
Music	MUSI 553/550	Senior recital – student demonstrates high level of proficiency on a chosen instrument or applied music field.
Music Therapy, Electronic Music, Music Theater	MUSI 551	Independent Study – Mentored independent research project, proposal, reporting, and jury evaluation.
Theatre Arts	THEA 572?	Independent Study – Studies in specific areas of theater production, potentially salaried positions in a professional theater company.
Visual Arts	ART 526	Senior Project – Students provide evidence of the ability to do serious individual work on a professional level and may carry out project of their own choosing.

## Appendix 11: Service Learning Opportunities Academic Year 2006 – 07

Organization	Overview	Opportunities	Contact Person	Address Phone
The Volunteer Center of Greensboro	The Volunteer Center strengthens the community by creating meaningful volunteer connections. They connect people, promote volunteerism, and support nonprofits, and build partnerships.	Fundraising, Public Relations, Drivers, Childcare, Office Support, Tutoring, Computer Support, Grant Writing, Chaperone, Bookkeeping, Mentoring, Sports & Recreation, Summer Volunteer, Special Events Assistance	Janine Griffin	1500 Yanceyville Street, Greensboro, NC 27405 336.378.6846
Adult Center for Enrichment	To enrich the lives of frail and impaired adults and their families and the community through specialized adult day services, respite care, education and support.	Fundraising, Drivers, Adult Daycare, Recreation Activities, Summer Volunteer, Special Events, Gardening, Adult Support, Program Assistant	Nancy Gore	PO Box 13048, Greensboro, NC 27415 336.274.3559
American Red Cross	The American Red Cross, a humanitarian organization led by volunteers and guided by its Congressional Charter and the Fundamental Principles of the International Red Cross Movement, will provide relief to victims of disaster and help people prevent, prepare for, and respond to emergencies.	Office Support, Special Events, Blood Services Greeter and Canteen	Anne Vestal	1501 Yanceyville Street, Greensboro, NC 27405, 336.333.2111
Senior Resources of Guilford	To serve our diverse community of older adults and their families by advocating and providing supportive services that enhance the independence, health and quality of life for older adults.	Fundraising, Public Relations, Drivers, Office Support, Special Events Coordinator, Other (Assist with hot meals to older adults in their homes)	Sharon Sciandra	301 F. Washington Street  Greensboro, NC 27420, 336.373.4816 ext.249
Women's Outreach Mission Empowerment Network Inc.	WOMEN Inc.'s mission is to reduce the spread of HIV/AIDS and STD infections by providing prevention education, support and innovative programs to empower women in making informed choices to eradicate risky behaviors.	Fundraising, Public Relations Office, Support, Advocacy, Computer Support, Grant Writing, Special Events Asst., Technological Asst., Program Coordinator	Babara Hawley	3812 Herbin Street, Greensboro, NC 27407 336.218.8369

Appendix 11 – Service Learning

<b>Organization</b>	<b>Overview</b>	<b>Opportunities</b>	<b>Contact</b>	<b>Address &amp; Phone</b>
Junior Achievement of Central NC, Inc.	To ensure that every child has a fundamental understanding of the free enterprise system.	JA Classroom Consultant, Fundraising	Aubree Martin	3220 Northline Avenue, Greensboro, NC 27408, 336.299.4339
Jamir Productions and Entertainment	To implement a way of communication for a future where children are able to speak a universal language – the language of music. With music there are no barriers to communication.	Fundraising, Public Relations, Office Support, Mentoring, Grant Writing, Special Events Assistance.	Joy Lough	1400 Battleground Ave. Suite 134-A Greensboro, NC 27408, 336.370.4555
Big Brothers Big Sisters of Greater Greensboro	The mission of Big Brothers Big Sisters of Greater Greensboro is to make a positive difference in the lives of children and youth, primarily through a professionally supported one to one relationship with caring adults, and assist them in achieving their highest potential as they grow to become confident competitors and caring individuals.	Big Brother/Big Sister	Robin Williams	211 S. Edgeworth Street, Greensboro, NC 27401, 336.378.9100
Lutheran Family Services in the Carolinas	Responding to Christ’s call to serve all people, LFS in the Carolinas seeks justice, healing, renewal, and enrichment for individuals and families through service, advocacy, and education.	Drivers, Office Support, Research Advocacy, Case Manager Asst.	Lani Higgins	1031 Summit Avenue, Suite 1-E2, Greensboro, NC 27405, 336.669.0072
Black Child Development	To improve and protect the quality of life of youth and families in the Greater Greensboro Area.	Public Relations, Childcare, Office Support, Tutoring, Advocacy, Mentoring, Summer Opportunity, Special Events	Kim Powell	1200 E. Market Street, Greensboro, NC 27401m, 336.230.2138

Appendix 11 – Service Learning

<b>Organization</b>	<b>Overview</b>	<b>Opportunities</b>	<b>Contact</b>	<b>Address &amp; Phone</b>
Erwin Montessori Elementary School	Every student will become an independent life-long learner, will grow in social graces and will attain inner discipline and joy – the birthright of every human being.	Not listed	Heidi Pegram	3012 E. Bessemer Avenue, Greensboro, NC 27405, 336.370.8151
David D. Jones Magnet Elementary	School provides a well-rounded education whereby students will value knowledge, become independent readers, develop critical thinking skills in order to become productive citizens of the world. We strive to instill respect for all people in our students. We expect all students to function on or above grade level.	Horticultural Development, Tutoring, Computer Support, Grant Writing, Sports/Recreation	Jake Henry	502 South Street, Greensboro, NC 27406, 336.370.8230
Greensboro Children’s Museum	Not Provided	Fundraising, Public Relations, Childcare, Office Support, Computer Support, Grant Writing, Summer Opportunities, Special Events	Tommie Lynn Sullivan	220 N. Church Street, Greensboro, NC 27401, 336.574.2898
Liberty Hospice	The mission of Liberty Home Care is to provide cost effective, quality services that will achieve optimal outcomes.	Office Support, Maintenance, Respite Care, Volunteer Care, Patient Care Volunteer, Bereavement Care Volunteer, Clerical Assistant	Sara D. Nesbitt	2311 West Cone Blvd. Suite 110, Greensboro, NC 27455, 336.545.9609
Northeast High School “Ram Potential Mentoring Program”	The purpose of the “Ram Potential” Mentoring Program is to provide support services for “at-risk” high school students with assistance from local college or university mentors.	Tutoring, Mentoring	Glenda T. Gray	6700 McLeansville Road, McLeansville, NC 27301, 336.375.2508 ext.199

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