

Advanced Studies

Implementation Guide

Career-Technical Education

Summer 2006



Course Numbers

6899 Agricultural Education Advanced Studies

6599 Business Advanced Studies

7199 Family & Consumer Sciences Advanced Studies

7299 Health Sciences Advanced Studies

6699 Marketing Advanced Studies

8005 Technology Advanced Studies

7999 Trade & Industrial Education Advanced Studies



PUBLIC SCHOOLS OF NORTH CAROLINA
State Board of Education
Department of Public Instruction

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Advanced Studies Implementation Guide

Course Numbers

Agricultural Education Advanced Studies - 6899
Business Advanced Studies - 6599
Family and Consumer Sciences Advanced Studies - 7199
Health Science Advanced Studies - 7299
Marketing Advanced Studies - 6699
Technology Advanced Studies - 8005
Trade and Industrial Education Advanced Studies – 7999

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FOREWORD

In response to the increasing demands of a world-class workplace, the course *Advanced Studies* was designed. This course provides students the opportunity to culminate their learning experience in a career pathway. The course engages students in higher-order thinking by challenging them with practical career-based problems. Problem solving is an integral piece of *Advanced Studies*.

The student goals of *Advanced Studies* are to

- apply learning in their chosen career area.
- improve competence and skills required of the workplace.
- assess one's performance.

The *Advanced Studies Implementation Guide* provides information and tools for assisting students in accomplishing these goals.

Advanced Studies is also an excellent vehicle for completing the Graduation Project, a component of the recently adopted high school exit standards. The four components of the graduation project: the paper, project, portfolio, and presentation are well supported by Advanced Studies. As schools organize their school-based committees to implement the Graduation Project, Advanced Studies teachers should be an integral part of the Graduation Project's implementation.

This guide was developed through the diligence and work of the North Carolina Department of Public Instruction staff. For their efforts I wish to express appreciation to the following Career Technical Education staff who coordinated the development of this guide: Jean Collins, Surry County Schools; Kathy White, Surry County Schools; Shannon Vanhoy, Mt. Pleasant High School; Nancye Hart, North Mecklenburg; Jill Oliver, Southeast Raleigh High School; Pamela Lewis, Spring Creek High School; Carol Parrish, North Mecklenburg High School; Darrell Purcell, EE Smith High School; Judith Simon, Department of Public Instruction; Edith Duncombe, Department of Public Instruction; Kathy Turner, Department of Public Instruction, and Aaron Fleming, Department of Public Instruction.

We hope this guide will be helpful to you and your students.

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2006 Summer Revision

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Many thanks to the above Career-Technical Educations teachers, administrators, and state staff for their efforts in the revision work of the Summer of 2006 Advanced Studies Implementation Guide. The team realigned the previous guide with the 2006 Graduation Project Implementation Guide and the 2006 Exit Standards. The team reformatted the guide for easier teacher and student use, offered marketing tools, and provided staff development opportunities to create additional interest in this course.

Special thanks to Jill Oliver for her work in reformatting the document, Nancy Hart, her students, and the entire Advanced Studies Team for submitting video clips and photos for our 2006 marketing video, and to Jean Collins and Surry County who made major contributions to make the documentation clearer, concise, and easier to follow.

We hope that Career-Technical Education students will gain a better understanding of his / her chosen field of work and will be able to apply those skills learned during this course as they enter post-secondary education or into their career upon graduation.

INTRODUCTION

Mission and Purpose

The mission and purposes of Advanced Studies courses are synonymous with the Career-Technical Education mission and purposes as described in the *Career-Technical Education Standard Course of Study, 2002*.

The mission of Career-Technical Education is to help empower students for effective participation in an global economy as world-class workers and citizens.

Career-Technical Education fulfills this mission by:

1. Preparing students for further career-technical education and lifelong learning.
2. Preparing students for initial and continued employment.
3. Assisting students in making educational and career decisions.
4. Applying and reinforcing related learning from other disciplines.
5. Assisting students in developing decision-making, communication, problem solving, leadership, and citizenship skills.
6. Preparing students to make informed consumer decisions and apply practical life skills.
7. Making appropriate provisions for students with special needs to succeed in Career-Technical Education programs.

Description

A culminating course, Advanced Studies focuses on an essential question in a selected career pathway containing three technical credits. Two courses are to be a first and second level course and one enhancement course. The course is applicable to all Career-Technical Education program areas. The course project includes a paper, a working portfolio, a presentation, and a project. As a base for developing the course project, students use knowledge, skills, and attitudes attained from previous courses taken. The project must be of sufficient depth to require extensive review of literature. With mentor assistance and interviews, the project should lend itself to identification of a problem, examination of possible solutions or directions, and analysis of the impact of solutions.

In addition, they will write, speak, solve problems, and use life skills such as time management and organization. Students work under the guidance of a Career-Technical Education teacher/facilitator in collaboration with community partners, business representatives, and other school-based personnel. Skill development and career-technical student organization leadership activities provide opportunities to apply instructional competencies and workplace readiness skills to authentic experiences. **The student in CTE Advanced Studies will be evaluated by using the four course rubrics in this guide. Beginning with the 2006-2007 freshman class, if the student chooses to use the Advanced Studies course as their GRADUATION PROJECT, he/she will be evaluated using the “STATE ENDORSED RUBRICS”, which will be added Summer 2007.**

INTRODUCTION, continued

Description, continued

Characteristics of the Advanced Studies course include the following:

1. Research-focused in a career pathway
2. Problem-based teaching/learning
3. Performance-based assessment
4. Learning and assessment connected
5. Culminating experience
6. Collaborative work between school and community resources
7. Student centered
8. Facilitation/coaching
9. Integrated learning
10. Worked-Based Learning

Enrollment: 16

Recommended Hours of Instruction: 135 - 180

Prerequisite: **Three technical credits within a program area.** See the *Career-Technical Education Standard Course of Study, 2002* for prerequisite details for each program area offering an Advanced Studies course.

As students focus on areas of study, teachers/facilitators are encouraged to use the Building Career Pathways document as a guide for assisting students. The ten career Pathways, established by the North Carolina Community College System (NCCCS), are used as a part of the model for illustrating Advanced Studies as a performance-based assessment course.

The ten NCCCS career pathways are:

1. Agricultural and Natural Resources Technologies
2. Biological and Chemical Technologies
3. Business Technologies
4. Commercial and Artistic Projection Technologies
5. Construction Technologies
6. Engineering Technologies
7. Health Sciences
8. Industrial Technologies
9. Public Service Technologies
10. Transport Systems Technologies

Career-Technical Education courses in the high schools are listed in the pathways identified above on the following pages.

Career/Technical Requirements for College Tech Prep and Career Prep Courses of Study for Entering Ninth Graders of 2004-05

Agricultural and Natural Resources Technologies
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No.	
6145	Career Management
6235/6615	Small Business/Entrepreneurship: BE/ME
6411	Computer Applications I
6514	Digital Communication Systems
6810	Agriscience Applications
6811	Agricultural Projection I
6812	Agricultural Projection II*
6821	Animal Science II*
6823	Animal Science II - Small Animal*
6825	Equine Science I
6826	Equine Science II*
6831	Agricultural Mechanics I
6832	Agricultural Mechanics II*
6833	Agricultural Mechanics II - Small Engines*
6841	Horticulture I
6842	Horticulture II*
6843	Horticulture II - Turf Grass*
6851	Environmental & Natural Resources I
6852	Environmental & Natural Resources II*
6871	Biotechnology and Agriscience Research I
6872	Biotechnology and Agriscience Research II*
6882	Horticulture II - Landscape Construction*
6896	Agricultural Apprenticeship Method*
6899	Agricultural Advanced Studies*
6897/6898	Agricultural Co-op Method/Internship
7661	Welding Technology I
7801/8006	Scientific and Technical Visualization I/T&I/TE
7921	Drafting I

Biological and Chemical Technologies

No.	
6145	Career Management
6235/6615	Small Business/Entrepreneurship: BE/ME
6411	Computer Applications I
6514	Digital Communication Systems
6871	Biotechnology and Agriscience Research I
7015	Teen Living
7045	Foods I - Fundamentals
7046	Foods II – Advanced
7085	Life Management
7121	Culinary Arts and Hospitality I
7196	Family and Consumer Sciences Apprenticeship Method*
7197/7198	Family and Consumer Sciences Co-op Method/Internship
7199	Family and Consumer Sciences Advanced Studies*
7200	Biomedical Technology
7901/8006	Scientific and Technical Visualization I
8011	Principles of Technology I
8110	Fundamentals of Technology
7075	Foods II - Food Science*

Business Technologies

No.	
2508	Advanced Placement (AP) Computer Science A
2512	Advanced Placement (AP) Computer Science AB
6145	Career Management
6200/6600	Principles of Business and Personal Finance: BE/ME
6215	Business Law
6225	Business Management and Applications*
6227/6640	International Baccalaureate (IB) Business Management: BE/ME
6235/6615	Small Business/Entrepreneurship:* BE/ME
6311	Computerized Accounting I
6312	Computerized Accounting II*
6334/6648	National Academy Foundation (NAF) Academy of Finance I: BE/ME
6335/6649	National Academy Foundation (NAF) Academy of Finance II: BE/ME*
6340	Foundations of Information Technology
6341/7980	Networking I: BE/T&I
6345/6347/6346	Network Administration II*
6411	Computer Applications I
6412	Computer Applications II*
6421	Computer Programming I
6422	Computer Programming II*
6423	National Academy Foundation (NAF) of Information Technology I
6424	National Academy Foundation (NAF) of Informational Technology II: BE*
6430	International Baccalaureate (IB) Information Technology
6514	Digital Communication Systems

Business Technologies cont.

6415	e-Commerce I
6416	e-Commerce II*
6535	Business and Electronic Communications
6596	Business Apprenticeship Method*
6597/6598	Business Co-op Method/Internship
6599	Business Advanced Studies*
6646	National Academy Foundation (NAF) Academy of Travel and Tourism I
6647	National Academy Foundation (NAF) Academy of Travel and Tourism II*
6621	Marketing
6622	Marketing Management*
6626	Strategic Marketing*
6631	Fashion Merchandising
6645	Travel, Tourism, and Recreation Marketing*
6665	Marketing Technology and Media*
6696	Marketing Apprenticeship Method*
6697/6698	Marketing Co-op Method/Internship
6699	Marketing Advanced Studies*
6670	Sports and Entertainment Marketing I
6671	Sports and Entertainment Marketing II*
7991	Computer Engineering Technology I
7981/7983	Networking Engineering Technology II

Commercial and Artistic Projection Technologies

No.	
6145	Career Management
6235/6615	Small Business/Entrepreneurship: BE/ME
6411	Computer Applications I
6514	Digital Communication Systems
6631	Fashion Merchandising
7015	Teen Living
7035	Apparel Development I
7036	Apparel Development II*
7055	Housing and Interiors I
7056	Housing and Interiors II*
7085	Life Management
7196	Family & Consumer Sciences Apprenticeship Method*
7197/7198	Family and Consumer Sciences Co-op Method/Internship
7199	Family and Consumer Sciences Advanced Studies*
7400	Introduction to Trade and Industrial Education
7821	Trade and Industrial Cooperative Training I
7901/8006	Scientific & Technology Visualization I
7911	Printing Graphics I
7912	Printing Graphics II*
7921	Drafting I
7935	Digital Media I

Commercial and Artistic Projection Technologies -Cont'd.

No.	
7936	Digital Media II*
7996	Trade & Industrial Apprenticeship Method*
7997/7998	Trade & Industrial Co-op Method/Internship
7999	Trade & Industrial Advanced Studies*
8110	Fundamentals of Technology
8125	Communications Systems

Construction Technologies

No.	
6145	Career Management
6235/6615	Small Business/Entrepreneurship: BE/ME
6411	Computer Applications I
6514	Digital Communication Systems
6831	Agricultural Mechanics I
7055	Housing and Interiors I
7400	Intro to Trade & Industrial Education (ITIE)
7621	Furniture and Cabinetmaking I
7622	Furniture and Cabinetmaking II*
7661	Welding Technology
7711	Masonry I
7712	Masonry II*
7713	Masonry III
7721	Construction Technology I
7722	Construction Technology II*
7723	Construction Technology III
7741	Electrical Trades I
7742	Electrical Trades II*
7821	Trade and Industrial Cooperative Training I
7921	Drafting I
7962	Drafting II - Architectural*
7963	Drafting III- Architectural
7996	Trade & Industrial Apprenticeship Method*
7997/7898	Trade & Industrial Co-op Method/Internship
7999	Trade and Industrial Advanced Studies*
8011	Principles of Technology I
8110	Fundamentals of Technology
8141	Structural Systems

Engineering Technologies

No.	
6145	Career Management
6235/6615	Small Business/Entrepreneurship: BE/ME
6340	Foundations of Information Technology
6345/6347/6346	Networking Administration II
6411	Computer Applications I
6514	Digital Communication Systems
7400	Intro to Trade & Industrial Education (ITIE)
7631	Electronics I
7632	Electronics II*
7821	Trade and Industrial Cooperative Training I
7901/8006	Scientific and Technical Visualization I
7902/8007	Scientific and Technical Visualization II*
7921	Drafting I
7935	Digital Media I
7972	Drafting II - Engineering*
7973	Drafting III – Engineering
7980/6341	Networking I: T&I/BE
7981/7983	Network Engineering Technology II*
7982/7984	Network Engineering Technology III
7991	Computer Engineering Technology I
7992	Computer Engineering Technology II*
7996	Trade & Industrial Apprenticeship Method*
7997/7998	Trade & Industrial Education Co-op Method/Internship
7999	Trade & Industrial Advanced Studies*
8005	Technology Advanced Studies*
8011	Principles of Technology I
8012	Principles of Technology II*
8110	Fundamentals of Technology
8115	Manufacturing Systems*
8120	PLTW Pre-Engineering I
8121	PLTW Pre-Engineering II*
8125	Communication Systems*
8126	Transportation Systems*
8141	Structural Systems*
8196	Technology Apprenticeship Method*
8198	Technology Education Careers Internship

Health Sciences

No.	
6145	Career Management
6235/6615	Small Business/Entrepreneurship: BE/ME
6411	Computer Applications I
6514	Digital Communication Systems
7045	Foods I - Fundamentals
7065	Parenting and Child Development
7200	Biomedical Technology
7210	Health Team Relations
7211	Allied Health Sciences I
7212	Allied Health Sciences II*
7221	Medical Sciences I
7222	Medical Sciences II*
7296	Health Science Apprenticeship Method*
7298	Health Careers Internship
7299	Health Science Advanced Studies*

Industrial Technologies

No.	
6145	Career Management
6235/6615	Small Business/Entrepreneurship: BE/ME
6411	Computer Applications I
6514	Digital Communication Systems
7400	Intro to Trade & Industrial Education (ITIE)
7631	Electronics I
7641	Metals Manufacturing Technology I
7642	Metals Manufacturing Technology II*
7661	Welding Technology I
7662	Welding Technology II*
7821	Trade and Industrial Cooperative Training I
7822	Trade and Industrial Cooperative Training II*
7921	Drafting I
7996	Trade & Industrial Apprenticeship Method*
7997/7998	Trade & Industrial Co-op Method/Internship
7999	Trade and Industrial Advanced Studies*
8011	Principles of Technology I
8012	Principles of Technology II
8110	Fundamentals of Technology
8115	Manufacturing Systems

Public Service Technologies

No.	
6145	Career Management
6235/6615	Small Business/Entrepreneurship: BE/ME
6411	Computer Applications I
6514	Digital Communication Systems
7015	Teen Living
7035	Apparel Development I
7045	Foods I - Fundamentals
7046	Foods II - Advanced*
7055	Housing and Interiors I
7065	Parenting & Child Development
7085	Life Management
7111	Early Childhood Education I
7112	Early Childhood Education II*
7121	Culinary Arts and Hospitality I
7122	Culinary Arts and Hospitality II*
7196	Family & Consumer Sciences Apprenticeship Method*
7197/7198	Family & Consumer Sciences Co-op Method/Internship
7199	Family & Consumer Sciences Advanced Studies*
7810	Cosmetology - Introduction
7811	Cosmetology I
7812	Cosmetology II*

Transport Systems Technologies

No.	
6145	Career Management
6235/6615	Small Business/Entrepreneurship: BE/ME
6411	Computer Applications I
6514	Digital Communication Systems
7400	Intro to Trade & Industrial Education (ITIE)
7511	Automotive Service Technology I
7512	Automotive Service Technology II*
7513	Automotive Service Technology III
7521	Collision Repair Technology I
7522	Collision Repair Technology II*
7631	Electronics I
7921	Drafting I
7996	Trade & Industrial Apprenticeship Method*
7997/7998	Trade & Industrial Co-op Method/Internship
7999	Trade and Industrial Advanced Studies*
8011	Principles of Technology I
8110	Fundamentals of Technology
8125	Transportation Systems
7821	Trade and Industrial Cooperative Training I

TIMELINES

Teacher Timeline

The teacher timeline is as follows. It may be adapted for alternative schedules.

<p>First 9 weeks (Block Schedule) or First Semester (Traditional Schedule)</p>	<ul style="list-style-type: none"> • Orientation to course and research processes • Individual brainstorming conferences • Journal format and processes • Letter of intent/parent permission form due • Approve research topic • Approve mentor(s) • Provide further instruction in research • Outline and thesis statement due • Writing and preparing preliminary draft • Private student/teacher conferences
<p>Second 9 weeks (Block Schedule) or Second Semester (Traditional Schedule)</p>	<ul style="list-style-type: none"> • Keyed preliminary draft due • Project log checks • Final paper due • Project due • Portfolio due • Practice speeches in class • Selection and confirmation of evaluators • Presentations

TIMELINES, continued

Student Timeline

The student timeline is as follows. It may be adapted for alternative schedules.

<p>First 9 weeks (Block Schedule) or First Semester (Traditional Schedule)</p>	<ul style="list-style-type: none"> • Start log of activities • Select appropriate research topic • Select mentor • Secure approval of topic • Begin research • Begin journal • Maintain log of activities • Continue research • Complete progress check #1
<p>Second 9 weeks (Block Schedule) or Second Semester (Traditional Schedule)</p>	<ul style="list-style-type: none"> • Maintain log of activities • Continue research • Submit rough draft for review • Complete progress check #2 and #3 • Submit description of project for approval • Submit essay and works cited • Work on project • Maintain log of activities • Submit project for evaluation • Practice on presentation skills • Present • Evaluate experience

Roles

Once students enter high school, the roles of the principals, administrators, teachers, counselors, parents, community and the students themselves become vital to their preparedness for meeting the requirements of the Exit Standards. Those roles include:

- **Principals and other administrators**
 - Create a culture of high academic and behavioral expectations.
 - Establish a communication plan with other administrators, students, parents, and representatives of community organizations.
 - Provide parent, student and community information (brochures, newsletter, video, etc.).
 - Form a broad-based local work team, 15-25 individuals depending on school size, to serve on school improvement team. Parents should be a central part.
 - Support professional development for teachers and staff that is based on identified needs from school-based data.
 - Conduct student awareness sessions on:
 - meeting all requirements of the Exit Standards, including review and retest guidelines as used in the grades 3, 5 and 8 gateways.
 - accessing interventions.
 - using acceleration strategies.
 - Establish a budget and timeline for staff development, resources, interventions and acceleration methods/programs.

- **Teachers, counselors and staff**
 - Actively support the culture of high academic and behavioral expectations.
 - Participate in training on new exit standards, their role and the implementation of new policies for graduation success.
 - Participate in training on use of innovative pedagogy, e.g. project-based instruction and other contextual approaches.
 - Implement effective teaching strategies in support of the *North Carolina Standard Course of Study* and the rigorous Exit Standards.
 - Develop detailed PEPs for all students that target interventions and/or acceleration.

- **Parents**
 - Participate in awareness sessions (what they can do to prepare their child).
 - Access information (brochures, newsletter, video, etc.).
 - Support their child in meeting the requirements of the Exit Standards.
 - Join a broad-based local work team, 15-25 individuals depending on school size, to serve on school improvement team.

- **Students**
 - Participate in awareness sessions (how to meet requirements).
 - Take personal responsibility for meeting the requirements of the Exit Standards.
 - Take the most rigorous high school program available.

- **Community members**
 - Participate in awareness sessions regarding requirements of the Exit Standards.
 - Serve on graduation project panel.
 - Serve as mentors to students.
 - Support student endeavors to complete the graduation project.

North Carolina's Department of Public Instruction plays a vital role in the successful implementation of the new High School Exit Standards. Communication with all stakeholders begins with regional discussions, encouraging positive public relations, and developing avenues of communication (brochures, videos, letters, websites, etc.)

COMPONENTS of ADVANCED STUDIES

Components Requirements in the Advanced Studies courses include a paper, a portfolio, presentation, and a project. Students select a problem to solve within their career pathway.

Paper The preparation of a research paper is required by every student. Students are to select a topic that has application and implications within their chosen career pathway and lends it to performing a skill or producing a project. Guidelines for selecting the topic should be established by the teacher. The paper uses the acquisition of knowledge through researching,

writing, interviewing, and synthesizing in conjunction with applying real-world skills of time management, organization, self-discipline, persistence, and problem solving. The recommended length of the paper should be 8 to 10 typed, double-spaced pages, with a minimum of five primary and secondary sources. Paper may include additional supporting documentation such as pictures, charts, graphs, etc.

Project

The project is an appropriate and logical extension of a research paper. It demonstrates the application of acquired knowledge through a reflective, physical, and/or intellectual stretch. The project may reinforce real-world skills, such as decision-making, problem solving, and time management. Outside class work is required.

Presentation

A five-to-seven minute presentation must be delivered before a panel of evaluators. A question and answer period should follow the presentation. The panel should be composed of educators and community members with knowledge or background relevant to the project area. The presentation should culminate the Advanced Studies course work.

Working Portfolio

The working portfolio consists of two types of evidences. One type of evidence includes the student's efforts, progress, and achievement during the entire time span of the course. Examples of this type of evidence are representative samples of work correlated to course competency goals, such as homework tasks, quizzes and tests, logs, written work, survey results, self-assessment tools, independent and cooperative projects, video and audio tapes, observation checklists, rough drafts of assignments, and completed individual and group projects. The second type of evidence includes such items as the project or project components and a résumé to be used in employment attainment or further education pursuit. This portfolio provides evaluators and the student with a road map through the Advanced Studies course and a summary of the growth that is achieved. The final project from this course should be a part of the student's portfolio that can be shared with a prospective employer or postsecondary institution.

Work-Based Learning

For additional enrichment, the student may choose to be involved in a work-based learning opportunity.

IMPLEMENTATION of ADVANCED STUDIES

Steps

Implementation steps are as follows. A teacher/facilitator(s) should:

1. Provide student orientation
2. Establish schedule and deadlines
3. Establish criteria for each component
4. Approve topics
5. Guide students in selecting a mentor
6. Provide instruction on research and information retrieval
7. Review and evaluate check lists
8. Approve project selection
9. Provide instruction on public speaking
10. Schedule presentations
11. Arrange for judging of presentations
12. Request evaluation of presentation from judges, community members, and mentors

IMPLEMENTATION, continued

Topic Selection Guidelines

Topic selection guidelines are as follows:

1. The topic of interest should be selected by the student, but not a topic in which the student is already an expert.
2. The topic should be broad enough to allow the student access to sufficient information, yet specific enough to make the research scope reasonable.
3. The topic may require cumulative knowledge across grade levels and content. An integrated topic is encouraged.
4. The topic should be challenging and require both an academic and creative s-t-r-e-t-c-h for the student.
5. The topic should further the student's knowledge in a particular area of study and/or advance the student's knowledge and skills for the purpose of pursuing a career or furthering education in a particular area.
6. The topic should be research based.
7. Students should avoid choosing topics that might involve excessive expenses.
8. Students should not choose topics that might endanger themselves or others.
9. Students should use good judgment in selecting topics that are appropriate for presentation to the judges and the general public. Parental involvement and approval is required.
10. Students may choose a topic that could dovetail with a state or national career-technical student organization competitive event.

IMPLEMENTATION, continued

Topic

Examples

Agriculture Education

Topic: Comparison of Growth Rates of Common Fescue Varieties

Project: Development of a variety trail to compare growth rates

Topic: Use of garlic as an alternative method of fly control in cattle

Project: Development of a trail to compare use of garlic vs. traditional fly control projects.

Topic: Comparison of Alternative Energy Source Engines

Project: Development of an alternative energy engine prototype

Topic: A Study of Marketing Strategies for Alternative Crops

Project: A student activity for Alternative Crop Growers

Business Education

Topic: Emerging Technology

Project: Analyze and test the capabilities of using a virtual reality browser

Topic: Computers and Security

Project: Compare/contrast two websites dedicated to identifying viruses and hoaxes. Example: McAfee and Symantec

Topic: Comparison of Small Business Accounting Systems Project: Customized accounting system for a small business

Topic: Comparison of Computer Network Systems

Project: Customized network system for a small business

Family and Consumer Sciences Education

Topic: Comparison of history of fashion in relationship to changes in the economy.

Project: Make five different garments representing different time frames in history and our economy

Topic: Comparison of the Dietary Needs of the Elderly

Project: Student activity on dietary needs of the elderly

Topic: Comparison of Community After-School Care Programs

Project: After-school care business plan

Health Occupations Education

Topic: Neurosurgery

Project: Work based learning – job shadowing neurosurgery

Topic: Mammography

Project: Work based learning – job shadowing mammography technical

Topic: Dentistry/Orthodontics

Project: Work based learning – job shadowing with a dentist/orthodontist

Topic: Play Therapy

Project: Toy individualized for specific disability

Topic: Organ Transplants

Project: Public relations campaign on being an organ donor

Marketing Education

Topic: International Marketing

Project: A written proposal for an international business venture

Topic: Entrepreneurship Written Project

Project: A business plan to include financing

Topic: Promotion

Project: A pre-opening/promotion plan for a new business

Technology Education

Topic: Comparison of Computer-Integrated Manufacturing Methods

Project: Prototype/simulation of an integrated manufacturing system

Topic: Advanced Communication Technologies

Project: Video projection using advanced communication technology

Topic: Biotechnologies: Problems regarding human health, agricultural and Zoo technic projection, and environmental protection

Project: Design a package that will prevent the misuse or accidental poisoning by pesticides

Topic: The use of microorganisms or biological substances to perform specific industrial or manufacturing processes

Project: Design a system that will prevent the accidental release of genetically modified fish into the environment

Trade and Industrial Education

Topic: A Study of Heating and Cooling Effects on the Weld Zone

Project: Employee training program on heat treatment of medals

Topic: Feasibility Study on Upgrading Computers

Project: Small business/school computer program upgrade initiative

Topic: Student Online Teaching

Project: Multimedia presentation on cleaning computers

Topic: Architectural Drafting

Project: Two story residential plans to be submitted to county planning board

IMPLEMENTATION, continued

Best Practices

- Students maintain daily journal during work based learning experience and while completing their project.
- Mentors can be obtained from the community, retired persons associations, other educators, other professionals.
- Use hands on equipment as a type of show and tell – to be included as part of the presentation.
- Projects may be used as a service project for the community and/or school.
- The student may use computers in research. Provide the student with appropriate websites.
- Agriculture Advanced Studies student may use their Agriscience Fair project as a guideline for completing requirements for Student may complete a number of small projects instead of one large project.
- The student may set up a three to four week mini internship in the student's career area.
- The student may use a mock job interviews with community and business partner, include and evaluation of the resume. Video the interviews.
- The student may utilize “Blackboard” as a host for the class and allow students to work at their own pace.
- Time logs and daily journals are strongly suggested to document the students work.
- The teacher will reinforce reading comprehension and writing skills.
- The teacher will require students to complete sample job and college applications forms.
- Projects should be the result of a student generated idea.
- Allow students to join and coordinate an expanded CTSO event and/or leadership position.
- Provide opportunities for students to make presentations to community or civic organizations.
- The student may expand the project/presentation to an expanded CTSO competitive event.

IMPLEMENTATION, continued

Select Mentor

The teacher will reference the 2006 Graduation Project Implementation Guide for guidelines in selecting an Advanced Studies Mentor.

Research Guidelines

Sources to be used and persons who might contribute need to be listed. Primary sources of information include interviews and surveys that students conduct themselves such as a scientist's actual notes, a work of literature, and an autobiography. Secondary sources include textbooks, reference books, articles, literary criticism, and written material discussing any primary information. This is an exploration, investigation, discovery, or decision about the chosen topic. It must be understood that even when information is paraphrased rather than directly quoted from a source, it must be cited. The more sources that are researched the less likely to use another author's identical words.

Writing the Paper

The paper is to be a carefully developed, third person exploration of the student's research of facts and ideas. The two types of papers that will fulfill the requirements of a research paper are a report-type paper and an interpretive paper. The report-type paper may entail the use of statistics, maps, graphs, illustrations, or tables, and is a compilation of detailed information carefully organized and documented, on a well-defined topic. The interpretive paper gives the writer the opportunity to develop a thesis or conclusion based upon what his or her research shows. The writer interprets the research and draws a conclusion. An important element for students to concentrate on is the organization of the paper.

The length of the paper may depend upon the nature of the topic. The paper is about three thousand words in length or about 8 to 10 typed, double-spaced pages, not including the title page, outline, bibliography and/or supporting documents. Only one general encyclopedia may be used as a reference in the final bibliography, which must contain at least five sources of reference.

The working draft or "rough" draft is usually not given to the teacher/facilitator(s). Revising and refining the draft(s) will reflect proficiency. Careless errors will be costly to the final grade.

IMPLEMENTATION, continued

Interviews Conducting interviews can be very helpful if the student is prepared prior to the interview. Proper interviewing skills should be used. An immediate follow-up is expected and required. Guidelines that are helpful are listed below:

FOR THE TEACHER:

Before the Interview

- Research the person to be interviewed
 - Individual's position
 - Background and education -Special skills and experiences
 - Interviewee's employer
- Define the purpose of the interview
- Prepare questions
 - Reflect the purpose, research, and knowledge
 - Organize logically (simple to complex, objective to factual or personal)
- Gather materials
 - Pen/pencil, paper, tape recorder

FOR THE STUDENT:

For the Interview

- Dress appropriately
- Be punctual (10 minutes early)
- Use professional introductions, firm handshake, smile, and eye contact
- State purpose of interview
- Thank the interviewee for his/her time
- Ask permission to use tape recorder
- Stay on task during the interview
- Listen for leads and formulate new questions
- Ask for clarification
- Ask for an answer to be repeated as needed
- Honor "off the record" remarks

IMPLEMENTATION, continued

Speech Preparation

Step 1: Identify the focus of the speech. The student should explore the following questions:

- How are the paper and project connected?
- What emotions were experienced doing the project (anger, excitement, pride, frustration)?
- What problems were encountered (money, time management)?
- What personal growth took place (self-knowledge, knowledge of topic)?
- How does the project affect future plans?
- What project advice can be passed on to others?

Step 2: Presentation strategies

- Organization
 - Use 3 x 5 cards
 - Put blank cards in spaces where visual aid is needed
 - Add blank cards for the introduction and conclusion
 - Use a card to identify a display and photographs
 - Add idea cards to fill in details, colorful anecdotes, and factual information
 - Make sure cards are in order
- Introduction
 - Grab attention
 - Make the topic thesis clear (mention paper and project)
 - Use no more than 30 seconds
- Conclusion
 - Restate the topic/thesis
 - Leave the audience thinking
 - Use no more than 30 seconds
- Display
 - Will it be an on-going, integral part of the speech such as a slide show or will it be a part of the introduction, happen after the conclusion, wear it, or serve samples?
 - Avoid passing items around during the speech since it causes too much distraction.
 - If using visual aids, plan the structure of the items.
 - Order audio-visual equipment needed.

Step 3: Speech techniques

- Eye contact
- Posture
- Voice
- Gestures
- Props

IMPLEMENTATION, continued

Speech Preparation, continued

Step 4: Develop questions; make educated guesses. The student should brainstorm the following questions:

- What would you want to know if you were judging a speech?
- What questions would you like your audience to ask?
- Does the project contain unusual qualities that might spark interests?
- Will a particular part of the paper make people curious?
- Are there any controversial topics, if so, do you touch on them?
- Why did you choose this topic?
- Who was instrumental in helping you choose your topic?
- How did you finance the project?
- How much time did you spend completing the project?
- Does this project double as credit for any other class

Advanced Studies Implementation Guide

Student Documents

(Please print a copy of these documents for each Advanced Studies Student)

Course Numbers

Agricultural Education Advanced Studies - 6899

Business Advanced Studies - 6599

Family and Consumer Sciences Advanced Studies - 7199

Health Science Advanced Studies - 7299

Marketing Advanced Studies - 6699

Technology Advanced Studies - 8005

Trade and Industrial Education Advanced Studies - 7999

Issued by

Career-Technical Education

Public Schools of North Carolina

State Board of Education • Department of Public Instruction

Raleigh, NC 27601 - 2825

Revision Summer 2006

Project Proposal Form

This form must be submitted and approved by an appropriate CTE instructor and a parent/guardian.

1. Describe the topic which you plan to research and the area in the CTE department to which it associates.
2. Why are you interested in this topic?
3. Have you had any previous experience(s) related to this topic? If so, what were they?
4. What do you hope to gain from your research investigation?
5. What courses have you completed in a “career pathway” that makes you a candidate for an Advanced Studies class?
6. How does this topic relate to your career goals?
7. What kind of visual project do you propose to present with your research?

I have discussed with my parents the responsibilities associated with an Advanced Studies Class. My parents/guardians are aware that this may require work outside the school setting. Also, they are aware that I will be working on a research paper, a portfolio, a project and a presentation for this course.

Parent/Guardian Signature

Student Signature

CTE Instructor

Approval Date

Documents

Project Application Approval Form

Student _____

Topic to be researched:

Check one:

_____ I have discussed this project with the student and find it is ACCEPTABLE.

_____ I have discussed this project with the student and find it is UNACCEPTABLE.

Comments, suggestions, or concerns:

Parents' Signature(s) _____ Date _____

_____ Date _____

Check one:

_____ I have discussed this project with the student and find it is ACCEPTABLE.

_____ I have discussed this project with the student and find it is UNACCEPTABLE.

Comments, suggestions, or concerns:

Mentor's Signature _____ Date _____

Check one:

_____ I have discussed this project with the student and find it is ACCEPTABLE.

_____ I have discussed this project with the student and find it is UNACCEPTABLE.

Comments, suggestions, or concerns:

Teacher's Signature Date

Project Contract Form

Description: Advanced Studies is a culminating course that focuses on a problem or issue in a selected pathway.

Student

Requirements: The course includes:

1. A research paper.
2. A project (which reflects or corresponds with the essential question originally chosen).
3. A presentation.
4. A working portfolio.
5. An optional work-based learning opportunity.

The project: Requirements of the project include:

1. Knowledge and skills attained from previous CTE courses.
2. Sufficient depth to require and extensive review of the literature.
3. Involvement of mentor assistance and interviews.
4. Must lend itself to the identification of research topic.
5. Must examine possible solutions or directions.
6. Must analyze the impact of the solutions.

The student:

1. Will select a research topic focusing on a chosen career pathway, which can be developed and answered with research and will have a visual completed project.
2. Will develop a written proposal approved by the instructor before the beginning of the project.
3. Will write, speak, solve problems, and use real life skills such as time management and organizations.
4. Will work with the teacher/facilitator in collaboration with community partners, business representatives, and other school-based personnel in development of the project.
5. Will present the completed project work before a committee composed of the teacher/facilitator, community partner, business representative or school personnel.
6. Will keep a daily work log and record hours involved and write a research paper (maximum 8 to 10 pages, additional pages may include supporting documents i.e. pictures, graphs, etc.).
7. Will maintain a mentor log.
8. Will complete weekly log of events.
9. Will turn in a completed portfolio, research paper, project, and other evidence two weeks prior to the end of the course or time deemed by the instructor.
10. Optional: Complete a work-based learning experience relating to the pathway.
11. Optional: Join the CTSO pertaining to the selected pathway.

I _____ have read and understand the above requirements involving the Advanced Studies Program. I agree to abide by the requirements. I will conduct myself with the utmost professionalism in working with school and community leaders. I understand that once the project is started it must be completed within the _____ school year two weeks prior to the end of the course. I understand that it is necessary for me to work with my mentor outside of the regular school hours. I realize that my success will depend on my ability to work between school and community resources. I understand any part of this course that results in no completion (paper, project, presentation, job shadowing, and portfolio) can result in a failing grade in this course. Each part of this course depends on the other parts and therefore, I understand in order to receive a final grade all parts have to be completed.

Student signature: _____ Date: _____

Parent Signature: _____ Date: _____

Project Daily Log (must be included in portfolio)

Below is a mini calendar. List what you hope to accomplish on each day. Consider tasks like arranging for an interview, purchasing materials, ordering special materials needed, working on project for one hour, or arranging for teacher conference. This reflects work completed on a daily basis to support the Advanced Study credit requirements. A daily log of activities is required for each week of the Advanced Study Course.

WEEK OF _____

MONDAY:

TUESDAY:

WEDNESDAY:

THURSDAY:

FRIDAY:

Evaluation of the work listed on form.

1. I completed _____ tasks this week.
2. Check all tasks completed.
3. If all your tasks were not accomplished, explain why.
4. What are the next steps? List your next set of goals in order of priority. Include any missed from this week.
5. List and explain any problems you are experiencing in completing any of your tasks.
6. Do you need to conference with your teacher/mentor?

Mentor Confirmation Form

Student _____

Mentor _____

Mentor Job Title _____

Mentor Contact Information _____

Topic _____

I understand the responsibility entrusted to me as an Advanced Studies Mentor and will oversee the above student's progress during this project.

Comments:

Signature of Teacher

Signature of Mentor

Date

Date

Mentor Log

Student _____

Topic _____

Mentor _____

Date	Purpose of Interaction	Recommendation	Initials

Project – Guidelines

Project guidelines are as follows:

- The project must be student-generated.
- The proposed project must be approved by a teacher(s) and the student's parents.
- The project must show evidence of knowledge gained in completion of the research paper.
- The project should not require large expenditures. Expenditures will not enhance the evaluation of the project.
- The project must be of sufficient depth to reflect extensive study and research.
- The project must relate to the student's career pathway.

Project – Description Form

Student _____ Date _____

Topic of Project _____

Description of Project:

- Describe the project and its purpose.

- Discuss prior knowledge, if any about the project. Where was the knowledge obtained?

What form will your project take? (Check all that apply.)

- | | |
|----------------------------|--------------------------|
| _____ computer disk, CD | _____ art work |
| _____ video | _____ photography |
| _____ audio recording | _____ model/construction |
| _____ charts, maps, graphs | _____ community service |
| _____ other (explain) | |

1. What materials will you need?

2. What, if any, expenses do you anticipate?

3. How much time do you estimate will be required to create this project?

_____ Approved _____ Not Approved

Teacher: _____ Date: _____

Student: _____ Date: _____

Project Task Analysis Form

Name _____ Date _____

Task Analysis: List all tasks you must complete to finalize your project. Think through all steps involved and the time needed for each task. What materials do you need to find? What literature do you need to read? Are there any people you need to talk to for advice? (Add additional tasks as needed)

1.

2.

3.

4.

5.

6.

7.

8.

Project Timeline

Prioritize your tasks from the previous list indicating required dates of completion

	TASK	APPROXIMATE COMPLETION DATE
1		
2		
3		
4		
5		
6		
7		
8		

Project Progress Check Form

Student _____

Topic of Project _____

In what form(s) have you accumulated information?

_____ notes	_____ electronic format
_____ videos	_____ photographs
_____ audio recording	_____ other (explain)
_____ survey results	

Using the performance criteria set in the Project Rating Sheet the student will complete self evaluations throughout the progress of the project. The paper and the rating sheet will then be presented to the teacher for review. The student will use the information obtained in the self evaluation process along with the teacher evaluations to strive for exemplary proficiency.

FIRST REVIEW:

Date of first review by student _____
(Attach a completed *PROJECT RATING SHEET*)

Date of first review by teacher _____
(Attach a completed *PROJECT RATING SHEET*)

EXPLANATION OF CORRECTIVE ACTIONS TAKEN BY THE STUDENT BASED ON SUGGESTIONS AFTER REVIEW:

SECOND REVIEW:

Date of second review by student _____
(Attach a completed *PROJECT RATING SHEET*)

Date of second review by teacher _____
(Attach a completed *PROJECT RATING SHEET*)

EXPLANATION OF CORRECTIVE ACTIONS TAKEN BY THE STUDENT BASED ON SUGGESTIONS AFTER REVIEWS:

Project Progress Check Form, continued

FINAL REVIEW AND ASSIGNMENT OF GRADE:

Date of submission of Project _____
(Attach a completed *PROJECT RATING SHEET*)

Teacher completed *PROJECT RATING SHEET* with grade.

Final grade of Project based on performance criteria.

Project Grade Assigned by Teacher _____

Dear Parent,

Please sign below to indicate you have received this information regarding the progress of your student.

1st Review _____
Parent Signature Date

2nd Review _____
Parent Signature Date

Final Grade _____
Parent Signature Date

PROJECT RATING SHEET

Teacher Name: _____

Student Name: _____

CATEGORY	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1	TOTAL
APPEARANCE	Project appearance is neat, grabs and holds interest.	Project appearance is neat and holds interest.	Project appearance is neat.	Student did not submit a Project.	
USE OF TIME	Project demonstrates a high level of efficiently used time.	Project demonstrates time used somewhat efficiently.	Project does not demonstrate efficient use of time.	Student did not submit a Project.	
CONTENT	Project contains exemplary examples of information from research.	Project contains some information from research.	Project contains little or no information from research.	Student did not submit a Project.	
INFORMATION	Project contains information gained from research and shows a high level of insight from research.	Project contains some information contained from research, but shows little insight.	Project contains information directly copied from text.	Student did not submit a Project.	
RELEVANCE	Project shows strong evidence of relation to the career goals of the student.	Project shows some evidence of relation to the career goals of the student.	Project shows no evidence of relation to the career goals of the student.	Student did not submit a Project	
TOTAL POINTS WITH CONVERSION CHART TO GRADE	37 to 50 = B+/A+	25 to 36 = C+/B-	24-12 = C/D-	11 or less = F	

Weekly Performance and Progress Chart

Below is a mini calendar. List what you hope to accomplish on each day. Consider things like arranging for an interview, purchasing materials, ordering special materials needed, working on project for one hour, or arranging for teacher conference.

Name _____ Week Beginning /Week Ending _____

	DESCRIPTION OF PROGRESS TOWARD COMPLETION OF PROJECT
MONDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY/SUNDAY	

Reflection of Weekly Performance and Progress by the student:

1. List and explain problems you are experiencing in completing your tasks.

2. Do you need a conference with your teacher? Yes No

Date of Conference: _____

Results of Conference:

Research Paper – Research Guidelines

Guidelines for research are as follows.

1. Research is an integral component of the course. Students are expected to make a diligent and critical inquiry into their topics. The recommended length of the paper should be 8 to 10 typed, double-spaced pages, with a minimum of five primary and secondary sources. Paper may include additional supporting documentation such as pictures, charts, graphs, etc.
2. Each paper must cite a minimum of five different sources. Students should strive for variety and balance in their selections. Only one general encyclopedia may be used as a reference in the final bibliography.
3. Students should learn to examine and interpret research in terms of possible bias, validity, reliability, and credibility.
4. Research may take a variety of forms, primary and secondary, traditional and non-traditional. Students may design and administer surveys, conduct interviews, access on-line databases, or consult portable database projects. Students should tailor the type of research to the topic of research.
5. Students must carefully document all research information in their papers. This should include parenthetical documentation within the paper and a list of works cited at the end of the paper.
6. Students should apply the most recent edition of a standard form of writing style that includes the appropriate documentation within the paper and a list of works cited at the end of the paper.
7. Students should be thoroughly informed of research ethics.
8. Students should be thoroughly informed that acts of plagiarism will result in a failing grade.

Research Paper – Progress Report (must be included in portfolio)

Using the performance criteria set in the Research Paper Rating Sheet the student will complete self-evaluations throughout the progress of the research paper. The paper and the rating sheet will then be presented to the teacher for review. The student will use the information obtained in the self-evaluation process along with the teacher evaluations to strive for exemplary proficiency.

FIRST REVIEW:

Date of first review by student _____
(Attach a completed RESEARCH PAPER RATING SHEET)

Date of first review by teacher _____
(Attach a completed RESEARCH PAPER RATING SHEET)
There is evidence of plagiarism. Explain _____
There is no evidence of plagiarism. _____

Explanation of corrective actions taken by the student based on suggestions after reviews:

SECOND REVIEW:

Date of second review by student _____
(Attach a completed RESEARCH PAPER RATING SHEET)

Date of second review by teacher _____
(Attach a completed RESEARCH PAPER RATING SHEET)
There is evidence of plagiarism. Explain _____
There is no evidence of plagiarism. _____

Explanation of corrective actions taken by the student based on suggestions after reviews:

FINAL REVIEW AND ASSIGNMENT OF GRADE:

Date of submission of Research Paper _____

(Attach a completed RESEARCH PAPER RATING SHEET)

If evidence of plagiarism is determined the student will receive a failing grade for the Research Paper. Please site evidence of plagiarism. _____

Teacher completed RESEARCH PAPER RATING SHEET with grade.

Final grade of Research Paper based on performance criteria.

Research Paper Grade Assigned by Teacher _____

Dear Parent,

Please sign below to indicate you have received this information regarding the progress of your student.

1st Review _____
Parent Signature Date

2nd Review _____
Parent Signature Date

Final Grade _____
Parent Signature Date

Research Paper Rating Sheet

Teacher Name: _____

Student Name: _____

CATEGORY	Level 4	Level 3	Level 2	Level 1	Total Points
Thesis Statement	Thesis is well developed and defines the topic.	The paper contains a thesis statement; however it cannot be related to the information contained in the research paper.	No thesis statement can be determined.	Student failed to turn in a thesis statement.	
Paragraph Construction	Paragraphs contain explanations and details.	Paragraphs contain few explanations or details.	Paragraphs contain no explanation or details.	Student failed to turn in a research paper.	
Paragraph Construction, Continued	All paragraphs have introductory and concluding sentences.	Some paragraphs have introductory and concluding sentences.	Most paragraphs have no introductory or concluding sentence.	Student failed to turn in a research paper.	
Research Paper/Thesis Statement	Paragraphs work together to develop the thesis.	All paragraphs do not work together to develop the thesis.	The paragraphs do not work together to develop the thesis.	Student failed to turn in a research paper.	
Graphics	Graphics greatly enhance the information in the paper.	Graphics support some of the information in the paper.	Graphics do not work to support the information in the paper.	Student failed to turn in a research paper.	

Research Paper Rating Sheet (continued)

CATEGORY	Level 4	Level 3	Level 2	Level 1	Total Points
Research Evidence	The research paper shows strong evidence of the students own ideas based on research.	The research paper contains some evidence of the students own ideas based on research.	The research paper is a summary of the ideas of others.	Student failed to turn in a research paper.	
Conclusion	Correct grammar is used there are no spelling mistakes.	Correct grammar is used most of the time, few spelling mistakes.	Grammar is incorrect and there are many misspelled words.	Student failed to turn in a research paper.	
Source Validation	The required number of valid sources are cited, they are varied and of high quality.	A less than required number of valid sources are cited, not of high quality.	Only 1 or 2 sources are cited, the sources are of poor quality, or cannot be validated.	Student failed to turn in a research paper.	
Citing Sources	The sources for the research paper, quotes and paraphrases are properly cited.	The sources for the research paper are properly cited, but not all quotes or paraphrases are properly cited.	Sources for the research paper are not properly cited--quotes or paraphrases are not properly cited.	Student failed to turn in a research paper.	
Overall Project	The research paper is attractive and clean.	The research paper is adequate.	The research paper is sloppy or unclean, smudged pages.	Student failed to turn in a research paper.	
Total Points with Conversion Chart to Grade	76 to 100 = B+/A+	75 to 50 = B/C+	49 to 25 =C/D-	24 or less=F	

Presentation - Guidelines

Presentation guidelines are as follows:

1. Students should wait for a signal from evaluators before beginning the presentation or ask them if they are ready.
2. Students should introduce themselves to the evaluators.
3. Students should remember that this is a formal presentation. Dress appropriately. Consult a teacher/facilitator, mentor, or presentation rubric to ensure appropriate selection of attire.
4. Students should not chew gum.
5. Students should be aware of personal body language. Avoid nervous gestures that may adversely affect the presentation.
6. Students should maintain eye contact with evaluators.
7. Students should not read the presentation.
8. Students should be aware that a project is not required for the oral presentation. If a project is used, it should be used to enhance the presentation. It should not constitute the entire presentation, or serve as the sole basis for the presentation.
9. Students should practice the presentation several times until comfortable with its format and content. Time the presentation to be sure that the time limit is not exceeded.
10. Students should practice imagining what questions evaluators might ask and plan answers that might be given. Evaluators may not ask these exact questions, but this will provide an opportunity to practice ahead of time.

Note: Questions should address a clarification or extension of the topic. Evaluators may be trained as to what constitutes appropriate questions.

STUDENT PRESENTATION RATING SHEET

Teacher Name: _____

Student Name: _____

CATEGORY	Level 4	Level 3	Level 2	Level 1	TOTAL
Professional Dress	Student's clothing is appropriate for any type of interview/ presentation.	Student's clothing is appropriate for some types of interviews/ presentations.	Student is not dressed appropriately for interview/ presentation.	Student absent for presentation.	
Organization	Student presents information in logical, interesting sequence which grasps and holds attention.	Student presents information in somewhat logical sequence. The information is covered.	Audience has difficulty following presentation, does not follow logical sequence.	Student absent for presentation.	
Subject Knowledge	Subject knowledge is evident through out the project. All information is clear and correct.	Knowledge us evident in much of the project. Most information is clear and correct.	Some knowledge is evident, but some information is confusing and/or incorrect.	Student absent for presentation.	
Introduction/ Conclusion	The introduction has a sharp focus, and the conclusion is effective.	There is evidence of an introduction and a conclusion.	There is no definite introduction or conclusion.	Student absent for presentation.	
Graphics	Student's graphics explain and reinforce screen text and presentation.	Student's graphics relate to text and presentation.	Student uses graphics that rarely support text and presentation.	Student absent for presentation.	
Mechanics	Presentation has no misspellings or grammatical errors.	Presentation has no more than two misspellings and/or grammatical errors.	Presentation has three or more misspellings and/or grammatical errors.	Student absent for presentation.	

Presentation	Student effectively integrates spoken and visual presentation. A high level of organization and delivery is evidenced. Excellent eye contact and knowledge of subject. Rarely refers to note cards. Presentation meets the required time limit of 4 1/2 to 5 1/2 minutes.	Student integrates spoken and visual presentation. Organization is apparent. Maintains balanced eye contact between audience and note cards. Presentation meets the required time limit of 4 1/2 to 5 1/2 minutes.	Spoken and visual presentation difficult to follow and understand. Little eye contact. Reads material from notes. Presentation is less than 4 1/2 minutes.	Student absent for presentation.	
Use of Technology	Exemplary use of technology demonstrated. Student is skillful and comfortable with technology.	Student uses adequate technology. Examples show little skill or expertise.	Student uses little or no technology in presentation.	Student absent for presentation.	
Pronunciation	Student uses a clear voice with correct, precise pronunciation of terms that all audience members can hear.	Student's voice is clear. Most words are pronounced correctly. Most audience members can hear presentation.	Student mumbles, incorrectly pronounces terms, or speaks too softly for audience to hear.	Student absent for presentation.	
TOTAL POINTS WITH CONVERSION CHART TO GRADE	67 to 90 = B+/A+	43 to 66 = C+/B-	42 to 20 = C/D-	21 or less = F	

Portfolio – Contents

Portfolio Content

The portfolio content, monitoring process, and deadlines should be outlined by a teacher(s) during the initial stages of the course. Listed are suggestions.

1. Current resume
2. Project proposal
3. Project approval
4. Mentor log
5. Project log
6. Research paper
7. Journal entries
8. Description of the project
9. Documentation of related program area mastery. Examples include skills checklist.
10. Written acknowledgment to those who helped in the Student's learning. Send a thank-you note.
11. Photographs or other audio-visual media that document the student's work over the span of the project
12. Appropriate items beyond those required that the student believes important to illustrate his/her progress
13. Copies of Progress Report Sheets

Portfolio – Checklist

Student _____

Teacher _____

Dates to Check Portfolio Items	√	Items to Place in Portfolio
Comments		

Portfolio – Progress Report (must be included in portfolio)

Using the performance criteria set in the Portfolio Rubric, the student will complete self-evaluations throughout the progress of the portfolio. The portfolio and the rating sheet will then be presented to the teacher for review. The student will use the information obtained in the self-evaluation process, along with the teacher evaluations to strive for exemplary performance.

Date of first review by student _____

Attach a completed PORTFOLIO RUBRIC

Date of first review by teacher _____

Attach a completed PORTFOLIO RUBRIC

EXPLANATION OF ACTIONS TAKEN BY THE STUDENT BASED ON SUGGESTIONS AFTER REVIEWS:

Date of second review by student _____

Attach a completed PORTFOLIO RUBRIC

Date of second review by teacher _____

Attach a completed PORTFOLIO RUBRIC

EXPLANATION OF ACTIONS TAKEN BY THE STUDENT BASED ON SUGGESTIONS AFTER REVIEWS:

Date of submission of completed PORTFOLIO _____

Attach a completed PORTFOLIO RUBRIC

Teacher completed PORTFOLIO RUBRIC with grade.

Completed PORTFOLIO RUBRIC showing evidence of student corrections or enhancements to improve grade if necessary.

Final grade of portfolio based on performance criteria. Teacher assigned grade _____.

STUDENT DOCUMENTS, continued

Portfolio – Rubric

Teacher Name: _____

Student Name: _____

CATEGORY	4	3	2	1	Total
Organization	Content is well organized using headings or bulleted lists to group related material.	Uses headings or bulleted lists to organize, but the overall organization of topics appears flawed.	Content is logically organized for the most part.	There was no clear or logical organizational structure, just lots of facts.	
Requirements	All requirements are met and exceeded.	All requirements are met.	One requirement was not completely met.	More than one requirement was not completely met.	
Attractiveness	Makes excellent use of font, color, graphics, effects, etc. to enhance the presentation.	Makes good use of font, color, graphics, effects, etc. to enhance to presentation.	Makes use of font, color, graphics, effects, etc. but occasionally these detract from the presentation content.	Use of font, color, graphics, effects etc. but these often distract from the presentation content.	
Originality	Project shows a large amount of original thought. Ideas are creative and inventive.	Project shows some original thought. Work shows new ideas and insights.	Uses other people's ideas (giving them credit), but there is little evidence of original thinking.	Uses other people's ideas, but does not give them credit.	
Mechanics	No misspellings or grammatical errors.	Three or fewer misspellings and/or mechanical errors.	Four misspellings and/or grammatical errors.	More than 4 errors in spelling or grammar.	
Total Points with Conversion Chart to Grade	34 TO 44 = B+/A+	23 TO 33 = C+/B-	12 TO 22 = D/C+	11 or less = F	

PROBLEM-BASED TEACHING

Problem-Based Teaching Principles

Problem-based teaching fosters active student involvement. The approach enhances learning and deepens student understanding of a subject and promotes lifelong learning. The problem-based teaching approach is founded on several important principles.

1. “Cognitive conflict” stimulates learning and helps determine how the brain will organize what is learned.
2. All learners construct their own knowledge.
3. Meaningful learning requires a rich environment that nurtures substantive interaction with other learning.

Process Goals

An essential component of problem-based teaching is process goals. In order to resolve practical problems, students need two different kinds of knowledge: cognitive knowledge (concepts and principles) and process knowledge (how to solve problems, communicate with others, and manage resources). In the Advanced Studies course, emphasis is placed on four essential process goals.

1. Communication
2. Information
3. Working with Others
4. Management/Leadership

These skills prepare students to function effectively in the workplace and in the community. In addition, these goals are among those identified by the U.S. Department of Labor Secretary’s Commission on Achieving Necessary Skills (SCANS) as essential to success in the workplace and also those identified by the North Carolina Education Standards and Accountability Commission (NCESAC) that all graduates of North Carolina Public Schools need to master to become projective members of a workforce and to succeed in life.

(Optional) Work-Based Learning – Application

Student Name _____ Home Phone Number _____

Address _____

City _____ State _____ Zip _____

Advanced Study Subject Area _____

Teacher Name _____

In what area do you hope to complete a work based learning experience?

Do you have an individual or particular business where you would like to complete a work based learning experience? _____

If yes, please list the individual or business name, and contact number

If your answer is no, efforts will be made by the career counselor and your mentor teacher to locate a person for you to work with in your area of interest. Please be aware that this is not always possible.

Explain how this work based learning experience relates to your Advanced Study.

List courses you have taken that provide knowledge/skills that will be useful in your pursuit of this career.

Student Signature _____ Date _____

Parent Signature _____ Date _____

**(Optional) Work-Based Learning
Student Confidentiality Statement (EXAMPLE)**

(This is used as an example. Confidentiality statements should be created based on the expectations of the program area).

Student
Name _____

Work-Based Learning Contact
Person _____

Business/Agency/Industry Name

I understand that all information obtained during my work-based learning experience whether formally, informally, deliberately, or accidentally is to be kept in strict confidence.

Signature of
Student _____

Date _____

(Optional) Work-Based Learning for Shadowing Experience Teacher Permission Form

Teachers,

As part of the Advanced Study requirements, each student may complete a work based learning experience associated with the career interest to complete the work-based learning requirement. This experience allows the student the opportunity to spend time on a job site and gather information related to the career through observation and questions.

A student must receive the permission of parents, teachers, an administrator, and the mentor teacher in order to participate in a work based learning experience. Permission to participate should not be granted on a day when the student has assignments or tests which cannot be made up. In addition, permission should not be granted if the student has missed an excessive number of days or does not have exemplary behavior in class.

Teachers and students on a traditional schedule will need to reformat this form accordingly to reflect that schedule.

Student's Name _____

Proposed Date of Work-Based Learning Experience _____

Please complete the form for your course and period.

1st _____ yes/no Teacher Signature _____

2nd _____ yes/no Teacher Signature _____

3rd _____ yes/no Teacher Signature _____

4th _____ yes/no Teacher Signature _____

Administrator Signature _____ Date _____

Parent Signature _____ Date _____

Teacher Signature _____ Date _____

(Optional) Work-Based Learning – Student Preparation Form

These questions must be answered prior to the work based learning experience and discussed with the teacher.

Student Name _____

Work Based Learning Site _____

Work Based Learning Date _____

Name of Work Based Learning Contact _____

Phone Number: _____

Complete the questions in paragraph form. Use the back of the page or attach additional sheets if necessary. (Note to teacher) Feel free to add additional questions.

1. What do you know about the company/agency/industry in which you plan to complete your work based learning experience?
2. Why did you choose this company or employer to complete a work based learning experience?
3. What do you hope to learn by completing this work based learning experience?
4. Explain what you know about the outlook for employment and salary expectations of the career you have chosen to shadow.

(Optional) Work-Based Learning – Interview Form

The following questions may be completed during the work-based learning experience. In addition the student is encouraged to identify 5 additional questions to be answered during the work- based learning experience. These questions should be presented and approved by the teacher 3 days prior to the work-based learning experience. All questions should be answered in paragraph form.

Student Name _____

Name of Contact _____

Phone Number: _____

Name of business/industry/agency _____

Date of work based learning experience _____

- ✓ What are the major responsibilities of your job?

- ✓ What do you like about your job?

- ✓ What do you dislike about your job?

- ✓ What are the educational requirements for an entry level job in this career? Is there a possibility for advancement opportunities? What if any additional education is required for advancement?

- ✓ Are there personal characteristics indicated that would help make a person more successful in this career?

- ✓ What are your normal working hours? Are you required or expected to work overtime?

- ✓ Describe your working conditions. Do any of these conditions make your job more challenging or difficult?

- ✓ What suggestions would you give a high school student who is interested in this career?

(Optional) Work-Based Learning – Student Reflection Form

After leaving the company/agency/business at which the work-based learning experience occurred, complete the following questions. All questions should be completed in paragraph form. The back of this page or additional pages may be used if needed.

Student Name _____

Work Based Learning Site _____

Date of Work based learning experience _____

1. What career did you shadow and is this the career you plan to pursue?
2. At the job site, what activities were you permitted to participate?
3. Were you permitted to operate any type of equipment? Please explain why or why not.
4. How did the shadowing experience assist you in clarifying your career goals?
5. What would have made your shadowing experience more meaningful?
6. What things did you learn about your career interest that will help you solidify your career plans?
7. What things did you learn about your career interest that might make you rethink your career plans as they associate to this experience?

(Optional) Work-Based Learning – Closure Activities

Thank You Letter

Upon completion of the work-based learning experience you will write a thank you letter to the person with whom you observed. This letter must be written and mailed within three days of the work based learning experience. Use business letter format. The letter must be typed. The letter must be proof read and approved by your mentor before it is mailed. Keep a copy of the letter with the other documents associated with your Work based learning experience in your portfolio.

Choose one of the following options:

Experience Essay

To complete the work-based learning experience, write an essay about your experience. Use the information you gathered before, during and after the experience.

Daily Journal

To complete the work-based learning experience, include all daily journals logged during your work-based learning experience.

COMPETENCY GOALS

Process Competency Goals Process competency goals define the processes students are to master in Advanced Studies. There are four process competency goals for Advanced Studies: (1) communication, (2) information, (3) working with others, and (4) management/ leadership. Examples of skill mastery should be included in the portfolio where appropriate.

- Goal 1** **Communication**
- Skills
- Speaks and responds
 - Writes
 - Formats and organizes

- Goal 2** **Information**
- Skills
- Researches
 - Applies information to technology
 - Uses appropriate form of technology

- Goal 3** **Working with Others**
- Skills
- Teamwork
 - Helps others learn
 - Responds to requests
 - Negotiates and/or compromises
 - Reaches consensus
 - Identifies conflicts
 - Resolves conflicts
 - Listens without interrupting

- Goal 4** **Management/Leadership**
- Skills
- Learns from models
 - Organizes work
 - Reflects and assesses strengths and weaknesses
 - Involves others in decision making
 - Learns from mistakes
 - Establishes goals
 - Establishes timetables
 - Accepts challenges

COMPETENCY GOALS, continued

Content Competency Goals Content competency goals define the knowledge students are to master in Advanced Studies. There are three content competency goals for Advanced Studies: (1) career pathway development, (2) integrated learning, and (3) workplace applications. Examples of the evidence that can be used to demonstrate mastery are listed below each goal. Such evidence should be included in the portfolio where appropriate.

Goal 1 Career Pathway Development

Students will use skills and knowledge gained from previous career pathway courses to develop a research-based project. Evidence may include the following activities:

- Research a problem compatible with a student's advancement in a given field of study.
- Analyze the impact of technology related to the project -- past, present, and future.
- Analyze future issues inherent in the project.
- Analyze how the project relates to needs and functions of society.
- Analyze how the project influences the nature and structure of work.
- Analyze future employment opportunities related to seeking, obtaining, maintaining, and changing jobs in a chosen career pathway.

Students will implement a plan designed to afford eventual entry into a selected career option. Evidence may include the following activities:

- Prepare a personal inventory of previously acquired skills and experiences needed for the selected career option and those yet to be attained.
- Design a personal school-to-career plan containing specific steps toward attainment of a career goal.
- Demonstrate effective interviewing techniques.
- Report on interviews conducted with potential employers.
- Prepare applications for admission to postsecondary institutions or for potential employment.
- Use work-based learning strategies to implement a personal school-to-career plan.

COMPETENCY GOALS, continued

Goal 2

Integrated Learning

Students will apply interdisciplinary content to authentic workplace problems. Evidence may include the following activities:

- Investigate ways various disciplines can be applied to authentic workplace tasks.
- Prepare an interdisciplinary project to explain how to apply technical knowledge to a particular activity.

Students will solve practical problems using interdisciplinary knowledge and skills. Evidence may include the following activities:

- Use language skills to evaluate work-based learning experiences.
- Maintain an activity log for a project.
- Design a project in coordination with a community business or organization.
- Prepare a report on a work experience which focuses on practical applications of academics.

Students will use interdisciplinary skills in their school, work, and personal activities. Evidence may include the following activities:

- Produce a portfolio that includes several activities using interdisciplinary skills to create or implement a service or project.
- Present historical information on specific careers.

Goal 3

Workplace Applications

Workplace Application - Technology

Students will explain important issues related to a technology-based society and will exhibit ethical behavior in the use of computer and other technologies. Evidence may include the following activities:

- Adhere to Fair Use and Multimedia Guidelines, citing copyrighted resources.
- Explain how job requirements and training are changing because of new technology.

COMPETENCY GOALS, continued

Goal 3, continued

Students will demonstrate knowledge and skills using the computer and other technologies to develop and present a research project. Evidence may include the following activities:

- Use electronic resources for research.
- Present a project using appropriate technology, e.g. multimedia applications.

Students will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

Evidence may include the following activities:

- Complete and analyze a financial plan using appropriate technology.
- Solve a work-related problem using a technological solution.

Workplace Application - Personal Qualities

Students will interact with others in a positive manner. Evidence may include the following activities:

- Volunteer with a local charitable organization.
- Collaborate with other students on a project to improve the community.

Students will demonstrate leadership skills by setting goals, monitoring progress, and improving performance. Evidence may include the following activities:

- Give and accept constructive criticism in a group project.
- Motivate group members.
- Demonstrate leadership skills in a career student organization.

Workplace Applications - Thinking Skills

Students will evaluate facts, solve advanced problems, and make decisions by applying logical and reasoning skills. Evidence may include the following activities:

- Sequence steps in a logical order to implement a project.
- Describe an effective method to evaluate customer interest in the establishment of a new project or service for a business.

COMPETENCY GOALS, continued

Goal 3, continued

Students will organize and process information and apply skills in new ways. Evidence may include the following activities:

- Recognize a problem and design steps to solve the problem.
- Evaluate a variety of options for implementation of a project and select the most effective strategies.

Workplace Application - Managing Information

Students will select and communicate information in an appropriate format (e.g., oral, written, graphic, pictorial, multimedia). Evidence may include the following activities:

- Design a chart to evaluate personal progress toward a goal or objective.
- Prepare a plan for developing a project or service.
- Create criteria that serve to select reliable information.

Students will use technology to acquire, organize, and communicate information by entering, modifying, retrieving, and storing data. Evidence may include the following activities:

- Use the appropriate technology to access and communicate information.
- Format a survey to distribute to local employers for possible participation in a work-based learning program.

Workplace Application - Managing Resources

Students will analyze resources needed to accomplish tasks and activities. Evidence may include the following activities:

- Develop a business plan or project which includes formulating a budget, allocating equipment, and recording expenses and income.
- Create and follow a personal schedule to maximize the use of time.

Students will use resources to complete a task. Evidence may include the following activities:

- Determine how resources should be allocated to accomplish a group task.
- Prepare a long-range budget for an authentic project.

COMPETENCY GOALS, continued

Goal 3, continued

Workplace Application - Interpersonal Skills

Students will demonstrate positive interpersonal skills. Evidence may include the following activities:

- Present facts that support a position.
- Listen to dissenting points of view.
- Reach a shared decision.
- Work with others on a long-term project.

Students will communicate effectively to help others learn.

- Evidence may include the following activities:
- Respond effectively to a dissatisfied colleague or customer.
- Provide feedback to others in a group activity.

Workplace Application - Systems

Students will explore the process of evaluating and modifying systems within an organization. Evidence may include the following activities:

- Survey a group to develop modifications in a procedure or policy.
- Observe procedures for handling a task and develop strategies to improve a system.

Students will explain the relationships among the goals, resources, and functions of an organization. Evidence may include the following activities:

- Write a proposal.
- Prepare an organizational chart.

Workplace Application - Basic Skills

Students will use basic skills (read, write, listen, speak, calculate) to perform a task or solve a problem. Evidence may include the following activities:

- Prepare and present an oral report.
- Write directions for performing a task.
- Apply math concepts to real-world situations.
- Assemble an object using technical support materials.
- Listen to a presentation for the purpose of performing a task.
- Examine a case study to evaluate whether the information contained within it is adequate and accurate/reliable to support generalizations about the topic.

REFERENCES

The following references served as resources for this course. Appreciation goes to these contributors. Their pioneering efforts and insight into new and effective practices in education are to be commended.

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