NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
Dr. R. Scott Ralls, President

March 25, 2010

MEMORANDUM

TO: Presidents
Chief Academic Officers

FROM: Sharon E. Morrissey, Ed.D.
Senior Vice President & Chief Academic Officer

SUBJECT: State Board Action on March 19, 2010

On March 19, 2010, the State Board of Community Colleges approved the attached curriculum courses and curriculum standard for the following new program:

Aerostructure Manufacturing and Repair (A50450)

The State Board of Community Colleges also approved the following curriculum for the Special Application process:

Global Logistics (A25170)

Information about the Special Application process and the complete list of curriculum programs approved for the Special Application process is included in the attached Section of the *Curriculum Procedures Reference Manual*. You may view all curriculum standards, curriculum courses and sections of the *Curriculum Procedures Reference Manual* by visiting the Programs website at:

http://www.nccommunitycolleges.edu/Programs

If you have any questions concerning the State Board action item, please contact Dr. Judith C. Mann at 919-807-7108 or mannj@nccommunitycolleges.edu.

SEM/JF/swj
Attachments
c: Dr. Judith C. Mann
Dr. John Pettitt
Ms. Jennifer Frazelle
Program Coordinators

CC10-011
Email

Aerostructure Manufacturing and Repair

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 110 Aerostructure Shop Prac 2 2 3
Prerequisites: None
Corequisites: None

This course introduces specialized hand tools, equipment, aerostructure components, and assembly plant layouts commonly found in the aerostructure manufacturing industry. Emphasis is placed on precision instruments, identification of aerostructure components, and common procedures used in the manufacturing and repair of aerostructures. Upon completion, students should be able to demonstrate the proper use of tools and equipment common to the manufacturing and repair of aerostructure components.

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 111 Aero Industry Standards 3 0 3
Prerequisites: None
Corequisites: None

This course introduces the aerospace industry's standardized model for quality assurance in design, development and production. Emphasis is placed on how to prepare a process-oriented method of management to meet the quality standards prescribed for the aerospace industry. Upon completion, students should be able to demonstrate an understanding of the concepts and principles of quality assurance and apply them to the work environment.

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 112 Aero Assembly Methods I 1 3 2
Prerequisites: None
Corequisites: None

This course introduces the planning, fabrication, and assembly methods used in aerostructure manufacturing and repair processes. Emphasis is placed on working in teams, fabrication, tooling and assembly processes, change management principles and configuration controls. Upon completion, students should be able to demonstrate an understanding of the concepts and principles used in the manufacturing, assembly and repair of aerostructures.

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 113 Aero Assembly Methods II 1 3 2
Prerequisites: ASM 112
Corequisites: None

This course introduces the advanced-level planning, fabrication, and assembly methods used in aerostructure manufacturing and repair processes. Emphasis is placed on working in teams, advanced-level fabrication, tooling and assembly processes, change management principles, and configuration controls. Upon completion, students should be able to demonstrate an understanding of advanced-level concepts and principles used in the manufacturing, assembly and repair of aerostructures.

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 114 Aerostructure Composites 3 0 3
Prerequisites: None
Corequisites: None

This course introduces provides an overview of the manufacturing of non-metallic aerostructures including associated computer numerical control (CNC) machining. Emphasis is placed on composite materials technology, fiber and resin properties, lay-up and curing procedures, tooling concepts, process planning and materials. Upon completion, students should be able to demonstrate a thorough understanding of the fundamentals of composite structure fabrication methods, materials, and application techniques.

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 115 Composite Repair Proced 2 6 4
Prerequisites: None
Corequisites: None

This course is designed to provide students with general knowledge of techniques used to repair composite aerostructures. Emphasis is placed on procedures involving safe and effective finish removal, disassembling, and the repair and/or replacement of damaged composite components. Upon completion, students should be able to demonstrate proper and safe procedures required for the repair of composite aerostructure components.

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 116 Composite Material Test 2 3 3
Prerequisites: None
Corequisites: None

This course is designed to provide students with general knowledge of the inspection process used during the repair of composite aerostructures. Emphasis is placed on composite material inspection procedures involving nondestructive inspection techniques and procedures. Upon completion, students should be able to demonstrate an understanding of proper and safe procedures involving nondestructive inspection.

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 210 Computer-Aided 3D Appl 2 3 3
Prerequisites: None
Corequisites: None

This course introduces computer aided three-dimensional interactive application (CATIA) software used to develop computerized solid models, parts, and engineering drawings for the aerostructure manufacturing industry. Emphasis is placed on drawing, editing, file management, and plotting of components using CATIA software in an aerostructure manufacturing environment. Upon completion, students should be able to produce and plot computer-aided design (CAD) drawing using CATIA software in an aerostructure manufacturing environment.

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 212 Aerostructure Join Mthds 2 3 3
Prerequisites: None
Corequisites: None

This course provides an introduction to a wide variety of joining processes used in aerostructure manufacturing. Emphasis is placed on conducting technical research for proper process selection and exploring case study examples of industry joining processes for various aerostructure applications. Upon completion, students should be able to demonstrate an understanding of the process of joining composite and metal components using aerostructure assembly techniques and guidelines.

*Effective Term –Fall 2010 [2010*03] – SBCC 03/19/10*
ASM 215 Aero Sheet Metal Struct 1 8 5
Prerequisites: None
Corequisites: None

This course covers tools, maintenance and repair practices employed on modern metallic aircraft. Topics include metallurgy, fastener types and selection, and acceptable practices of repair and maintenance of sheet metal structures. Upon completion, students should be able to select the proper fasteners and procedures to effect proper metallic structure repairs.

CURRICULUM STANDARD

Effective Term
Fall 2010
*[2010*03]*

Curriculum Program Title: **Aerostructure Manufacturing and Repair Technology** Code: **A50450**

Concentration: **(not applicable)**

Curriculum Description

The Aerostructure Manufacturing and Repair Technology curriculum prepares individuals to assemble, fabricate, inspect, manufacture, repair, test and manage the construction of aerostructures in an industrial setting.

Coursework includes materials, production procedures, planning, costing, plant layout, software, quality control, aviation standards and aerostructure assemblies. Emphasis will be placed on aerostructure construction techniques, manufacturing processes, composite manufacturing and repair, and computer numerical control (CNC) machining processes.

Graduates should qualify for employment in aerostructure manufacturing and other similar industries as project assembly and repair technicians, quality testers and inspectors, tooling technicians, composite specialists, fabricators, CNC machinists, project managers and computer-aided design (CAD) technicians.

*Curriculum Requirements**

[for associate degree, diploma, and certificate programs in accordance with 23 NCAC 02E.0204 (3)]

I. General Education. Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.

II. Major Hours. AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work experience, including cooperative education, practicums, and internships, may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. *(See second page for additional information.)*

III. Other Required Hours. A college may include courses to meet graduation or local employer requirements in a certificate, diploma, or associate in applied science program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

	AAS	Diploma	Certificate
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
Total Semester Hours Credit (SHC)	**64-76**	**36-48**	**12-18**

**Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.*

Major Hours

[ref. 23 NCAC 02E.0204 (3)]

A. Core. The subject/course core is comprised of subject areas and/or specific courses which are required for each curriculum program. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the subject/course core of the AAS program.

B. Concentration *(if applicable).* A concentration of study must include a minimum of 12 semester hours credit from required subjects and/or courses. The majority of the course credit hours are unique to the concentration. The required subjects and/or courses that make up the concentration of study are in addition to the required subject/course core.

C. Other Major Hours. Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from any prefix listed, with the exception of prefixes listed in the core or concentration. Work experience, including cooperative education, practicums, and internships, may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit.

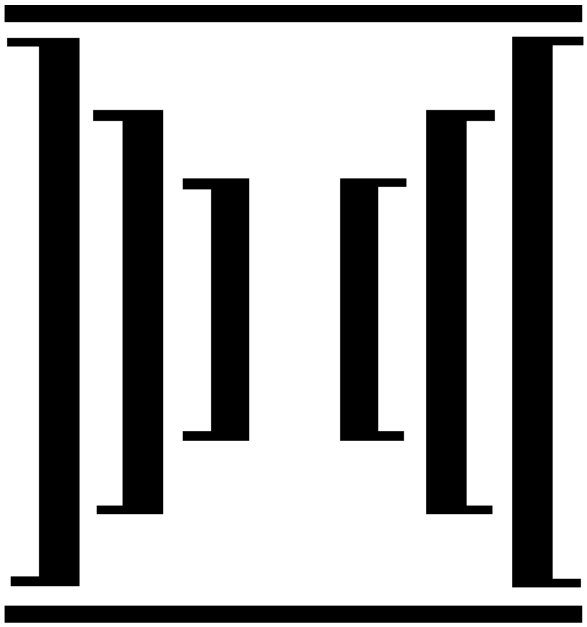
Aerostructure Manufacturing and Repair Technology A50450

			AAS	Diploma	Certificate
Minimum Major Hours Required			**49 SHC**	**30 SHC**	**12 SHC**
A.	**CORE**		**27-32 SHC**	**12 SHC**	
	*Courses required for the diploma are designated with **				
Required Courses:					
*	ASM 110	Aerostructure Shop Prac 3 SHC			
*	ASM 111	Aero Industry Standards 3 SHC			
*	ASM 112	Aero Assembly Methods I 2 SHC			
*	ASM 113	Aero Assembly Methods II 2 SHC			
Required Subject Areas:					
	ASM 210	Computer-Aided 3D Appl 3 SHC			
	ASM 212	Aerostructure Join Mthds 3 SHC			
*	ISC 112	Industrial Safety 2 SHC			
	MEC 128	CNC Machining Processes 4 SHC			
Structures. Select Composites or Metallic.					
	Composites:				
	ASM 114	Aerostructure Composites 3 SHC			
	ASM 115	Composite Repair Proced 4 SHC			
	ASM 116	Composite Material Test 3 SHC			
	Metallic:				
	ASM 215	Aero Sheet Metal Struct 5 SHC			
B.	**CONCENTRATION** *(Not applicable)*				
C.	**OTHER MAJOR HOURS**				
	To be selected from the following prefixes:				
	AER, ASM, AVI, BPR, CIS, CTS, COE, ISC, MAC, MEC, NDE, PHY, and WLD				
	Foreign language courses (including ASL) that are not designated as approved other major hours may be included in all programs up to a maximum of 3 semester hours of credit.				

SECTION 3A

Special Curriculum Program Application Procedures

North Carolina Community College System



Special Curriculum Program Application Procedures for Selected Curriculums

Approved by the State Board of Community Colleges

Rev. 03/19/10

North Carolina Community College System

Special Curriculum Program Application Process for Selected Curriculum Titles

The State Board of Community Colleges is authorized in to approve curriculum programs (23 NCAC 02E .0201). The State Board has delegated to the President of the North Carolina Community College System the authority to approve new curriculum programs utilizing the special application process for the selected titles that are listed in Attachment 1.

Special Application Process Rationale and Criteria

The following rationale and criteria are used by the System Office staff to assist in determining which curriculum programs should be recommended to the State Board Program Services Committee for placement on the Special Application process list.

Rationale:

There is an immediate or critical need for graduates from the identified program. The special application process allows colleges to respond to industry needs in a timely manner.

Criteria:

Curriculum programs recommended to the State Board for placement on the Special Curriculum Application process list must meet the following criteria to be eligible:

1) There is an urgent and/or critical need for graduates from the identified program or there is a change in licensure requirements by an outside agency that requires immediate compliance.
2) The perceived system-wide impact of the program to colleges is minimal.

The rationale and criteria above were approved by the State Board of Community Colleges on September 13, 2002.

Special Application Process

Colleges should submit:

1) a signed *Institutional Certification Page* (attachment 2);
2) a copy of the current State Board-approved Curriculum Standard;
3) the college's proposed Program of Study; and,
4) the college's proposed Curriculum Model.

The current State Board-approved Curriculum Standard can be retrieved from the Internet by going to the Programs area at the System Office web site: **http://www.nccommunitycolleges.edu/Programs/index.html** (follow the links to the curriculum standards.)

The Program of Study (see the Attachment 3 format) and the Curriculum Model should be designed using the appropriate courses listed in the Combined Course Library (CCL). Refer to Section 9 of the **Curriculum Procedures Reference Manual** for guidelines in completing a Program of Study. The Curriculum Model should list all courses in the Program of Study sequenced by semester and include the course prefix, number, title, contact and credit hours.

Two (2) copies of the application with original signatures on each copy should be submitted to:

Senior Vice President and Chief Academic Officer
North Carolina Community Colleges System Office
5016 Mail Service Center
Raleigh, North Carolina 27699-5016

Attachment 1

Selected Curriculum Titles
Special Application Process

The following curriculums have been approved by the State Board of Community Colleges for the Special Application process:

- Community Spanish Interpreter (A55370)
- Entrepreneurship (A25490)
- Global Logistics (A25170)
- Industrial Systems Technology (A50240)
- Infant/Toddler Care (Certificate)(C55290)
- Information Systems Security (A25270)
- Lateral Entry (Certificate)(C55430)
- Low Impact Development (A40290)
- Medical Office Administration (A25310)
- Networking Technology (A25340*)*
- Sustainability Technologies (A40370)
- Web Technologies (A25290)
- Welding Technology (A50420)

The following curriculums have been approved by the State Board of Community Colleges for the Special Application process but require that the college have prior approval for the Cosmetology (A55140) program:

- Cosmetology Instructor (Certificate)(C55160)
- Esthetics Instructor (Certificate)(C55270)
- Esthetics Technology (Certificate)(C55230)
- Manicuring Instructor (Certificate)(C55380)
- Manicuring/Nail Technology (Certificate)(C55400)

The following curriculums have been approved by the State Board of Community Colleges for the Special Application process but require that the college have prior approval for the Early Childhood Associate (A55220) program:

- Early Childhood Associate/Special Education (A5522A)
- Early Childhood Associate/Teacher Associate (A5522B)

The following curriculum has been approved by the State Board of Community Colleges for the Special Application process but requires that the college have prior approval for the Business Administration (A25120) program:

- Business Administration/Electronic Commerce (A2512I)

The following curriculum has been approved by the State Board of Community Colleges for the Special Application process but requires that the college have prior approval for the Associate Degree Real Estate (A25400) program:

- Real Estate Licensing (Certificate) (C25480)

The following curriculum has been approved by the State Board of Community Colleges for the Special Application process but requires that the college have prior approval for the Human Services Technology (A45380) program:

- Human Services Technology/Social Services (A4538D)

Attachment 2

North Carolina Community College System

CURRICULUM PROGRAM APPLICATION

Each credential granting college must complete this application

College _____ **Date** _____

Program Code _____

Program Title _____

Concentration Title _____
(If applicable)

Credential (*Indicate the highest credential to be awarded*)

☐ **AAS** ☐ **Diploma** ☐ **Certificate**

Proposed Semester and Year of Implementation _____ 20 _____

Contact Person for the Application _____

Phone _____ **Extension** _____ **E-mail** _____

Institutional Certification

This curriculum program will enhance the workforce of North Carolina, will provide educational and training opportunities consistent with the mission of the college, and will not duplicate the opportunities currently offered.

_____
(Community College Name)

has assessed the need for this program and the resources required to maintain a viable program and certifies that the college can operate this program efficiently and effectively within the resources available to the college.

_____ _____
Signature, President *Date*

_____ _____
Signature, Board of Trustees Chair *Date*

NCCCS Office Use Only

Date Received _____ Date Logged in _____

Date to Coordinator _____ Coordinator _____

Attachment 3

Program of Study Format

College Approved or Applying to Offer Program _____ **Date** _____

Program Title _____ **Program Code**_____

Concentration Title _____

(*If applicable)*

Credential (*Indicate the highest credential to be awarded*):

_____ **AAS** _____ **Diploma** _____ **Certificate**

Proposed Semester and Year of Implementation _____**Fall** _____**Spring** _____**Summer** **20**_____

Contact Person _____ **Phone (** **)** _____ **Extension** _____

Email Address _____

Curriculum Description: (*The curriculum description should be the description as listed on the curriculum standard.)*

I. GENERAL EDUCATION

Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.

Course Number/Title	Class	Lab	Clinic/Exp	Credits
1. Required Courses				
2. Required Subject Area(s) *(if applicable)*				
General Education SHC Sub-Total				

II. MAJOR HOURS

The "Major Hours" category includes the core, the concentration (if applicable) and "other major" hours. Work experience, including cooperative education, practicums, and internships, may be included in a degree program up to a maximum of 8 semester hours; in a diploma program up to a maximum of 4 semester hours; and in a certificate program up to a maximum of 2 semester hours.

.

A. Core

Please refer to the curriculum standard for the list of courses that are required for the core. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard, must include a minimum of 12 semester hours credit derived from the subject/course core of the AAS program.

Course Number/Title	Class	Lab	Clinic/Exp	Credits
1. Required Courses				
2. Required Subject Area(s) ***(if applicable)***				
Core SHC Sub-Total				

B. Concentration *(if applicable)*

Please refer to the curriculum standard for the list of courses that are required for the concentration.

Course Number/Title	Class	Lab	Clinic/Exp	Credits
1. Required Courses				
2. Required Subject Area(s) ***(if applicable)***				
Concentration SHC Sub-Total				

C. Other Major Hours

Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from any prefix listed. (Courses from prefixes that are utilized in the core or concentration may exceed 9 semester hours of credit).

Course Number/Title	Class	Lab	Clinic/Exp	Credits
1. Required Courses				
2. Required Subject Area(s) ***(if applicable)***				
Other Major Hours SHC Sub-Total				
Major Hours SHC Sub-Total				

III. OTHER REQUIRED COURSES

A college may include up to a maximum of 7 semester hours of credit in a degree program, 4 semester hours of credit in a diploma program, and 1 semester hour of credit in a certificate program of additional course(s) to meet graduation or local employer requirements. Any course in the Combined Course Library may be utilized in the "other required" area, as long as it is not a restricted or unique course and is determined to be educationally sound for the program.

.

Course Number/Title	Class	Lab	Clinic/Exp	Credits

Other Required Courses SHC Sub-Total

Total Semester Hours Credit in Program

IV. COURSE SUBSTITUTION

Course substitutions may not be made if the credit hours of the course will cause the total credit hours of the program to exceed the maximum hours on the curriculum standard. Core course substitutions may be made <u>only</u> for courses in the arts and sciences discipline area and require the approval of System Office staff.

Course in Program

Course Number/Title	Class	Lab	Clinic/Exp	Credits

Substitute Course(s)

Course Number/Title	Class	Lab	Clinic/Exp	Credits