COWLEY COLLEGE
& Area Vocational Technical School

COURSE PROCEDURE FOR

EDDY CURRENT TESTING II
NDT3468 3 Credit Hours

Student Level:
This course is open to students on the college level in either the freshman or sophomore year and to high school vocational students.

Catalog Description:

NDT 3468 - EDDY CURRENT TESTING II (3 hrs)
This course is a continuation of Eddy Current Testing I, with emphasis on advanced theory and practical skills required in the application of Eddy Current evaluation methods. The course is designed to meet certain NDT Level II requirements in accordance with A.S.N.T. SNT-TC-1A & NAS-410.

Prerequisites:
NDT3467 Eddy Current Testing I or instructor approval.

Controlling Purpose:
This course is designed to impart advanced knowledge and practical skills required for Eddy Current Testing and its applications techniques.

Learner Outcomes:
Upon completion of this course the student will be able to:

1. Describe the generation and function of eddy currents.
2. List and describe the differences in eddy current probe design and function.
3. Choose the correct probe frequency and size for a given test item.
4. List and describe the variables that effect eddy current inspection.
5. Perform a multi-frequency eddy current inspection, and correctly interpret the results.
6. Pass a qualification examination (theory & practice) prepared in accordance with industry standards (SNT-TC 1A & NAS-410).
7 Correctly apply all safety attitudes and procedures associated with Eddy Current testing that will insure a safe work place environment.
8. Apply knowledge of Eddy Current inspection to inspect and report materials comparable to that of a Level II Inspector.

The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

Units Outcomes and Criterion Based Evaluation Key for Core Content:

The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

Evaluation Key:

A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same field.

B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.

C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.

D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.

F = Failing, will be computed in GPA and hours attempted.

N = No instruction or training in this area.

UNIT 1: Advanced Eddy Current Practices Outcomes: Upon completion of this unit, the students will be able to successfully explain and apply advanced principals related to Eddy Current inspection.						
A	B	C	D	F	N	Specific Competencies Demonstrate the ability to:
						Calculate and perform lift-off inspections determining paint thickness.
						Calculate and perform thickness measurements determining missing material.
						Calculate and perform crack detection in five aircraft specimens.

UNIT 2: Test Coil Arrangements And Design

Outcomes: Upon completion of this unit, the students will be able to successfully list and describe test coil arrangements.

A	B	C	D	F	N	Specific Competencies Demonstrate the ability to:
						List and describe the three basic coil configurations.
						List and describe the uses of the basic coil configurations.

UNIT 3: Effects Of Test Object On Coil

Outcomes: upon completion of this unit, the students will be able to successfully describe the effects of the test object on the coil.

A	B	C	D	F	N	Specific Competencies Demonstrate the ability to:
						Demonstrate the five effects the test object has on the coil. Summarize why the effects occur.
						Explain a loaded and unloaded condition of a coil.

UNIT 4: Instrument Systems And Readout Mechanisms

Outcomes: Upon completion of this unit, the student will be able to successfully demonstrate the use of systems and successfully analyze the results.

A	B	C	D	F	N	Specific Competencies Demonstrate the ability to:
						Locate and identify materials using meter and phase analyst equipment.
						Locate and identify defects using meter and phase analysis equipment.

UNIT 5: Applications Of Advanced Inspection Methods Outcomes: Upon completion of this unit, the students will be able to successfully demonstrate the use of phase analysis in locating defects.						
A	B	C	D	F	N	Specific Competencies Demonstrate the ability to:
						Using phase analysis, describe the type and location of defects.
						Using phase analysis, locate and determine thickness of a nonconductive coating.
						Using dual frequency adjust equipment to remove ferrite tube support.

UNIT 6: Eddy Current Test Procedures, Standards And Specifications Outcomes: Upon completion of this unit, the students will be able to successfully list and describe standards used in inspection.						
A	B	C	D	F	N	Specific Competencies Demonstrate the ability to:
						List and describe five standards commonly used in industry.
						List and describe the uses if five aircraft standards.

Projects Required:
As assigned

Textbook:
Contact Bookstore for current textbook.

Materials/Equipment Required:
None

Attendance Policy:
Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:
The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:
Based on classroom occupancy

Course Timeframe:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

402.00 Academic Code of Conduct
263.00 Student Appeal of Course Grades
403.00 Student Code of Conduct

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability, which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.