



COURSE OUTLINE

Outline Status: Outline Update (ECD 10126); 2009-2010

Section I: BASIC COURSE INFORMATION

1. **COLLEGE: L.A. SOUTHWEST COLLEGE**
2. **SUBJECT: ELECTRONICS**
3. **COURSE NUMBER: 057**
4. **COURSE TITLE: COMPUTER CIRCUITS LABORATORY**
5. **UNITS: 1**
6. **CATALOG COURSE DESCRIPTION:**

This laboratory course involves troubleshooting techniques of a microcomputer system in a hands-on lab environment. It includes fault isolation of problems and general repair methods of various PC components and peripherals. It also includes hardware and software and installations. Students will take a system apart and assemble it back together again.

7. **CLASS SCHEDULE COURSE DESCRIPTION:**

Computer fault location and general repair methods. Installation, set-up, and debug of operating systems and hardware.

8. **INITIAL COLLEGE APPROVAL DATE: 1974**
9. **COURSE OUTLINE UPDATE APPROVAL DATE: 11/17/09**

Change in course description; Coreq validation

10. **CLASS HOURS:**

	Standard Hrs Per Week (based On 18 weeks)	Total Hs per Term (hrs per week x 18)	Units
Lecture:	0	0	0
Lab/Activity (w / homework):	0	0	0
Lab/Activity (w /o homework):	3	54	1
Totals:	Lecture: 0	Lecture: 0	Lecture: 0
	Lab: 3	Lab: 54	Lab: 1
	Total: 3	Total: 54	Total: 1
<i>Totals In Protocol:</i>	Lecture: 0	Lecture: 0	
	Lab: 3	Lab: 54	
	Total: 3	Total: 54	Total: 1

11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT:

Note: The LACCD's *Policy on Prerequisites, Corequisites and Advisories* requires that the curriculum committee take a separate action verifying that a course's prerequisite, corequisite or advisory is an 'appropriate and rational measure of a student's readiness to enter the course or program' and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

PREREQUISITES: No

	Subject	Number	Course Title	Units	Validation Approval Date

COREQUISITES: Yes

	Subject	Number	Course Title	Units	Validation Approval Date
	ELECTRONICS	056	COMPUTER CIRCUITS	3	11/17/09

ADVISORIES: No

	Subject	Number	Course Title	Units	Validation Approval Date

12. OTHER LIMITATIONS ON ENROLLMENT: (See Title 5, Section 58106 and Board Rule 8603 for policy on allowable limitations. Other appropriate statutory or regulatory requirements may also apply):

None

Section II: COURSE CONTENT AND OBJECTIVES

1. COURSE CONTENT AND OBJECTIVES:

COURSE CONTENT AND SCOPE - Lecture: Outline the topics included in the lecture portion of the course (<i>Outline reflects course description, all topics covered in class</i>).	Hours per topic	COURSE OBJECTIVES - Lecture: Upon successful completion of this course, the student will be able to.. (<i>Use action verbs - see <u>Bloom's Taxonomy</u> for 'action verbs requiring cognitive outcomes.'</i>)
Total:	0	
Total Hrs In Protocol:	0	

1. (cont'd) LAB:

COURSE CONTENT AND SCOPE - Lab: Outline the topics included in the laboratory portion of the course (<i>Outline reflects course description, all topics covered in class</i>).	Hours per topic	COURSE OBJECTIVES - Lab: Upon successful completion of this course, the student will be able to.. (<i>Use action verbs - see <u>Bloom's Taxonomy</u> for 'action verbs requiring cognitive outcomes.'</i>)
1. Orientation and lab safety Review and discuss system modules names and characteristics	3	A. Identify the names, purpose and characteristics of system modules and PC components and peripherals.
2. Computer Troubleshooting Techniques General Computer Problems	4	B. Choose the appropriate installation and configuration steps in a given scenario.
3. Electricity and Power Supplies Take a computer apart and put it back together Measure the output of Power Supply Replace a power supply	3	C. Recognize ports, cabling, and connectors, by sight.
4. The Motherboard - PC Components Examine and adjust CMOS and BIOS settings Remove and Replace Motherboard Identify motherboard components Identify ports, cabling, and connectors	5	D. Identify proper procedures for installing and configurations common computer devices.
5. I/O Devices Gather information of the System Identify and Solve Hardware Conflicts	3	E. Analyze when and how to upgrade system components.
6. Memory and Hard Drives - PC Components Research RAM Install and Partition a hard drive Format and test hard disk Troubleshoot hard drives	3	F. Recognize basic troubleshooting procedures and tools.
7. Introducing and Comparing Operating Systems Win XP Installation Examine files and directories Investigate Linux and Macintosh OS	4	G. Disassemble and reassemble a system.
8. Understanding Boot Process Command Line Configuration Files Using MMC, RegEdit	3	
9. Comparing and Using XP, Vista, Win2008svr	4	

Use Windows Help and Management Console Use Task Manager and Disk Management		
10. Mass Storage and Multimedia Devices Install a sound card and camera Compare CD and DVD Technologies Install Dual Monitors	3	
11. Connecting PC to a Network Install and Configure NIC Troubleshoot with TCP/IP utilities Solve Network Connectivity Problems	3	
12. Notebooks, PDAs and Printers / Peripherals Examine Notebook Documentation Replace Notebook Hard Drive Install and Share Printer	3	
13. Troubleshooting and Maintenance Produce Help-Desk Procedures Flash BIOS Troubleshoot Hypothetical Situations	3	
14. Building Your Own PC Cover the appropriate installation steps Determine System Requirements Check System Compatibility Evaluate and Upgrade	3	
15. Computer LabSim Using Lab Simulation Software	5	
16. A+ Exam review	2	
Total:	54	
Total Hrs In Protocol:	54	

1. (cont'd) SLO:

The student will.. (outcome)	As measured by the following method.. (assessment strategy)	And, if applicable, scored by the following learning rubric. (provide attachment)	Results are examined to determine if the outcome is achieved. Include planned or actual assessment date. (results & evaluation)	Recommendations to improve teaching and learning. (modifications)
1. Given a specific situation with a faulty system, students will be able to analyze and troubleshoot the presented issue.	Students will be presented with hands-on specific situation to analyze, troubleshoot, and fix. (formative evaluation) e.g., students are asked to analyze hard disk drive problem.	Rubric is outlined in column # 2	Spring 2010	

SLO REVIEWED 11/14/09 GY	<p>ACCEPTABLE -resolve the issue by recommending a workable solution steps and applying the steps as evidence for the problem correction.</p> <p>NEEDS TO IMPROVE -workable solution steps did not resolve the issue and the problem persists.</p> <p>Desirable Outcome: 65% of class should perform in the ACCEPTABLE category.</p>			
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2. REQUIRED TEXTS:

Provide a representative list of textbooks and other required reading; include author, title and date of publication:

A+ Guide to Managing and Maintaining Your PC, Jean Andrews, 2007

3. READING ASSIGNMENTS:

Provide a representative list of textbooks and other required reading; include author, title and date of publication:

CompTIA A+, Charles J. Brooks

4. WRITING ASSIGNMENTS:

Writing assignments, as required by Title 5, in this course may include, but are not limited to the following:

Textbook exercises, Exam Questions. Outline steps of solution for a given situation.

5. REPRESENTATIVE OUTSIDE ASSIGNMENTS (HOMEWORK):

Out of class assignments (Homework) may include, but are not limited to the following:

Internet research on troubleshooting techniques and new PC technology.

6. REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:

Provide examples of assignments, as required by Title 5, that demonstrate critical thinking.

Determine the issues that must be considered when upgrading a PC. In a given scenario determine when and how to upgrade system components. Skills demonstration: Assemble and disassemble a PC.

7. METHODS OF EVALUATION:

Title 5, section 55002 requires grades to be 'based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems

them to be appropriate, by problem solving exercises or skills demonstrations by students.' Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed 'Course Objectives' at the beginning of Section II):

Observation record of student performance. Homework completion. Solving textbook challenges. Quizzes Final exam

8. METHODS OF INSTRUCTION:

Please Check All That Apply

- Lecture
- Discussion
- Laboratory
- Activity
- Field Experience
- Independent Study
- Other (Please Explain)

9. SUPPLIES:

List the supplies the student must provide.

None

10. COMPUTER COMPETENCY:

If applicable, explain how computer competency is included in the course.

Students are expected to become familiar with and knowledgeable about the most popular computer operating systems.

11. INFORMATION COMPETENCY:

If applicable, explain how information competency is included in the course.

N/A

12. DIVERSITY:

If applicable, explain how diversity (e.g., cultural, gender, etc.) is included in the course.

N/A

13. SCANS COMPETENCIES:

(required for all courses with vocational TOP Codes; recommended for all courses)

SCANS (Secretary's Commission on Necessary Skills) are skills the Department of Labor identified, in consultation with business and industry leaders, which reflect the skills necessary for success in the workplace. Check the appropriate boxes to indicate the areas where students will develop the following skills (please note that all SCANS competencies do not apply to all courses):

RESOURCES

- Managing Time:** Selecting relevant goal-related activities, ranking them in order of importance, allocating time to activities, and understanding, preparing and following schedules.
- Managing Money:** Using or preparing budgets, including making cost and revenue forecasts; keeping detailed records to track budget performance, and making appropriate adjustments.
- Managing Material and Facility Resources:** Acquiring, storing, allocating, and distributing materials, supplies, parts, equipment, space or final products in order to make the best use of them.

INTERPERSONAL

- Participating as Member of a Team:** Working cooperatively with others and contributing to group's efforts with ideas, suggestions and effort.
- Teaching Others New Skills:** Helping others learn needed knowledge and skills.
- Exercising Leadership:** Communicating thoughts, feelings, and ideas to justify a position, encouraging, persuading, convincing or otherwise motivating an individual or group, including responsibly challenging existing procedures, policies or authority.
- Negotiating:** Working toward agreement that may involve exchanging specific resources or resolving divergent interests.
- Working with Cultural Diversity:** Working well with men and women and with people from a variety of ethnic, social, or educational backgrounds.

INFORMATION

- Acquiring and Evaluating Information:** Identifying a need for data, obtaining the data from existing sources or creating them, and evaluating their relevance and accuracy.
- Organizing and Maintaining Information:** Organizing, processing and maintaining written or computerized records and other forms of information in a systematic fashion.
- Interpreting and Communicating Information:** Selecting and analyzing information and communicating the results of others, using oral, written, graphic, pictorial, or multimedia methods.

- Using Computers to Process Information:** Employing computers to acquire, organize, analyze and communicate information.

SYSTEMS

- Understanding Systems:** Knowing how social, organizational and technological systems work and operating effectively with them.
- Monitoring and Correcting Performance:** Distinguishing trends, predicting impacts of actions on system operations, diagnosing deviations in the functioning of a system/organization, and taking necessary steps to correct performance.
- Improving or Designs Systems:** Making suggestions to modify existing systems in order to improve the quality of products or services and developing new or alternative systems.

TECHNOLOGY

- Selecting Technology:** Judging which sets of procedures, tools or machines, including computers and their programs, will produce the desired results.
- Applying Technology to Tasks:** Understanding overall intent and proper procedures for setting up and operating machines, including computers and their reprogramming systems.
- Maintaining and Troubleshooting Equipment:** Preventing, identifying, or solving problems with equipment, including computers and other technologies.

Section III: RELATIONSHIP TO COLLEGE PROGRAMS

1. THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM: Yes

a. If yes, the course will be a restricted elective portion of the 'approved program' listed on the State Chancellor's Inventory of Approved Programs (approved programs can be found on the State Chancellor's Office website at <https://misweb.cccco.edu/webproginv/prod/invmenu.htm>)

Computer Servicing Certificate - Program: 093401 State ID: 08445 Electronics Technology AS - Program: 093400 State ID: 02868 Electronics Technology Certificate - Program: 093400 State ID: 02868

2. GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:

a. Area Requested: None

Approval Date:

If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas - Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education -- contained in Board Rule 6201.14 -General Education Requirements.
http://marlin.laccd.edu/district/BoardRules_AdmsRegs/boardrules.htm

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b. Area Requested: None

Approval Date:

If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas - Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education -- contained in Board Rule 6201.14 -General Education Requirements.
http://marlin.laccd.edu/district/BoardRules_AdmsRegs/boardrules.htm

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Section IV: ARTICULATION INFORMATION

(Complete in consultation with College Articulation Officer)

1. TRANSFER STATUS:

a. Transferable to the University of California: No b. UC Approval Date:	c. Transferable to the California State University: Yes d. College Approval Date: 2000
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2. GENERAL EDUCATION FOR TRANSFER:

<p><i>IGETC Certification</i></p> <p>a. Area Requested: b. Date Requested: c. IGETC Approval Date:</p> <p>If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.</p> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 10px;"></div>	<p><i>CSU Certification</i></p> <p>a. Area Requested: b. Date Requested: c. CSU Approval Date:</p> <p>If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.</p> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 10px;"></div>
<p>a. 2nd Area Requested: b. Date Requested: c. IGETC Approval Date:</p> <p>If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.</p> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 10px;"></div>	<p>a. 2nd Area Requested: b. Date Requested: c. CSU Approval Date:</p> <p>If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.</p> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 10px;"></div>

3. MAJOR REQUIREMENT FOR TRANSFER: N/A

Will this course be articulated to meet lower division major requirements?:

List college/university and the majors:

CAN NUMBER: **CAN SEQUENCE #: N/A**

CAN Approval -

Date requested: Date approved:

Section V: SUPPLEMENTAL COURSE INFORMATION

1. **DEPT/DIVISION NAME:** Business
2. **DEPT/DIVISION CODE:** 03
3. **SUBJECT CODE:** 346
4. **SUBJECT ABBREVIATION:** ELECTRN
5. **RECOMMENDED MINIMUM QUALIFICATION AREA:**
6. **ABBREVIATION FOR TRANSCRIPTS:** COMP CIRC LAB
7. **DEGREE CREDIT:**

Indicate whether the course meet the 'standards for approval' for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level: **Degree Applicable**

8. **GRADING METHOD:** LETTER GRADE
9. **REPETITIONS:** # of times repeated for credit: **0**

If this course is repeatable, explain how repetition of this course meets Title 5, section 55041(c)(2)(B):

10. **PRIOR TO TRANSFERABLE LEVEL:**

This course attribute applies to **English, Writing, ESL, reading and mathematics** courses ONLY. If applicable, indicate how many levels below the transferable level this course should be placed: **Not applicable**

11. **CREDIT BASIC SKILLS:**

Title 5, section 55000(j) defines basic skills as 'courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 55002(b).': **No**

12. **CROSS REFERENCE:**

Is this course listed as equivalent in content to existing College/District courses in another discipline?: **No**

If Yes, list courses (documentation of cross-discipline agreement must be provided):

13. **COURSE SPECIFICALLY DESIGNED FOR STUDENTS W/ DISABILITIES:**

Title 5, section 56029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an 'approved special class' for students with disabilities?: **No**

If yes, provide an explanation of how this course meets the requirements of Title 5, section 56029:

14. COOPERATIVE EDUCATION STATUS:

Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education -- i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education - - i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal. Is this course part of the college's approved cooperative work experience education program?: **No**

15. COURSE CLASSIFICATION: Occupational

Note: A course's Classification, TOP Code and SAM code must be aligned: e.g., Courses with an 'Occupational' Course Classification must have an 'Occupational' TOP Code and a SAM Code of A, B, C, or D; courses that do not have an 'Occupational' Course Classification cannot have an Occupational TOP Code and must have an 'E' SAM Code. Courses coded as 'basic skills' in #11 should be coded 'Adult and Secondary Basic Skills.'

16. TOP CODE - (6 digits XXXX.XX): 0934.00

Course content should match discipline description in Taxonomy of Programs found at <http://ecd.laccd.edu/TaxonomyOfPrograms.doccurriculum.htm>

17. SAM CODE (Student Accountability Model): C

18. FUNDING AGENCY CODE:

19. STATE COURSE ID:

Section VI: APPROVAL STATUS

1. APPROVAL STATUS:

		Approval Date Of	Board Date	Requested Effective Semester	Approved Effective Semester
a.	<input type="checkbox"/> New Course	College:	Board: 10/20/95	Effective Semester:	Effective Semester:
b.	<input type="checkbox"/> Addition of Existing District Course	College:	Board:	Effective Semester:	Effective Semester:
c.	<input type="checkbox"/> Course Change*	College:		Effective Semester:	Effective Semester:
d.	<input checked="" type="checkbox"/> Outline Update	College: 11/17/09			Effective Semester:
e.	<input type="checkbox"/> New Course	College:		Effective Semester:	Effective Semester:
f.	<input type="checkbox"/> New Course	College:	Board:	Effective Semester:	Effective Semester:

* Changes to a course require the completion of a 'Course Change Request' form and approval by the college's Curriculum Committee. In some cases districtwide approval is also required; see, Administrative Regulation E-65, section 3(c) for details.

Section VII: APPROVAL INFORMATION FOR NEW OR ADDED COURSES

(complete in consultation with Department Chair and the appropriate Academic Administrator)

N/A – Existing Course

1. **ORIGINATOR: EI-khoury, Naja**

2. **DEPARTMENT: 03**

3. **IF THIS IS A NEW COURSE, INDICATE HOW THE COLLEGE PLANS TO MEET THE EXPENSE OF THIS COURSE:**

By additional funds. Describe:

By deleting courses from the college catalog and course database. List specific courses to be deleted:

By deleting sections of existing course. List courses and number of sections to be deleted:

FIRST YEAR: SECOND YEAR: THIRD YEAR:

By rotating sections of existing courses. List courses and number of sections to be rotated, as well as the semesters in which they will be offered:

4. **IMPACT**

IMPACT -- Will this course directly impact other course offerings and/or associate degree or certificate programs on campus? (If yes, briefly explain how)

5. **METHOD OF SUPPORT**

-- Indicate how the college plans to support the proposed course:

Additional staff -- List additional staff needed:

Classroom -- List classroom type needed:

Lab

Equipment -- List new equipment needed and indicate funding source for any new equipment:

Computers are on hand for the class.

Supplies- List supplies and indicate dollar value:

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Library/Learning Resources- The course initiator shall consult with the College Librarian and review the college library, book, periodical, and electronic resource collections relevant to this course. List additional titles and resources to be considered for purchase as funding permits:

Library has enough books on hand.

CERTIFICATION AND RECOMMENDATION

- This course meets Title 5 requirements for Associate Degree applicable college credit towards an Associate Degree.
- This course meets Title 5 requirements but does not satisfy the requirements for an Associate Degree applicable course.

We certify that the information and answers above properly represent this course.

Nouha Toure / N. El Khoury	11/17/2009
Originator	Date
Nouha Toure	11/17/2009
Department/Cluster Chairperson	Date
Linda Larson-Singer	11/17/2009
Articulation Officer	Date
Ramon Miramontes	11/17/2009
Librarian	Date
Elmer Bugg	11/17/2009
Dean (if applicable)	Date
Linda Larson-Singer	11/17/2009
Curriculum Committee Chairperson	Date
Allison Moore	11/24/2009
Academic Senate President	Date
Mary Callahan	12/08/2009
Vice President, Academic Affairs	Date

Section VIII: ADDENDA

(Uploaded Documents)

Prerequisite Document	Coreq., Electr 57	<u>Electronics57,ECD,coreq,1109.doc</u>
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CONTENT REVIEW FOR PREREQUISITE VALIDATION**Target Course & Number, Title: ELECTRN 57, Computer Circuits Laboratory**

(Course to which pre/corequisite/advisory applies)

Check
Applicable
Box

 Prerequisite: Corequisite: **Course & Number, Title: ELECTRN 56, Computer Circuits** Advisory:

- A. **Target Course Entry Skills: Course & Number, Title: ELECTRN 57, Computer Circuits Laboratory**
(For prerequisites/corequisites, list specific skills and/or knowledge necessary for students to succeed in the target class. For advisories, list skills/knowledge which will enrich or deepen the student's knowledge obtained from the course but without which the student may still succeed in the course. Attach additional sheet if necessary. NUMBER EACH SKILL.)

1. Understanding of Windows Operating Systems and utilities.
2. Knowledge of IDE devices and hard drives.
3. Knowledge of different types of motherboards.

- B. **Corequisite Skills Provided By Prerequisite/Corequisite/Advisory Course or Assessment:**
Course & Number, Title: ELECTRN 56, Computer Circuits

(List specific skills and/or knowledge that are the outcome of the prerequisite/corequisite/advisory course or assessment. For courses already in the curriculum, these should be present in the course objectives in the course outline. Attach additional sheet if necessary. NUMBER EACH SKILL.)

1. Examine Microsoft Windows Operating Systems elements and utilities including Windows Explorer, Device Manager, Memory Management, Windows Explorer, Recovery Console Backup Tools, File Protection, Emergency Repair Process, Microsoft Management Console, Performance Monitoring and Optimization, Error Messages.
2. Analyze and configure common IDE devices such as hard drives including storage devices.
3. Identify different types of motherboards and recognize port, cabling, and connectors.

CONTENT REVIEW SKILLS MATRIX FOR PREREQUISITE VALIDATION

**COURSE & NUMBER, Title: ELECTRN 57, Computer Circuits Laboratory
Entering Skills of Target Course**

**ELECTRN 56
Computer Circuits
Corequisite Skills**

	1	2	3	4	5	6	7	8	9
1	X								
2		X							
3			X						
4									
5									
6									
7									
8									

Comments:

(Include justification for assessments, health and safety, or non-course prerequisites)

Validation requires at least one match of each entry skill with each exit skill.

Was validation achieved? YES

PARTICIPANTS IN CONTENT REVIEW:

(Signatories should include instructors for both exit and entering skills courses.)

Name: N. El Khoury / N. Toure Title: _____ Initial: NT Date: 11/17/2009

Name: _____ Title: _____ Initial: _____ Date: _____

Name: _____ Title: _____ Initial: _____ Date: _____

CERTIFIED BY:

Nouha Toure _____ 11/17/2009
Initiator Date

Nouha Toure _____ 11/17/2009
Department Chairperson Date

Linda Larson-Singer _____ 11/17/2009
Curriculum Chairperson Date