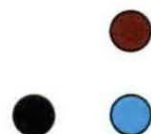


Summary
Program Review
Welding
Technology
Summer 2006



SUMMARY OF THE CURRICULUM REVIEW SELF-STUDY PROCESS

COURSE CATALOG DESCRIPTION REVIEW SUMMARY:

Information listed in the college catalog on these eight courses is accurate and up to date.

SYLLABUS REVIEW SUMMARY:

1. All adjuncts in the welding program follow the course syllabus put together by the discipline; therefore, there is no discrepancy in course syllabus from one adjunct to another.
2. All mandatory items (per FMA and Federal Law) are listed in all eight-course syllabi.
3. All recommended items (per Academic Senate) are included, except "Disclaimer Allowing for Reasonable Revisions." This has a 0% inclusion.
4. In the list of optional items all course, syllabi list only one out of eight items i.e. "Semester Meeting Times & Room. The other seven items are missing
5. All course syllabi will updated to include all recommended items and the discipline will be advised on the inclusion of missing seven optional items

ENROLLMENT TRENDS AND STUDENT RETENTION REVIEW SUMMARY:

The increase in enrollment within the program over the last ten year is a total of 58.1%. The enrollment has been consistent for the past three years and based on facility and equipment limitations the enrollment will in all probability stay consistent with this trend. The student course completion rate of 90.9% and the steady enrollment for the last three years could be indication of a high student retention rate.

DISCIPLINE/PROGRAM NEEDS AND RESOURCES REVIEW SUMMARY:

The welding program would benefit from a larger facility with better lighting and more up-to-date equipment. Full-time faculty responsible for the program will definitely help in keeping the program current and will enhance the enrollment. On the curriculum side, it would be beneficial to develop an associate degree program that would transfer to other institutions.

If the plan to build the new technology building is realized, then perhaps the welding program could be housed in a larger and more modern facility. This would also justify the development of an associate degree program and the hiring of full-time faculty for the welding program.

SUMMARY (PROE) PART II

INPUT FROM THE INTERNAL AND EXTERNAL COMMUNITY REVIEW SUMMARY

It seems that the majority of the advisory committee members agree about the college meeting the expectations and the current course offerings. There also seems to be a concern from the majority about receiving current information on the program in a timely fashion. The majority of the advisory committee members are of the opinion that they do not have a substantial input into the decision making process.

It would be advisable to meet the advisory committee members on a more frequent basis and to clarify their role as an external input source. It would be beneficial to clarify the fact that the college does take their advice seriously and that the advisory members understand that it is not always possible to implement all of their suggestions.

COMPARABLE COURSES/PROGRAMS AND TRANSFER REVIEW SUMMARY:

Most two-year colleges that offer technical courses have welding certificate program. Transfer from one junior college to another is not common; therefore, there was no real urgency to set up articulation agreements. Once Oakland Community College decides to offer an associate degree program it would be beneficial to develop transfer agreements.

OUTCOMES ASSESSMENT REVIEW SUMMARY:

Coordinator: Obtain the most recent copy of your Program Assessment from the Office of Assessment and Effectiveness. Please attach it to your Summary Report.

Assessment results are available for the year 2003-2004.

Findings 1

Of 16 students, 100% achieved the benchmark level of 90% in MIG project.

Findings 2

Of 17 students, 100% achieved the benchmark level of 90% in TIG project.

Findings 3

Of 9 students, 100% achieved the benchmark level of 90% on pipe project.



OAKLAND
COMMUNITY
COLLEGE

COLLEGE
CURRICULUM
REVIEW
COMMITTEE

WELCOME TO THE CURRICULUM REVIEW
SELF-STUDY PROCESS

Discipline/Program Welding Coordinator(s) Tahir Khan

CRC Mentor Gail Mays Review Date: 6/02/06

Thank you for agreeing to coordinate the Curriculum Review in your area. As Discipline/Program Review Coordinator, it is your responsibility to make sure the steps detailed below are completed by the Review Date. Your packet includes instructions and forms for completing the Review. If needed, a CRC mentor is available to you. Your Dean will also be able to provide meaningful assistance in completing this important task.

In the Part I-Core Review, the College asks your discipline/program to analyze its curriculum from a variety of perspectives. These include course offerings and contents, enrollment/retention, transfer trends, and plans for the future. An additional section of activities is contained in Part II. The nature of these review activities will depend on whether you are a member of a Discipline or a Program.

Included in this document to help you work on your review are: 1) Data Collection forms to distribute to your Discipline/Program colleagues and 2) Data Analysis forms with summary sections to help you complete your review. After filling out these forms, you will finalize your review by re-printing all of the summary sections on one Summary Report Form for submission.

Once again, thank you for agreeing to work on this very important process with your colleagues. Together we will constantly strive to ensure the excellence of instruction at OCC.

College Curriculum Review Membership
2005-2006

Lin Armitage (HL)
Thomas Boozer (AH)
Nadia Boulos (HL)
Charlott Couch (RO/SF)
Jennifer Craft (AH)

Diane Hill (OR)
Tony Ingram (OR)
Shelley Larson (RO/SF)
David Mathews (RO/SF)
Gail Mays (AH)-Chair

Janet Peart (AH)
Letyna Roberts (ex-officio)
Karen Robinson (HL)
Beverly Stanbrough (RO/SF)
Bob Zemke (OR)

CRC PART I-CORE REVIEW

Coordinator: Data Collection and Data Analysis forms for the following review areas are attached.

A. CATALOG COURSE DESCRIPTIONS

- Please reproduce copies of all your Discipline/Program course catalog descriptions, and distribute them to the full-time members of the Discipline/Program with the Data Collection form asking the faculty to comment on whether the catalog course descriptions are accurate, clear, and current.
- Analyze the responses in order to determine where there is a need for revision.

B. SYLLABI

- Collect all syllabi from all full-time and adjunct faculty for all sections of all courses listed in the catalog under your Discipline/Program.
- Analyze where there are inconsistencies or omissions in the syllabi.

C. ENROLLMENT TRENDS AND STUDENT RETENTION

- Collect the Dashboard enrollment and retention data for the current and last academic year (available from the Office of Assessment and Effectiveness).
- Analyze areas of strength and weakness. Discuss, where applicable, student recruitment and student retention strategies that your Discipline/Program participates in currently or intends to implement in the future.

D. DISCIPLINE/PROGRAM NEEDS AND RESOURCES

- Collect information on the Discipline/Program's current and anticipated needs and resources by distributing the Data Collection form to all full and adjunct faculty.
- Discuss what resources and staff development activities your Discipline/Program needs and also indicate necessary curriculum changes/revisions where appropriate.

**Welding Technology (WEL.CT)
Certificate Program Auburn Hills**

This program, leading to a Certificate in Welding, prepares the student to enter the occupational area of welding. The program will provide the student with the knowledge and skills needed to gain job entry into a wide variety of welding occupations. Some courses in this program prepare the student for State Certification testing.

| Requirements | Credits |
|---|----------------|
| <u>ATW 1120</u> Introduction to Gas/Arc/MIG/TIG Welding | 3 |
| <u>ATW 8110</u> Arc Welding, Flat and Horizontal Positions | 3 |
| <u>ATW 8120</u> Arc Welding, Vertical, Up and Overhead Positions | 3 |
| <u>ATW 8210</u> Introduction to Gas Welding | 3 |
| <u>ATW 8220</u> Adv. Gas Welding Applications, Gas and Plasma Cutting | 3 |
| <u>ATW 8310</u> Metal Inert Gas Welding (MIG) | 3 |
| <u>ATW 8320</u> Tungsten Inert Gas Welding (TIG) | 3 |
| <u>ATW 8410</u> Pipe Welding, all Positions | 3 |
| <u>ROB 1640</u> Interpolated/Welding Robotic Applications | 4 |
| Total Credits | 28 |

(ATW) WELDING TECHNOLOGY

ATW 1120 3 Credits

Introduction to Gas/Arc/MIG/TIG Welding The student will be introduced to the four basic welding processes: gas (oxyacetylene), arc (shielded metal arc welding), MIG (gas metal arc) and TIG (gas tungsten arc) welding. The student will learn proper set up and operating procedures through classroom demonstrations. Special emphasis is placed on safety principles. Course/lab fees.

ATW 8110 3 Credits

Arc Welding, Flat and Horizontal Positions The student will be introduced to the skill area of arc welding. Related theory of arc welding as well as demonstrations of various techniques will be included. The student will perform several types of arc welding objectives and will become familiar with various types of rod as well as different types of welding machines. The student will gain limited arc welding experience. Course/lab fees.

ATW 8120 3 Credits

Arc Welding, Vertical, Up and Overhead Positions

Prerequisite: ATW 8110.

The student will be introduced to various shapes of structural steel and their applications. A basic knowledge of arc welding is required for the student to perform welding operations on various types of structural members and several types of welding applications. The student will develop limited skill levels of structural welding as well as limited welding experience. Course/lab fees.

ATW 8210 3 Credits

Introduction to Gas Welding

The student will be introduced to several types of gas welding as well as all related gas welding equipment. The student will perform several types of welds using the oxygen/acetylene torch and related equipment. Textbook, films, movies and demonstrations will serve as the related instruction to gain limited gas welding abilities. Course/lab fees.

ATW 8220 3 Credits

Advanced Gas Welding Applications, Gas and Plasma Cutting

Prerequisite: ATW 8210.

The student will gain a working knowledge of gas welding and burning equipment and techniques. Several performance objectives will be executed by the student with the aid of the related instruction from textbooks, films, movies and demonstrations. The student will gain limited welding and burning abilities as well as a limited amount of work experience. All performances will be executed in a safe and proper manner. Course/lab fees.

ATW 8310 3 Credits

Metal Inert Gas Welding (MIG)

The student will be introduced to the inert gas arc welding technique as well as the concept of flux free arc welding. Theory of machine operation and joining techniques will be introduced through textbooks, films, movies and demonstrations. The student will perform several objectives and thereby gain valuable work experience and abilities on ferrous and nonferrous metals. Safe and proper work habits and procedures will be practiced. Course/lab fees.

8320 3 Credits

Tungsten Inert Gas Welding (TIG)

The student will display a working knowledge of T.I.G. welding including the related theory involved with inert gas arc welding. Many welding techniques are involved for proper fusion and joining of ferrous and, primarily, nonferrous metals. Proper identification of parent metals as well as filler wire and rods will be displayed by the student. Safe and proper work habits and procedures will be insisted upon by the instructor. Course/lab fees.

ATW 8410 3 Credits

Pipe Welding, All Positions

Prerequisites: ATW 8110, ATW 8120.

The student will perform cutting, beveling, fitting, clamping and welding operations on steel pipe. Various types of welding operations will be performed to include oxyacetylene, arc and metal inert gas (M.I.G.) welding. Sectioning and testing operations as well as grain analysis and fatigue calculations will be done by the student. Course/lab fees.

ROB 1640 4 Credits

Interpolated/Welding Robotic Applications

Prerequisites: ROB 1620

The student will program and operate robotic welding systems using resistance and arc welding technologies. The course will include laboratory hands-on experience in basic welding fundamentals. Robotic weld schedules will be used to enable robot welding applications using Gas Metal Arc Welding. Resistance welding programs will also be studied by the student. Students will use robotic simulation for complex motions and welding applications. Course/lab fees.

DATA ANALYSIS

CORE REVIEW

A. COURSE CATALOG DESCRIPTION

Coordinator: Complete this form after reviewing the Course Catalog Data Collection forms from members of your Discipline/Program on all of the courses listed in the Catalog.

List every course that is listed in the catalog. Check where revision is indicated or no revisions seem necessary. Please, add lines where needed.

| | Revision needed | No Revision necessary |
|-------------------------------|-----------------|-----------------------|
| Course Number <u>ATW 1120</u> | ___ | ___ ✓ |
| Course Number <u>ATW 8110</u> | ___ | ___ ✓ |
| Course Number <u>ATW 8120</u> | ___ | ___ ✓ |
| Course Number <u>ATW 8210</u> | ___ | ___ ✓ |
| Course Number <u>ATW 8220</u> | ___ | ___ ✓ |
| Course Number <u>ATW 8310</u> | ___ | ___ ✓ |
| Course Number <u>ATW 8320</u> | ___ | ___ ✓ |
| Course Number <u>ATW 8410</u> | ___ | ___ ✓ |
| Course Number _____ | ___ | ___ |
| Course Number _____ | ___ | ___ |

COURSE CATALOG DESCRIPTION REVIEW SUMMARY:

Information listed in the college catalog on these eight courses is accurate and up to date.

DATA ANALYSIS

CORE REVIEW

B. SYLLABUS REVIEW, CONTINUED

Coordinator: After reviewing the Data Analysis forms on all the courses in the Discipline/Program, please summarize your analysis of whether or not there are course syllabi in your Discipline/Program that need revision due to inconsistencies or omissions, or other issues.

SYLLABUS REVIEW SUMMARY:

- All adjuncts in the welding program follow the course syllabus put together by the discipline; therefore there is no discrepancy in course syllabus from one adjunct to another.
- All mandatory items (per FMA and Federal Law) are listed in all eight course syllabi.
- All recommended items (per Academic Senate) are included, except "Disclaimer Allowing for Reasonable Revisions". This has a 0% inclusion.
- In the list of optional items all course syllabi list only one out of eight items i.e. "Semester Meeting Times & Room. The other seven items are missing
- All course syllabi will updated to include all recommended items and the discipline will be advised on the inclusion of missing seven optional items

DATA ANALYSIS

CORE REVIEW

C. ENROLLMENT TRENDS AND STUDENT RETENTION

Coordinator: The Dashboard report on your Discipline/Program will collect the necessary data in regard to Enrollment Trends and Student Retention. Use this form to review that data in the following areas:

Enrollment (Use the Dashboard data on Average Section Size, Sections Filled to Capacity, Percent of Completed Sections, Percent Change in Headcount, and Percent Change in Credit Hours to discuss this area.)

The average section size is 12.5 because the maximum class size is 20 students due to the nature of these courses. Sections filled to capacity are 97.6% versus 88.4 % college-wide. Also, the percent of completed sections are 100% versus 89.1% college-wide. The percent change in the head count is 1.5% versus 3.5% college-wide and percent change in credit hours is 1.4% versus 3.0% college wide. The last two i.e. change in head count and change in credit hours is comparatively less than college-wide, due to limited offerings in this program because of the facility and equipment.

Minority Students (Use the Dashboard data on Minority Students to discuss this area.)

The percent of minority students is 8.4% versus 27.1% college wide and 17.2% county-wide. The hazardous nature of the program and the work environment discourages most female students, which to some extent contributes to low minority percent. This issue can be addressed with the help of college recruiters and our marketing department.

Student and Course Success (Use the Dashboard data on Percent of Withdrawals, Percent of Incompletes, and Student Course Completion Rate to discuss this area.)

The percent of withdrawals are 9.1% as compared to 16.5% college-wide. The percent of incompletes are 0% compared to 1.6 college-wide and the student course completion rate is 90.9% as compared to 64.8% college-wide. Based on these three criteria it seems that the student success within the program is higher when compared to college-wide programs and courses. The reasons are student motivation, quality of instruction, and job opportunities in the field.

ENROLLMENT TRENDS AND STUDENT RETENTION REVIEW SUMMARY:

The increase in enrollment within the program over the last ten year is a total of 58.1%. The enrollment has been fairly consistent for the past three years and based on facility and equipment limitations the enrollment will in all probability stay consistent with this trend. The student course completion rate of 90.9% and the steady enrollment for the last three years could be indication of a high student retention rate.

DATA COLLECTION

CORE REVIEW

D. DISCIPLINE/PROGRAM NEEDS AND RESOURCES

Coordinator: Distribute this form to all full-time and adjunct faculty.

What resources or services does the Discipline/Program need in order to improve instruction? Please explain the reason you are requesting each resource.

The Discipline/ Program Needs and Resources data collection form was completed by two faculty members and the comments are as follows:

- Enlarge the facility to accommodate more students
- Upgrade equipment to bring it up to industry standards

- **Improve lighting**
- **Large work areas to give demos and for students to do welding projects**
- **New inverter welding equipment to keep up with the technology**

What curriculum revisions or development would enhance instruction in your Discipline/Program?

- **There should be an advanced Tig class to go more in-depth with different materials**
- **There should be an advanced Mig class to go more into different types of equipment and to have more time and experience with aluminum**
- **Investigate the possibility of an associate degree and transfer credits**

Please return to T. Khan at AH by 5-1--06

DATA ANALYSIS

CORE REVIEW

D. DISCIPLINE/PROGRAM NEEDS AND RESOURCES

Coordinator: Please summarize the needs, resources, and curriculum actions indicated on the Data Collection forms.

What resources or services does your Discipline/Program need?

- **Larger facility**
- **Better lighting**
- **Full-time faculty for the welding discipline**
- **New inverter welding equipment**

What curriculum revisions or development does your Discipline/Program see as beneficial to instruction?

The curriculum revisions or development that our Discipline/ Program sees as beneficial to instruction is as follows:

- **Two new courses in advanced Mig and Tig welding**
- **Associate degree program**
- **Articulation agreements for transfer students**

**DISCIPLINE/PROGRAM NEEDS AND RESOURCES
REVIEW SUMMARY:**

The welding program would benefit from a larger facility with better lighting and more up-to-date equipment. Full-time faculty responsible for the program will definitely help in keeping the program current and will enhance the enrollment. On the curriculum side, it

would be beneficial to develop an associate degree program that would transfer to other institutions.

If the plan to build the new technology building is realized, then perhaps the welding program could be housed in a larger and more modern facility. This would also justify the development of an associate degree program and the hiring of full-time faculty for the welding program.

CRC
PART II- PROGRAM REVIEW and
PROGRAM REVIEW OF OCCUPATIONAL EVALUATION
(PROE)

Under the provisions of the Carl D. Perkins Vocational and Technical Education Act/Public Law 105-332, if a Discipline/Program is of an occupational nature, a Program Review in Occupational Education (PROE) report is required by the State of Michigan every five (5) years and can be used for the purposes of the Curriculum Review process.

Coordinator: Data Collection and Data Analysis forms for the following review areas are attached.

E. INPUT FROM INTERNAL & EXTERNAL COMMUNITY

- Collect information from faculty, students and external community (e.g., advisory committees and accrediting agencies) on your Program curriculum. It is recommended that you send or personally distribute these survey forms in your classes, during your advisory committee meetings, and/or at your departmental/staff meetings. Return these survey forms to the Office of State and Federal Programs.

Required survey forms:

- Individual Faculty Perceptions of Occupational Programs & Disciplines Forms
- Individual Student Perceptions of Occupational Programs & Disciplines Forms
- Individual Advisory Committee/Industry Perceptions of Occupational Programs & Disciplines Forms

- Analyze the data you have received from the internal and external community surveys. Record your findings on the PROE Data Analysis form and Final Review Summary

F. COMPARABLE COURSES/PROGRAMS AND TRENDS

- Collect information on transferability and articulation from the Counseling Department. Obtain labor market trends from the Office of Assessment & Effectiveness. Identify the job performance requirements with the aid of advisory committees, professional journals, along with student and employer feedback.
- Analyze and summarize these findings.

G. OUTCOMES ASSESSMENT

- Analyze the results of your most recent Program Assessment, particularly evidence regarding the quality of student learning, and recommended action plans.

E. INPUT FROM INTERNAL & EXTERNAL COMMUNITY

Coordinator: After reviewing the Data Collection forms on all the courses in the Discipline/Program, along with the collated data summary, please analyze and summarize these findings.

Faculty Perceptions of Occupational Programs and Disciplines Analysis

90% + of the responses from three faculty members surveyed are very favorable displaying their satisfaction of the program and its future directions.

Student Perception of Occupational Programs and Disciplines Analysis

90% + of the favorable responses from the thirty students surveyed display satisfaction with the program

Advisory Committee/Industry Perceptions of Occupational Programs/Disciplines Analysis

Four advisory committee members were surveyed. The results are as follows:

- **75% of the advisory committee agreed with the college meeting expectations**
- **75% agreed that the courses offered are preparing the students for the work force**
- **50% disagree that the advisory committee is informed about the program. 25% were in agreement and the remaining 25% were neutral.**
- **75% disagree that the advisory committee has substantial input into the decision making within the program. The other 25% strongly agree.**
- **50% of the advisory committee agree to be satisfied with the direction of the program and 25% disagree, and the other 25% strongly disagree**

**INPUT FROM THE INTERNAL AND EXTERNAL COMMUNITY
REVIEW SUMMARY**

It seems that the majority of the advisory committee members agree about the college meeting the expectations and the current course offerings. There also seems to be a concern from the majority about receiving current information on the program in a

timely fashion. The majority of the advisory committee members are of the opinion that they don't have a substantial input into the decision making process.

It would be advisable to meet the advisory committee members on a more frequent basis and to clarify their role as an external input source. It would be beneficial to clarify the fact that the college does take their advice seriously and that the advisory members understand that it is not always possible to implement all of their suggestions.

F. COMPARABLE COURSES/PROGRAMS AND TRENDS

Coordinator: Answer the following questions.

1. List three institutions to which the courses in your Program transfer, and list the specific courses for each institution. (Consult with the Counseling Department)

Wayne County Community College.

Schoolcraft College

Monroe County Community College.

According to Counseling Department no specific transfer history exists. However the above institutions are open to accept individual courses based on their nature of similarity.

2. List the institutions with which articulation agreements exist that include the courses in your Program. (Consult with the Counseling Department)

None.

3. Provide information regarding labor market trends in your field. (Consult with the Office of Assessment & Effectiveness)

In the period 2004-2014 new jobs created will total 648 and replacement jobs will be 3935. Occupations associated with Welding Technology are expected to experience varying degree of growth and decline over the next 8 years. The majority of future job opportunities will result from replacement of current workers.

F. COMPARABLE COURSES/PROGRAMS AND TRENDS

Coordinator: Please use the data from the Comparable Courses/Programs and Trends Data Collection form to answer the following questions:

1. How does your program serve transferring students? Please discuss.

Not at this time

2. Are your articulation agreements current? Please discuss.

Don't exist.

3. Discuss employment opportunities for students in both the current and future job market.

Job opportunities in the field are favorable and will continue to be so. As per data there will be more jobs for Welders, Cutters, Solderes and Brazers as compared to Machine Setters, Operators and Heat Treating Equipment Setters.

4. Discuss the changes that will be made in your program in response to current/future employer expectations and market trends.

None at this time as the program is meeting the current industry requirements.

COMPARABLE COURSES/PROGRAMS AND TRANSFER REVIEW SUMMARY:

Most two year colleges that offer technical courses have welding certificate program. Transfer from one junior college to another is not common; therefore there was no real urgency to set up articulation agreements. Once Oakland Community College decides to offer an associate degree program it would be beneficial to develop transfer agreements.

4. Identify changes in job performance and employer expectations that have occurred within your industry in the past 5 years. (Consult with advisory committees, professional organizations)

The employee is expected to know more than just welding techniques. Knowledge of metallurgy ,fabrication and computer controlled welders is desirable.

G. OUTCOMES ASSESSMENT

Coordinator: Complete this form after reviewing your most recent Program Assessment Plan.

- 1. How have you used the findings from your Program Assessment to improve your program?

Not at this point.

- 2. What revisions to your Program Assessment Plan would you suggest?

The assessment plan as outlined seems to be working well.

- 3. Discuss the SAGE findings that apply to the instruction in your Program. Obtain these findings from the Office of Assessment and Effectiveness.

Not applicable.

OUTCOMES ASSESSMENT REVIEW SUMMARY:

Coordinator: Obtain the most recent copy of your Program Assessment from the Office of Assessment and Effectiveness. Please attach it to your Summary Report.

Assessment results are available for the year 2003-2004.

Findings 1

Of 16 students, 100% achieved the benchmark level of 90% in MIG project.

Findings 2

Of 17 students, 100% achieved the benchmark level of 90% in TIG project.

Findings 3

Of 9 students, 100% achieved the benchmark level of 90% on pipe project.