New Horizons Regional Education Center
High School Welding Program 2018 - 2019

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1. Projects.
   - Related Instruction
2. Employability skills training.
3. Welding theory, terminology and OSHA 10

Grading:
Employability Skills: 30%  1st year. 35%  2nd year
Competencies: 35%
Related Instruction: 35%  1st year. 30%  2nd year

Grade Scale:
A  90 - 100
B  80 - 89
C  70 - 79
D  60 - 69
F  0 - 59

Late work/makeup policy:

WELDING 1

The welding program fosters the developmental skills listed below.

The student:

- Maintains appropriate personal appearance.
- Uses time wisely.
- Maintains a neat and clean work area.
- Follows instructions willing.
- Attends regularly and on time.
- Takes proper care of tools, equipment and facilities.
- Communicates effectively.
- Solves problems using a mix of logic and intuition appropriate to the situation.
Competencies for welding:

FIRST NINE WEEKS

4. Identify and follow general shop, personal safety, and first aid rules.
   **Oxyfuel Cutting (OAC)**
5. Change cylinders; set up oxyacetylene equipment for operation; pressure test for leaks; turn on, light, and adjust torch; and shut down equipment.
6. Operate manual oxyfuel cutting equipment.
7. Operate automatic oxyfuel cutting equipment.
8. Perform straight cutting.
   **Shielded Metal Arc Welding (SMAW)**
11. Make fillet welds in the horizontal (2F) position using E6010 electrodes. Sizes- 1\4, 3\8, 1\2.
12. Make fillet welds in the horizontal (2F) position using E7024 electrodes. Sizes- 1\4, 3\8, 1\2.
   **Related Instruction**
13. Reading a ruler.
15. Employability skills.

SECOND NINE WEEKS

   **Air Carbon Arc Cutting (ACE)**
16. Operate manual air cutting equipment.
17. Perform metal removal operations.
   **Shielded Metal Arc Welding (SMAW)**
18. Make fillet welds in the vertical (3F) position using E6010 electrodes. Sizes- 1\4, 3\8, 1\2.
19. Make fillet welds in the overhead (4F) position using E6010 electrodes. Sizes- 1\4, 3\8, 1\2.
   **Related Instruction**
20. Welding theory and terminology.
21. Employability skills.
22. Interpret welding symbols.

THIRD NINE WEEKS

   **Plasma Arc Cutting (PAC)**
23. Set up manual air cutting operations.
24. Operate plasma arc cutting operations.
25. Perform shape cutting operations.
   **Shielded Metal Arc Welding (SMAW)**
26. Make fillet welds in the horizontal position (2F) using E7018 electrode. Sizes- 1\4, 3\8, 1\2.
27. Make fillet welds in the vertical position (3F) using E7018 electrode. Sizes- 1\4, 3\8, 1\2.
28. Make fillet welds in the overhead position (4F) using E7018 electrode. Sizes- 1\4, 3\8, 1\2.
   **Related Instruction**
29. Employability skills training.
30. Welding theory and terminology.
31. Practical problems in math.
32. Interpret basic elements of a drawing.

FOURTH NINE WEEKS

Gas Metal Arc Welding (GMAW)
33. Make fillet welds in the horizontal position (2F) using 70 S wire. Sizes 1\4, 3\8, 1\2.
34. Make fillet welds in the vertical position (3F) using 70 S wire. Sizes 1\4, 3\8, 1\2.
35. Make fillet welds in the overhead position (4F) using 70 S wire. Sizes 1\4, 3\8, 1\2.
36. Make fillet welds in the horizontal position (2F) using **Mig Aluminum Wire**, Sizes- 1\4, 3\8, 1\2.

Flux Core Arc Welding
37. Make fillet welds in the horizontal position (2F) using 71 S wire. Sizes- 1\4, 3\8, 1\2.
38. Make fillet welds in the vertical position (3F) using 71 S wire. Sizes- 1\4, 3\8, 1\2.
39. Make fillet welds in the overhead position (4F) using 71 S wire. Sizes- 1\4, 3\8, 1\2.

Related Instruction
40. Employability skills training.
41. Welding theory, terminology and NOCTI Certification.

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WELDING 2

The welding program fosters the developmental skills listed below.

The student:

- Maintains appropriate personal appearance.
- Uses time wisely.
- Maintains a neat and clean work area.
- Follows instructions willing.
- Attends regularly and on time.
- Takes proper care of tools, equipment and facilities.
- Communicates effectively.
- Solves problems using a mix of logic and intuition appropriate to the situation.

Competencies for welding: AWS Certification
FIFTH NINE WEEKS

Shielded Metal Arc Welding (SMAW)
42. Make groove welds in the 2G position using E7018 electrodes.
43. Make groove welds in the 3G position using E7018 electrodes.
44. Perform qualification test for 2G and 3G groove welds.

Related Instruction
45. Employability skills training.
46. Welding theory, terminology and OSHA 10

SIXTH NINE WEEKS

Shielded Metal Arc Welding (SMAW)
47. Make groove welds in the over head 4G position using E7018 electrodes.

Gas Metal Arc Welding (GMAW)
49. Make groove welds in the 1G and 2G positions.
50. Perform qualification test for 2G groove welds.

Flux Core Arc Welding (FCAW)
51. Make groove welds in the 2G position.
52. Perform qualification test for 2G groove welds.

Related Instruction
53. Employability skills training.
54. Welding theory, terminology and OSHA 10

SEVENTH NINE WEEKS

Flux Core Arc Welding (FCAW)
55. Make groove welds in the vertical 3G position.
56. Perform qualification test for vertical 3G groove welds.

Gas Tungsten Arc Welding (TIG)
57. Make fillet welds on carbon steel in the horizontal 2F position.
58. Make fillet welds on carbon steel in the vertical 3F position.
59. Make fillet welds on carbon steel in the over head 4F position.
60. Perform qualification test for 2F, 3F and 4F fillet (TIG) welds using carbon steel.
61. Make groove welds on carbon steel in the 2G, 3G and 4G positions.

Related Instruction
62. Employability skills training.
63. Welding theory, terminology and OSHA 10

EIGHTH NINE WEEKS

Gas Tungsten Arc Welding (TIG)
64. Make fillet welds on aluminum in the 2F, 3F and 4F position.
65. Make groove welds on aluminum in the 2G, 3G and 4G position.

Additional Training
Each student is required to complete their assignments in a timely fashion and because of the nature of welding will not progress forward until they complete each skill level. You will be given an opportunity to make up test on a case by case basis.

**Attendance:** See page 5 and 6 of the student hand book.

**Student Organizations:**
Skills USA
American Welding Society

**Credentialing/Licensing:**
NOCTI certificate 1\textsuperscript{st} year
AWS Certification 2\textsuperscript{nd} year
OSHA 10 certificate 2\textsuperscript{nd} year

**Class Fees:** See student hand out. Total prices vary per student needs.