

UAT 350C: SEMICONDUCTOR ORBITAL TUBE WELDING (UA 8047)

Completed Workflow

1. UATD Chair (mdonham@wccnet.edu)
2. AT Dean (krue@wccnet.edu,esamulski@wccnet.edu)
3. C&A Assistant (aabooker@wccnet.edu)
4. Curricular Systems Coordinator (cacevans@wccnet.edu)
5. C&A Coordinator (sabird@wccnet.edu)
6. C&A Director (bjlinford@wccnet.edu)
7. Before Comm review (aabooker@wccnet.edu)
8. Comm Review step (sabird@wccnet.edu)
9. After Comm review (sabird@wccnet.edu,bjlinford@wccnet.edu)
10. Curriculum Committee Chair (rwanwagnen@wccnet.edu)
11. Assessment Committee Chair (jhale15@wccnet.edu)
12. Before VPI (sabird@wccnet.edu)
13. Vice President for Instruction (eloubert@wccnet.edu; brtucker@wccnet.edu)
14. Banner (cacevans@wccnet.edu)

Approval Path

1. 2026-01-30T20:33:49Z
Marilyn Donham (mdonham): Approved for UATD Chair
2. 2026-01-30T20:35:37Z
Kyrsten Rue (krue): Approved for AT Dean
3. 2026-03-12T13:50:54Z
Carol Evans (cacevans): Approved for C&A Assistant
4. 2026-03-12T13:57:15Z
Carol Evans (cacevans): Approved for Curricular Systems Coordinator
5. 2026-04-06T19:26:37Z
Sera Bird (sabird): Approved for C&A Coordinator
6. 2026-04-10T18:18:08Z
Ben Linford (bjlinford): Approved for C&A Director
7. 2026-04-10T21:22:28Z
Amber Booker (aabooker): Approved for Before Comm review
8. 2026-04-16T21:15:43Z
Amber Booker (aabooker): Approved for Comm Review step
9. 2026-05-14T14:38:11Z
Sera Bird (sabird): Approved for After Comm review
10. 2026-05-22T14:20:05Z
Randy Van Wagnen (rwanwagnen): Approved for Curriculum Committee Chair
11. 2026-05-22T16:19:40Z
Jessica Hale (jhale15): Approved for Assessment Committee Chair
12. 2026-05-22T16:30:18Z
Sera Bird (sabird): Approved for Before VPI
13. 2026-05-22T16:54:49Z
Brandon Tucker (brtucker): Approved for Vice President for Instruction
14. 2026-05-27T07:03:05Z
Approved for Banner

History

1. May 27, 2026 by Anthony Esposito (tonyesposito)

Viewing: UAT 350C : Semiconductor Orbital Tube Welding (UA 8047)

Formerly known as: UAT 350

Changes proposed by: Anthony Esposito (tonyesposito)

Effective Term

Summer 2026

Rationale and proposal summary

The existing course has been modified from a 22.5-hour course to a 45-hour course to adjust for the extra lab time needed for students to meet the successful weld criteria that were not accounted for in the original class syllabus.

Course Cover

Full Course Title

Semiconductor Orbital Tube Welding (UA 8047)

Transcript Title

Semiconductor Orb Welding 8047

Subject Code

UAT - United Association Training

Course Number

350C

Department

United Assoc Dept (UAT Only) (UATD)

Banner Division

ATP

Division/College

Adv Tech/Public Serv Careers (AT)

Org Code

28200

Course Description

In this course, students will identify the theoretical and practical skills needed for semiconductor orbital tube welding. Students will compare and contrast orbital welding done using various power supplies and demonstrate proper weld specifications, equipment setup, and calibration of the prep tubing. Proper purging, welding coupons, and other procedures will also be addressed in both classroom and lab environments. Limited to United Association Instructor Training program graduates. This course was previously UAT 350.

Planned Delivery Format

Face to Face

Has this course been approved for virtual or blended virtual?

No

Has this course been approved for online or online blended?

No

Grading method

Standard Letter, Audit, Academic Forgiveness

CIP Code

469999 - Construction Trades, Other.

Occupational Indicator

Yes

ACS Code

130

Degree Attributes

BCL - Below College Level Pre-Reqs

Credit hours, contact hours, repeatability**Repeatable for additional credit**

No

Course credits

3

Lecture contact hours

45

Lab contact hours

3

Total Contact Hours

48

Expected Total Contact Hours

48

Prerequisites and prerequisite skill levels**College-Level Math**

No Level Required

College-Level Reading and Writing

College-level Reading and Writing

Approved Level I Prerequisite:

Academic Reading and Writing Levels of 6

Is concurrent enrollment an option for this prerequisite?

No

Course Assessment Plan**Learning Outcome****Outcome**

Explain the purpose and concept of orbital welding

Assessment #1**Assessment Tool**

Outcome-related quiz

Anticipated Next Assessment Year

2026

Anticipated Next Assessment Term

Summer

Assessment Cycle

Every Three Years

Anticipated assessment population

All students from all sections

How the assessment will be scored

Answer key

Who does the scoring?

U.A. Instructors

Standard of success

80% of the students will score 80% or higher.

Assessment #2

Learning Outcome

Outcome

Create and upload weld programs for required tube sizes and wall thicknesses on the various power supply units.

Assessment #1

Assessment Tool

Outcome-related demonstration

Anticipated Next Assessment Year

2026

Anticipated Next Assessment Term

Summer

Assessment Cycle

Every Three Years

Anticipated assessment population

All students from all sections

How the assessment will be scored

Checklist

Who does the scoring?

U.A. Instructors

Standard of success

80% of the students will score 80% or higher.

Assessment #2

Learning Outcome

Outcome

Demonstrate proper equipment setup and breakdown of various power supplies and weld heads, including calibrating weld heads to their corresponding power supply.

Assessment #1

Assessment Tool

Outcome-related demonstration

Anticipated Next Assessment Year

2026

Anticipated Next Assessment Term

Summer

Assessment Cycle

Every Three Years

Anticipated assessment population

All students from all sections

How the assessment will be scored

Checklist

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U.A. Instructors

Standard of success

80% of the students will score 80% or higher.

Assessment #2

Learning Outcome**Outcome**

Demonstrate cutting, facing, and prepping of various-sized tubing for welding.

Assessment #1**Assessment Tool**

Outcome-related demonstration

Anticipated Next Assessment Year

2026

Anticipated Next Assessment Term

Summer

Assessment Cycle

Every Three Years

Anticipated assessment population

All students from all sections

How the assessment will be scored

Checklist

Who does the scoring?

U.A. Instructors

Standard of success

80% of the students will score 80% or higher.

Assessment #2

Learning Outcome**Outcome**

Demonstrate the purging and setup procedures for making a weld, making bench welds, and adjusting weld profiles to meet specifications.

Assessment #1**Assessment Tool**

Outcome-related demonstration

Anticipated Next Assessment Year

2026

Anticipated Next Assessment Term

Summer

Assessment Cycle

Every Three Years

Anticipated assessment population

All students from all sections

How the assessment will be scored

Checklist

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U.A. Instructors

Standard of success

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Assessment #2**Course Objectives**

	Objective(s)
1.	Discuss the clean welding process required for pharma, food plants, breweries, etc.
2.	Explain the advantages of continuous welds, as well as the speed, heat, and time needed for orbital tube welding.
3.	Explain the concept of step welds and stacking dimes one at a time.
4.	Discuss the process of writing and uploading weld programs.
5.	Utilize the provided UA Orbital Tube Welding Program Worksheets to develop specified programs.
6.	Demonstrate the ability to interface with power supplies to input programs.
7.	Demonstrate setup and breakdown of the following power supplies: AMI 107, AMI 207, AMI 217, Orbitalum 180 Smartwelder, and Swagelok M200.
8.	Upload a calibration program to the welding software provided.
9.	Adjust the weld head potentiometer to achieve one revolution.
10.	Run the auto-calibration for the orbital tube welding equipment.
11.	Discuss and demonstrate the proper personal protective equipment (PPE) needed and the safety protocol that must be observed.
12.	Squarely cut tubing using various tools and equipment.
13.	Discuss and demonstrate the facing of each end square to be welded.
14.	Check for burrs, internal scratches, and other irregularities identified in orbital tuber welding.
15.	Discuss weld head purge, flow rates, I.D. purge (inside diameter purge), mag settings, and the tacks–hinge method of welding.
16.	Perform welds on the designated power supply.
17.	Demonstrate a fillet or ring coupon for inspection.
18.	Adjust a weld profile to meet specifications for the required size and wall thickness.

General Education Area(s)**Area 1: Writing**

No

Area 2: 2nd Writing or Communication/Speech

No

Area 3: Mathematics

No

Area 4: Natural Science

No

Area 5: Social and Behavioral Science

No

Area 6: Arts and Humanities

No

MTA General Education

No

Review

Is conditional approval requested?

No

Is this course currently conditionally approved, and you are now submitting it for full approval?

No

Key: 9002