

# TOOLING, CERTIFICATE OF ACHIEVEMENT

**Banner Code:** 1\_CT\_MTTL

**Control Number:** 19544

**Financial Aid Eligible**

Earning the Tooling certificate upgrades the skills of the machinist to the point required for profitable employment as an entry-level tool maker, a die maker, or a mold maker. As well as other subjects that must be learned by the beginning tool maker, the Tooling certificate program includes courses in metallurgy, tool and cutter grinding, and welding tooling.

## Program Outcome

Manufacture precision tooling for Dies, Molds, and Prototype tooling.

Review Certificate Requirements (<https://catalog.cccd.edu/orange-coast/graduation-requirements/certificates/#achievementtext>).

| Course                  | Title                                      | Units       |
|-------------------------|--|-------------|
| <b>Required Courses</b> |  |             |
| MACH A100               | Introduction to Machine Shop               | 3           |
| MACH A105               | Lathe                                      | 5           |
| MACH A110               | Milling Machine                            | 5           |
| MACH A115               | Production Machining Techniques            | 2           |
| MACH A120               | Measurement and Blueprint Reading          | 3           |
| MACH A121               | Computations for Machinists                | 3           |
| MACH A125               | CNC Machine Operation 1                    | 3           |
| MACH A130               | Introduction to CNC and Manual Programming | 3           |
| MACH A175               | Dimensioning and Tolerancing               | 3           |
| MACH A190               | Elementary Metallurgy                      | 2           |
| MACH A200               | Tooling                                    | 2.5         |
| WELD A100               | Arc & Oxy-acetylene Welding                | 3           |
| <b>Total Units</b>      |  | <b>37.5</b> |

## Program Sequence

These sequences at Orange Coast College are curriculum maps for students to finish all requirements for the certificate. There may be advisories, prerequisites, or time requirements that students need to consider before following these maps. **Students are advised to meet with an Orange Coast College Counselor for alternate sequencing.**

| Course            | Title                             | Units     |
|-------------------|-----------------------------------|-----------|
| <b>Year 1</b>     |                                   |           |
| <b>Semester 1</b> |                                   |           |
| MACH A100         | Introduction to Machine Shop      | 3         |
| MACH A105         | Lathe                             | 5         |
| MACH A120         | Measurement and Blueprint Reading | 3         |
| MACH A121         | Computations for Machinists       | 3         |
|                   | <b>Units</b>                      | <b>14</b> |
| <b>Semester 2</b> |                                   |           |
| MACH A110         | Milling Machine                   | 5         |

| Course            | Title                                      | Units       |
|-------------------|--|-------------|
| MACH A130         | Introduction to CNC and Manual Programming | 3           |
|                   | <b>Units</b>                               | <b>8</b>    |
| <b>Summer</b>     |  |             |
| MACH A200         | Tooling                                    | 2.5         |
|                   | <b>Units</b>                               | <b>2.5</b>  |
| <b>Year 2</b>     |  |             |
| <b>Semester 1</b> |  |             |
| MACH A125         | CNC Machine Operation 1                    | 3           |
| MACH A190         | Elementary Metallurgy                      | 2           |
| MACH A115         | Production Machining Techniques            | 2           |
|                   | <b>Units</b>                               | <b>7</b>    |
| <b>Semester 2</b> |  |             |
| MACH A175         | Dimensioning and Tolerancing               | 3           |
| WELD A100         | Arc & Oxy-acetylene Welding                | 3           |
|                   | <b>Units</b>                               | <b>6</b>    |
|                   | <b>Total Units</b>                         | <b>37.5</b> |