**Part-Time Pathway to Success**

School of Manufacturing, Engineering, and Information Technology

# CNC Programmer (31-444-3)

Technical Diploma

**Effective 2024/2025**

*The course sequence shown on this sheet is the recommended path to completion. Courses will be scheduled in the terms indicated here. All courses should be taken in the order shown to help you stay on track and graduate according to your academic plan. Courses in this program may be offered in a variety or combination of formats (for example: in-person, video conferencing, online, etc.).*

**E-D = Elkhorn/days, I-D = iMET Center/days, I-E = iMET Center/evenings, F=Fall, S=Spring, SU=Summer**

| Term | Course # | Cr. | Course Title | Requisites (prereq- before/ coreq-with) | E-D | I-D | I-E |
|---|---|---|---|---|---|---|---|
| 1 | 890-155 | 1 | Gateway to Success (G2S) | | F | F+ | F+ |
| 1 | *444-331 | 3 | CNC Machining Technology | | F | F | F |
| 1 | *444-337 | 3 | Fund. of Blueprint and Shop Safety | | F | F | F |
| 1 | *444-339 | 3 | Gauging and Quality Control[4] | | F | F | F |
| 2 | *444-316 | 3 | Foundations of CNC Machining | | S | S | S |
| 2 | *444-334 | 3 | Fund. of CNC Milling Applications | | S | S | S |
| 2 | 804-370 | 2 | Mathematics I, Applied[1] | Prereq: 854-760 | S | S+ | S+ |
| 3 | *444-307 **OR** *444-308 | 3 | Fund. of Swiss CNC Turning **OR** Fund. of Live Tooling | | SU | SU | SU |
| 3 | *444-306 **OR** *444-309 | 3 | Swiss CNC Setup and Operation **OR** Live Tooling Setup and Operation | | SU | SU | SU |
| 3 | *444-333 | 3 | Fund. of CNC Turning Applications | Prereq: 444-331 | SU | SU | SU |
| 4 | *444-335 | 3 | CNC Lathe Set-Up | | F | F | F |
| 4 | *444-336 | 3 | CNC Mill Set-Up | | F | F | F |
| 5 | *444-311 | 3 | CNC Lathe Process | Prereq: 444-335 | S | S | S |
| 5 | *444-314 | 3 | CNC Mill Process | Prereq: 444-336 | S | S | S |

**Minimum Program Total Credits Required: 39**

Notes associated with courses (identified by a superscript number at the end of the course title) are located on the back of the sheet.

Mastery of this course will put students on a path to achieve successful degree completion, on-time graduation, and enrich the college experience. Students are required to take this course in their first semester of enrollment. Please see an advisor for details.

= Milestone Course. Faculty have identified this course as providing a strong foundation for success throughout the program.

(*) indicates students must achieve a combined average of 2.0 ("C") or above for these major courses to meet graduation requirements.

(+) indicates students may take these courses at any one of the three main campuses; Kenosha, Racine, Elkhorn or Online.

**CNC Programmer (31-444-3)**

The *CNC Programmer* technical diploma program gives an overview of essential machine shop practices including machine safety, blueprint reading and part inspection methods. CNC Machine programming, set-up and operation will also be covered in-depth. Graduates of this program will have the skills necessary for entry-level employment in a machine shop setting. Machinists already employed will find the program a great way to improve their skill set. Special emphasis will be placed on learning the skills necessary to transform raw material into a finished part. Students will be able to apply the techniques learned in lectures within a machine shop setting. Overall this program is intended to introduce students to many different aspects within a machine shop setting.

**Program Learning Outcomes**

Graduates will be able to:

1. Apply basic safety practices in the machine shop.
2. Interpret industrial/engineering drawings.
3. Apply precision measuring methods to part inspection.
4. Perform basic machine tool equipment set-up and operation.
5. Perform programming, set-up, and operation on CNC milling centers.
6. Perform programming, set-up, and operation on CNC turning centers.

**Essential Career Competencies**

Gateway's six essential career competencies are the general attitudes and skills promoted and assessed by all programs. All Gateway graduates will develop skills in:

- Communication Competence
- Professionalism and Career Management
- Cultural Competence
- Critical Thinking and Problem Solving
- Teamwork and Collaboration
- Technology Competence

**Admission Requirements**

1. Students must submit an application and pay $30 fee.
2. Students must meet one of the following: minimum cumulative high school GPA of 2.6 (unweighted); earned at least 12 college credits with a minimum GPA of 2.0; or complete valid reading, writing, and math placement assessments.

**Graduation Requirements**

1. Minimum 39 credits with a cumulative GPA of 2.0 or above.
2. *Average of 2.0 ("C") or above for these major courses.
3. Complete 890-155 Gateway to Success (G2S) in the first semester.

For a complete list of Graduation Requirements, check the Student Handbook or Graduation Requirements.

**Notes**

1. Satisfactory college placement results (through multiple measures or placement test scores) or successful remediation is required prior to enrollment. See an advisor for details.
2. Safety glasses (marked Z-87) are required in labs. If prescription glasses are needed, allow a minimum of 90 days before the program start to obtain prescription and glasses.
3. A hand calculator capable of trigonometric functions is required for 804-370; the cost is approximately $25.
4. A credit for prior learning assessment is available for this course. For more information, please contact cfpl@gtc.edu.