



# Cycle Time Reduction

## For CNC Machining & Turning Centers



### Help students get the most from their CNCs!

During any CNC machine's usage, there are really only two activities. Either machines are in setup or they are running production. Setup time is the total time the machine is down between production runs. Cycle time is the time it takes to complete a production run divided by the number of good workpieces produced.

During production runs, machines are supposed to be producing. Yet there may be activities occurring that are not very productive. In this curriculum, you will show many techniques that will help students keep machines in cycle for as great a percentage of time as possible. You'll begin by presenting preliminary information, including basic premises that will help students understand how to improve machine utilization. Included are presentations on justification issues and resources you have available to reduce cycle time.

Since cycle time reduction program will require an investment in time, effort, and/or money, you'll also address justification issues. You will then present principles of cycle time reduction, including the two tasks types related to running production, the three ways to reduce cycle time, and the four steps to reducing cycle time. You will also present how to make wise decisions about which machine/s to work on first based upon eliminating company-wide and department-wide constraints.

Finally, you will show countless specific techniques students can apply to reduce cycle time in the approximate order that production runs are completed. Included are presentations on preparation and organization, workpiece loading, program execution, workpiece unloading, other tasks that are done during every cycle, sizing adjustments, dull tool replacement, and other tasks done during a production run.

You'll be addressing the two most popular forms of metal-cutting CNC machine tools - machining centers and turning centers.

### Free with initial textbook order!

Not only will you be teaching with the best state-of-the-art CNC curriculums in the industry, you'll be doing so free of charge! All we ask is that your school bookstore buys the student manuals from us! With an initial order of just 20 manuals, we'll ship the instructor's materials free of charge! All instructor materials (slide shows, PowerPoint Viewer, instructors manual, and Adobe Acrobat Reader) come on one CD-rom disk.

Our net price to your school (or bookstore) for manuals is \$40.00 each. Suggested retail price is \$50.00 each. Future orders can be in any quantity. This cost will be recovered, of course, as students enroll in your classes and buy the manuals. In essence, your first 20 students will be paying for the curriculum!

### Three presentations!

**Basic premises and preliminaries(79 slides)** – This presentation sets the stage for material to follow. You'll present CNC benefits, address machine utilization versus personnel utilization, discuss corporate identities, and value added principles. And before digging in to cycle time reduction principles and techniques, you'll get students primed with discussions on the importance of cycle time reduction, justification issues, and available resources.

**Cycle reduction principles (70 slides)** – Here you'll discuss principles of cycle time reduction that can be applied to just about any kind of production equipment, including the two tasks types related to running production, the three ways to reduce cycle time, and four steps to cycle time reduction.

**Setup reduction techniques (351 slides)** – Here, you'll show specific cycle time reduction techniques in the approximate order that production runs are completed – including preparation and organization, workpiece loading/unloading, program execution, sizing adjustments, other things that occur in every cycle, and tool replacement. In each major topic, you'll show ways to eliminate tasks, move tasks off line, and facilitate tasks.

### Instructor materials:

**PowerPoint slide shows with and without guidance** – One set of slide shows includes audio guidance to help you know what to do throughout the course. Since slide shows with guidance are quite large (taking a long time to load), we also provide a set of slide shows without guidance.

**Instructions** – This ten page document provides detailed directions about teaching the course, including several suggestions for student activities.

**Microsoft PowerPoint Viewer** – While we encourage you to purchase the full version of PowerPoint (it allows full editing of slide shows), PowerPoint Viewer is included to let you view and display the slide shows.

### Student materials:

**135 page manual** – that follows your presentations. This manual will make an excellent reference when students finish with the course and begin to apply the techniques you've shown

#### Download free samples!

Our internet site ([www.cncci.com](http://www.cncci.com)) includes the complete set of instructions, samples of the slide shows, instructor manual, student manual, and the recommended presentation time you should allow for each presentation. Log on and see just how comprehensive this course truly is!