

# CNC Engineering Course - Table of Contents

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## CNC Engineering Course

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### Front Matter

1. **Foreword** - A Word from the Author
  2. **Acknowledgments** - Recognition of Contributors
  3. **Thank You to AI** - Collaboration with AI Tools
  4. **License** - Course Terms and Conditions
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### Course Modules

#### Foundation Modules (1-4)

**Module 01:** Mechanical Frame & Structure

**Module 02:** Vertical Axis & Z-Stage

**Module 03:** Linear Motion

**Module 04:** Control Electronics

**Module 05:** Plasma Cutting

**Module 06:** Spindle & Rotary Tools

**Module 07:** Fiber Laser

**Module 08:** Waterjet Cutting

**Module 09:** Pick & Place Robot

**Module 10:** Robotic Arm

### **Professional Development Modules (21-26)**

**Module 21:** Metrology and Precision Measurement

**Module 22:** Quality Management Systems (QMS)

**Module 23:** Shop Organization and Management

**Module 24:** L.E.A.N. Strategies for CNC Manufacturing

**Module 25:** Work-Life Balance in CNC Manufacturing

**Module 26:** CNC Business Ownership and Management

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## **Appendices**

**Appendix A:** Material Properties

**Appendix B:** Hardware Specifications

**Appendix C:** Motor Drive Sizing

**Appendix D:** Linear Motion

**Appendix E:** Electrical Standards

**Appendix F:** G-code Reference

**Appendix G:** Safety Standards

**Appendix H:** Lubrication

**Appendix I:** Conversions

**Appendix J:** Troubleshooting

**Appendix K:** Vendors

**Appendix L:** Resources

**Appendix M:** Glossary

**Appendix N:** Contact

**Appendix O:** Updates

**Appendix P:** Mathematics

**Appendix Q:** QMS Templates

**Appendix R:** Organization Templates

**Appendix S:** LEAN Manufacturing Templates (2,910 lines)

**Appendix T:** Business Ownership Templates (6,612 lines)

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## **Course Information**

**Total Modules:** 26 comprehensive modules

**Total Appendices:** 20 reference appendices (including 9,500+ lines of templates)

**Course Scope:** Foundation through advanced topics and business ownership

**Target Audience:** Entry-level through experienced professionals and entrepreneurs

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*Course Version 1.0 | Last Updated: November 2025*