

Introduction

Computer numerical control (CNC) systems and machine tools are essential elements in many industrial processes. The setting and operation assignments in this workbook will provide a broad range of practical experiences which represent a valuable foundation to the successful application of this technology.

The subject is a diverse one, which frequently involves separate elements of the CNC manufacturing process. Because of this, practical activities have been carefully selected to create a comprehensive yet cohesive programme of study which closely follows the City and the Guilds Computer-aided Engineering 230 series CNC Setting and Operation syllabus. This workbook will also prove to be a useful aid to those studying standard CNC modules available through the Business and Technology Education Council (BTEC).

The approach in all the assignments concerns the practical application of CNC. This ranges from CNC machine setting to program proving and editing. It is a multi-disciplined technology which demands a multi-skilled engineer for effective application. The workbook will be particularly suitable for:

- recently trained engineers wishing to advance to more specialised CNC and new technology work
- mature, skilled and experienced engineers who require to update and enhance their traditional skills with CNC machine tool operation and applications
- service and maintenance personnel who require to broaden their skills and knowledge base in response to multi- and inter-disciplinary developments in CNC technology
- technical trainers and teachers who are seeking to acquire new technology skills in response to changing course demands.

The result of rapid technological advances in industry is that there has never been a more exciting time to be an engineer. This workbook has been written for those concerned with sharing and exploiting the benefits that may be derived from this new technology and its associated working methods.

City and Guilds/Macmillan publishing for computer-aided engineering

This workbook is one of the series of City and Guilds/Macmillan books which together give complete and up-to-date coverage of computer-aided engineering. A core text, or source book (*Computer-aided Engineering*), gives basic information on all the main topic areas (basic CNC; CNC setting and operation; CNC part programming; CNC advanced part programming; basic CAD/CAM; computer-aided draughting; advanced CAD; basic robotics; robot technology; programmable logic controllers; more advanced programmable logic controllers). It has tasks structured in to the text to encourage active learning.

Workbooks cover five main topics: CNC setting and operation; CNC part programming; computer-aided draughting; robot technology; programmable logic controllers. Each workbook includes all the operational information and guidance needed to be able to complete the practical assignments and tasks.

The books complement each other but can be used independently. Peter Riley (formerly Head of Department of Engineering Technology, Blackpool and The Fylde College) is Consultant Editor of the series.