Robot Technology Workbook

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Robot Technology Workbook

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Introduction

Programmable handling systems and robot technology are essential elements in many industrial processes. The 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, involving many traditionally separate engineering disciplines. Because of this, practical activities have been carefully selected to create a comprehensive yet cohesive programme of study which closely follows the City and Guilds 230 computer-aided engineering series robot technology syllabus. This workbook will also prove to be a useful aid to those studying standard modules in robot technology available through the Business and Technology Education Council (BTEC).

The approach in all the assignments concerns the practical application of robot technology. This ranges from machine selection to workcell maintenance. Programming is also included, together with the many uses of feedback information and sensing systems. This 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 new technology work
- mature, skilled and experienced engineers who require to update and enhance their traditional skills with robot technology disciplines
- service and maintenance personnel who require to broaden their skills and knowledge base in response to multi- and inter-disciplinary developments in the field of robot 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 a series of City and Guilds/Macmillan books which together give complete and up-to-date coverage of computer-aided engineering. The books complement each other but can be used independently of each other.

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; basic programmable logic controllers; more advanced programmable logic controllers). Tasks are structured into the text to encourage active learning.

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

Peter Riley (Head of Department of Engineering Technology, Blackpool and The Fylde College) is Consultant Editor of the series.