# CONTENTS

# SR.NO. PARTICULARS PAGE NO.

| -  | Preface  | (i)  |
|----|--|------|
| -  | Acknowledgements   | (ii) |
| 1. | Salient Features of the Diploma Programme                            | 1    |
| 2. | Employment Opportunities   | 2    |
| 3. | Competency Profile   | 3    |
| 4. | Deriving Curriculum Areas from Competency Profile                    | 4    |
| 5. | Abstract of Curriculum Areas   | 6    |
| 6. | Horizontal and Vertical Organisation of the Subject                  | 7    |
| 7. | Study and Evaluation Scheme  | 8    |
| 8. | Guidelines for Assessment of Student Centred Activities and Internal | 14   |
|    | Assessment   |      |
|    |  |      |

# 9. Detailed Contents of various Subjects

#### FIRST SEMESTER

| 1.1 | Communication Skills - I         | 15 |
|-----|----------------------------------|----|
| 1.2 | Applied Mathematics - I          | 17 |
| 1.3 | Applied Physics – I              | 19 |
| 1.4 | Applied Chemistry – I            | 23 |
| 1.5 | Basics of Information Technology | 27 |
| 1.6 | Engineering Drawing-I            | 32 |
| 1.7 | General Workshop Practice - I    | 35 |

#### SECOND SEMESTER

| 2.1 | Communication Skills – II      | 40 |
|-----|--------------------------------|----|
| 2.2 | Applied Mathematics - II       | 43 |
| 2.3 | Applied Physics – II           | 45 |
| 2.4 | Applied Chemistry – II         | 48 |
| 2.5 | Applied Mechanics              | 52 |
| 2.6 | Engineering Drawing - II       | 55 |
| 2.7 | General Workshop Practice - II | 58 |

#### THIRD SEMESTER

| 3.1 | Fluid Flow                                       | 63 |
|-----|--|----|
| 3.2 | Mechanical Operations                            | 65 |
| 3.3 | Chemical Process Calculations                    | 68 |
| 3.4 | Introduction to Engineering Materials            | 70 |
| 3.5 | Heat Transfer-I                                  | 72 |
| 3.6 | Basics of Electrical and Electronics Engineering | 74 |

## FOURTH SEMESTER

| 4.1 | Mass Transfer-I                     | 77 |
|-----|-------------------------------------|----|
| 4.2 | Chemical Engineering Thermodynamics | 80 |
| 4.3 | Heat Transfer-II                    | 82 |
| 4.4 | Chemical Technology                 | 85 |
| 4.5 | Polymer Technology                  | 88 |
| 4.6 | Energy Technology                   | 90 |
|     | Industrial Training                 | 92 |

### FIFTH SEMESTER

| 5.1 | Employability Skills I                     | 93  |
|-----|--|-----|
| 5.2 | Environmental Education                    | 94  |
| 5.3 | Chemical Reaction Engineering              | 96  |
| 5.4 | Mass Transfer-II                           | 98  |
| 5.5 | Petroleum and Petrochemical Technology     | 101 |
| 5.6 | Computer Applications in Chemical Industry | 103 |
| 5.7 | Plant Safety                               | 105 |
| 5.8 | Minor Project Work                         | 107 |
|     | Industrial Training                        |     |

## SIXTH SEMESTER

13.

List of Participants

| 6.1 | Employability Skills - II                       | 109 |
|-----|---|-----|
| 6.2 | Entrepreneurship Development and Management     | 110 |
| 6.3 | Process Plant Utilities                         | 114 |
| 6.4 | Process Instrumentation and Control             | 116 |
| 6.5 | Pollution Control in Chemical Process Industry  | 118 |
| 6.6 | Paint Technology                                | 121 |
| 6.7 | Major Project Work                              | 123 |
|     |   |     |
| 10. | Resource Requirements                           | 126 |
| 11. | Evaluation Strategy                             | 131 |
| 12. | Recommendations for Effective Implementation of | 134 |
|     | Curriculum                                      |     |
|     |   |     |

136