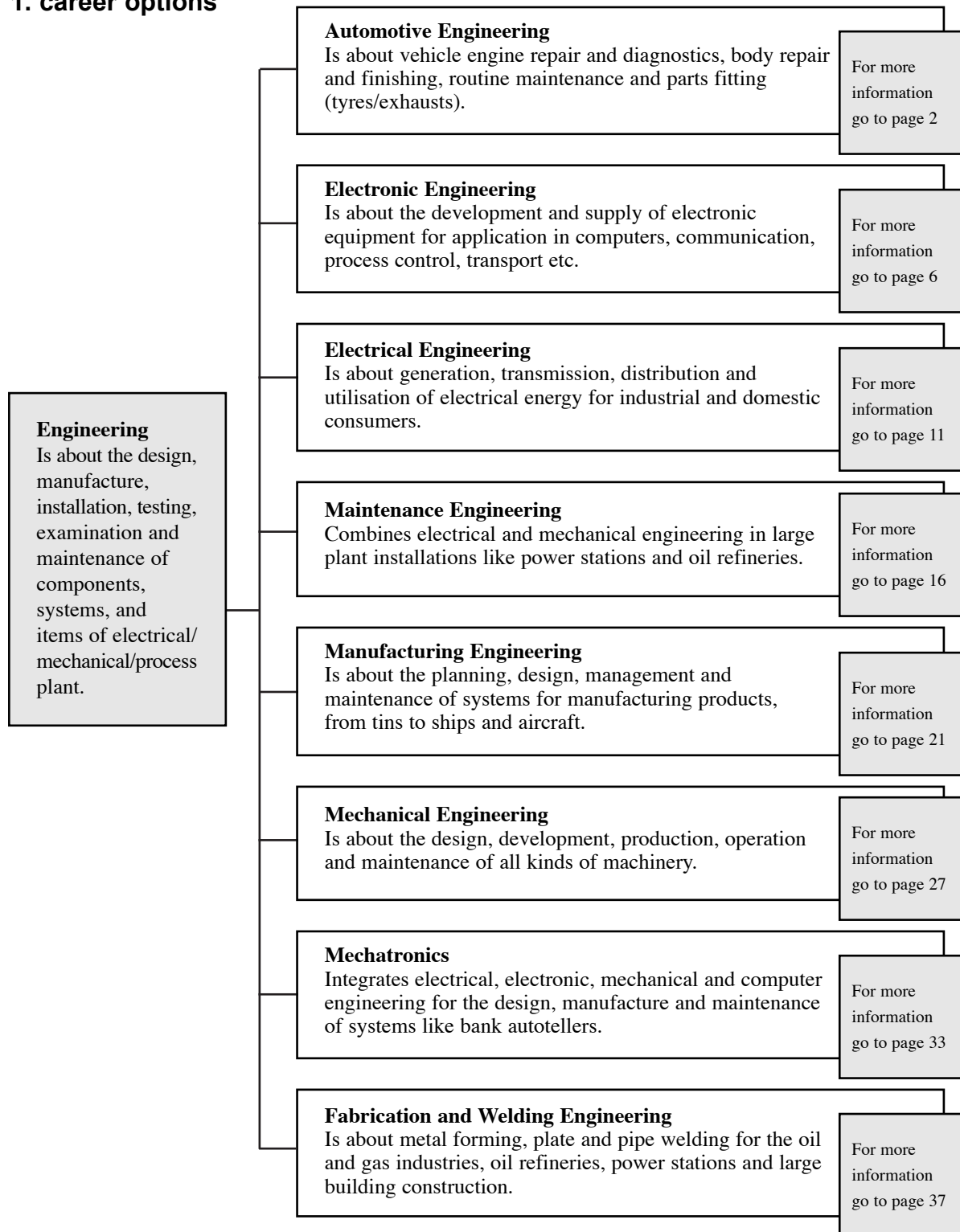


# Engineering

## 1. career options

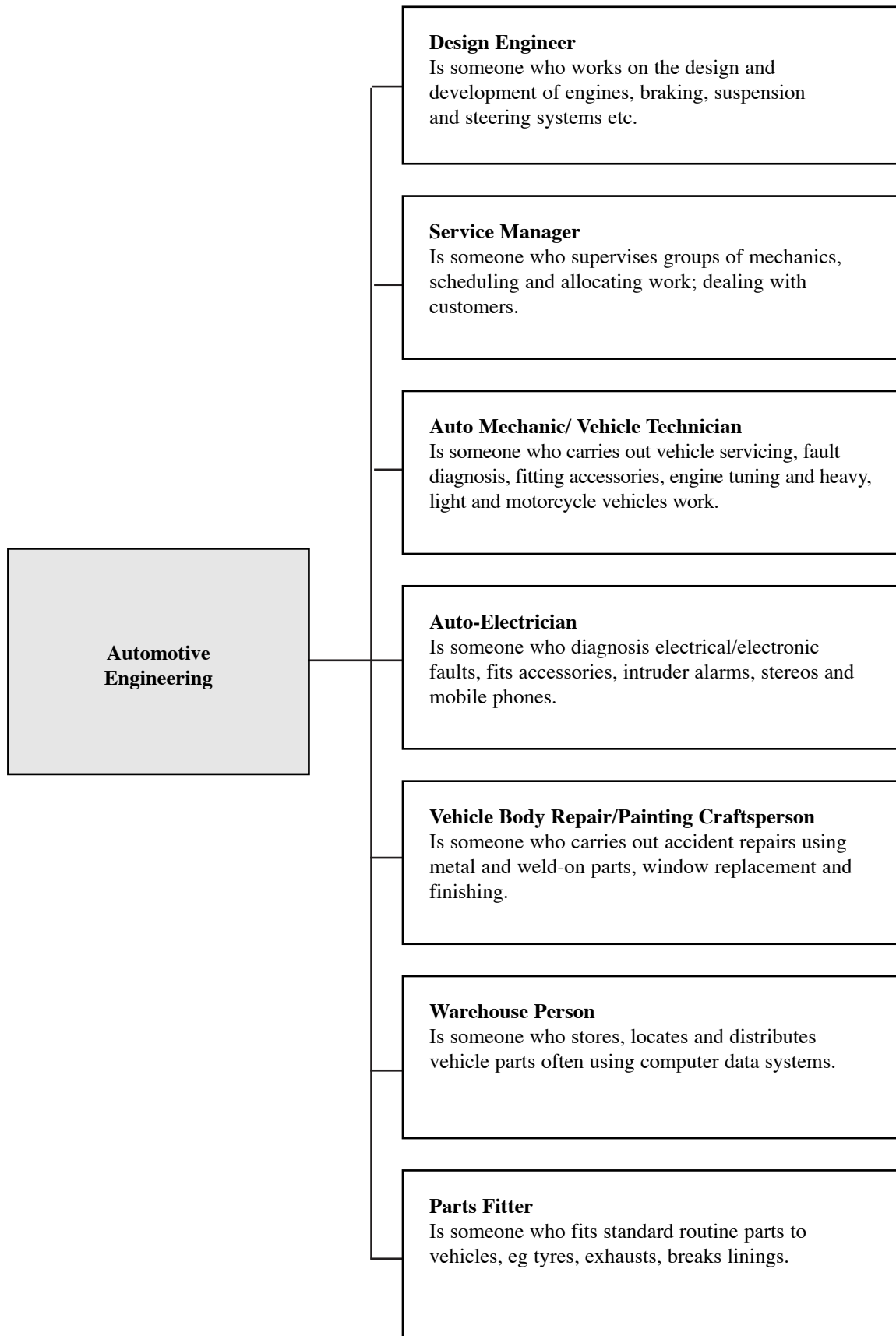


Other career areas related to Engineering include:

1. Art and Design
7. Construction
7. Construction (Building Services)
15. Manufacturing
18. Science

# Automotive Engineering

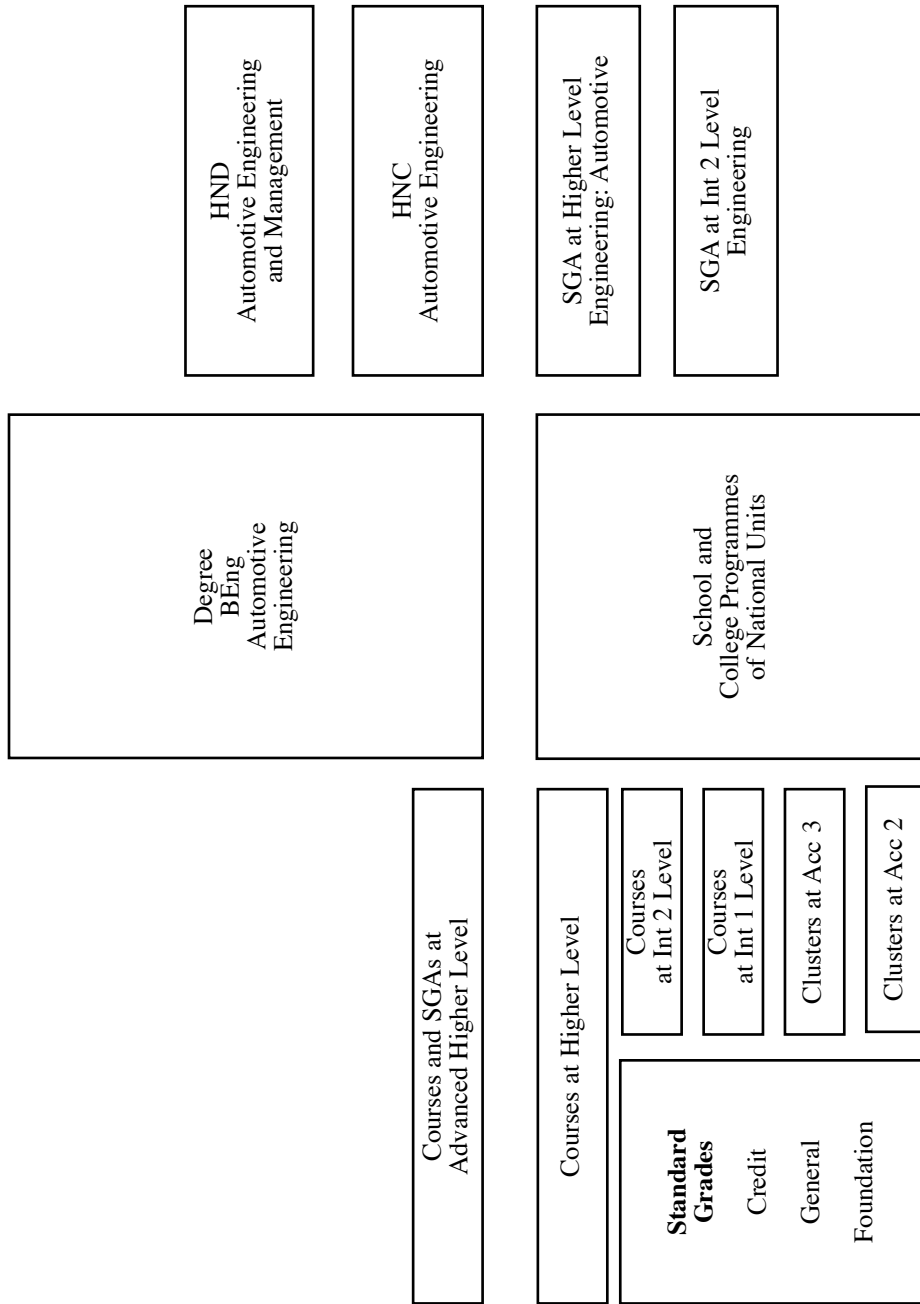
## 2. jobs and careers



# Automotive Engineering

## 3: qualifications and jobs

## School, Further and Higher Education Qualification awards



This diagram outlines the main qualifications in the Automotive Engineering area. A full list of all SQA qualifications is on the following pages. People can progress vertically from one qualification to another, eg from a Course at Int 1 to a Course at Int 2. In addition people can progress diagonally from one level of Standard Grade to a higher level of Course or Scottish Group Award (SGA), eg from Standard Grade at General level to Courses or SGAs at Int 2 level.

In this diagram, SVQs and PDAs in the Vocational sector are placed according to current practice and usage in illustrating the relationships and pathways between qualifications, jobs and careers.

# Automotive Engineering

## 4. qualifications

### **HND**

Automotive Engineering  
Automotive Engineering and Management

### **HNC**

Automotive Engineering  
Automotive Management

### **PDA**

#### **Certificate**

Motor Vehicle Systems  
Motor Vehicle Systems Diagnostics  
Motor Vehicle Repair and Body Refinishing

### **SGA**

#### **Higher**

Engineering: Automotive Engineering

#### **Int 2**

Engineering

### **National Course**

#### **Higher**

Automotive Diagnostics

#### **Intermediate 2**

Automotive Engineering

### **NC Group Award**

Motor Vehicle Repair and Body Re-finishing  
Motor Vehicle Systems

### **SVQ 5**

Directing Automotive Maintenance

### **SVQ 4**

Co-ordinating Automotive Maintenance

### **SVQ 3**

Maintaining Automotive Vehicles: Electrical/Electronic  
Maintaining Automotive Vehicles: Mechanical  
Motorcycle Mechanical and Electronic Systems: Maintenance and Repair  
Vehicle Body Re-finishing  
Vehicle Body Repair  
Vehicle Mechanical and Electronic Systems: Maintenance and Repair: Heavy Vehicle  
Vehicle Mechanical and Electronic Systems: Maintenance and Repair: Light Vehicle

### **SVQ 2**

Maintaining Automotive Vehicles  
Maintaining Automotive Vehicles: Body Structures and Cladding  
Vehicle Body Fitting  
Vehicle Maintenance: Service Replacement  
Vehicle Mechanical and Electronic System Unit Replacement: Light Vehicle

### **SVQ 1**

Maintaining Automotive Vehicles  
Vehicle Maintenance: Service Replacement

# Automotive Engineering

## 5. notes on entry to jobs and careers

### Entry routes

- ◆ **School leavers** — could enter FE courses at National Certificate or Higher National Certificate depending on school qualifications.
- ◆ **Direct entry into employment** — it is possible to obtain employment before or after FE courses.
- ◆ **Adult entry** — mature entrants would normally enter a National Certificate programme; a bridging course may be necessary depending on qualifications and experience.

### SVQ access

SVQs are normally workbased and obtained after or during FE courses.

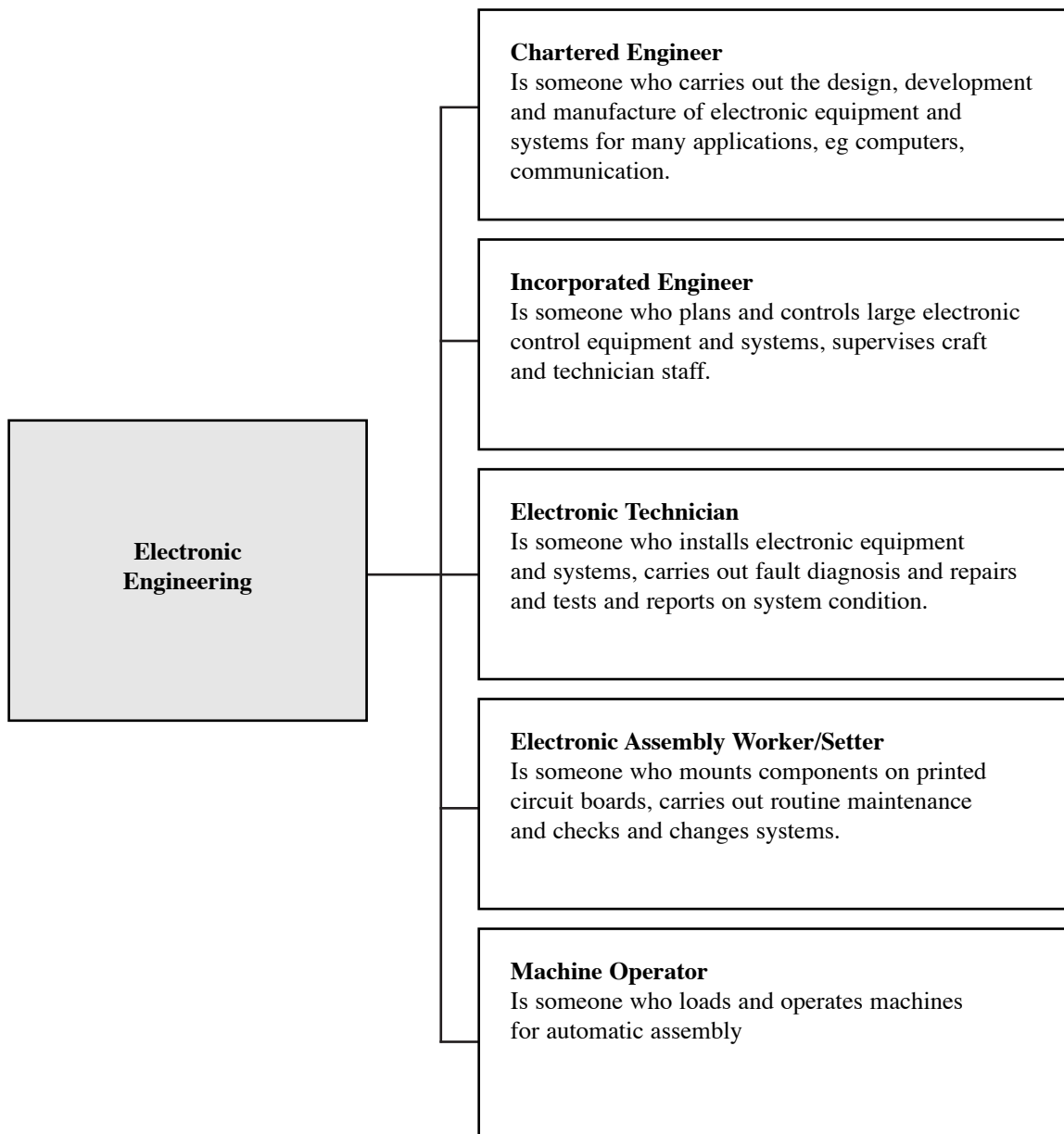
### Entry requirements

- ◆ For some jobs listed no formal qualifications will be required.
- ◆ Entry to an SGA ranges from no formal qualifications to two Standard Grades. Science and Technology subjects are important.
- ◆ HNCs/HNDs will normally require an appropriate SGA or one or two Highers, plus 3 to four Standard Grades, including English and Maths.
- ◆ Degree courses will usually require three or four Highers including Maths and Physics or Technological Studies plus appropriate Standard Grades; or appropriate HNC/HND.

**Note** — entry requirements vary between institutions. Check prospectuses before applying.

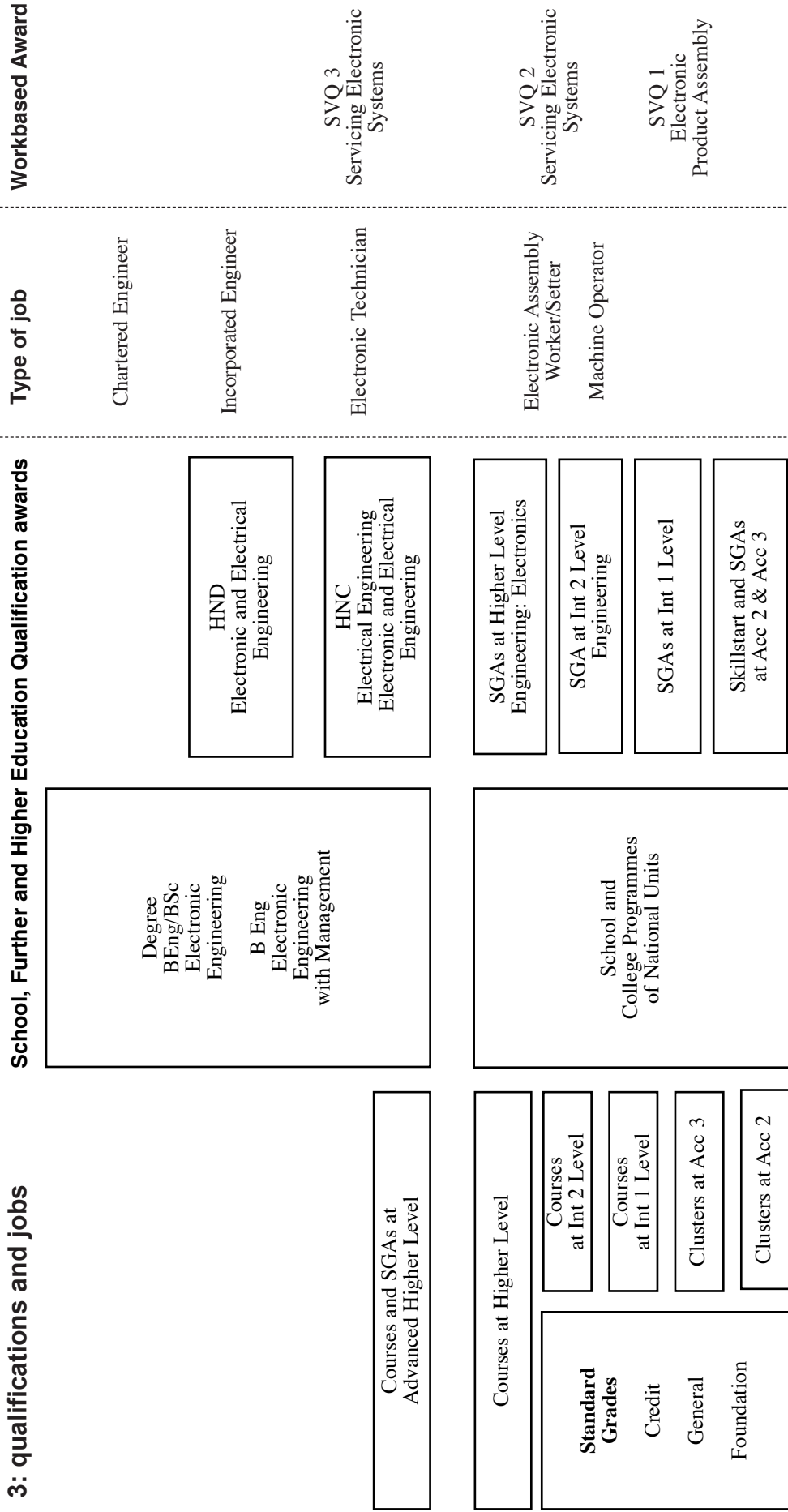
# Electronic Engineering

## 2. jobs and careers



# Electronic Engineering

## 3: qualifications and jobs



This diagram outlines the main qualifications in the Electronic Engineering area. A full list of all SQA qualifications is on the following pages. People can progress vertically from one qualification to another, eg from a Course at Int 1 to a Course at Int 2. In addition people can progress diagonally from one level of Standard Grade to a higher level of Course or Scottish Group Award (SGA), eg from Standard Grade at General level to Courses or SGAs at Int 2 level.

In this diagram, SVQs and PDAs in the Vocational sector are placed according to current practice and usage in illustrating the relationships and pathways between qualifications, jobs and careers.

# Electronic Engineering

## 4. qualifications

### **HND**

Audio Engineering  
Electronic and Electrical Engineering  
Electronic and Electrical Systems  
Electronic Engineering  
Electronic Systems  
Electronics with Music Technology  
Engineering: Computer Technology  
Engineering: Electronics  
Engineering: Electronic Manufacture  
Engineering: Telecommunications

### **HNC**

Audio Engineering  
Electronic and Electrical Engineering  
Electronics  
Engineering: Electronics  
Engineering: Electronic Manufacture  
Engineering: Practice  
Engineering: Telecommunications  
Television and Audio Visual Media Engineering

### **PDA**

#### **Adv Certificate**

Engineering Practice: Electromechanical

### **SGA**

#### **Higher**

Engineering: Electronics

#### **Int 2**

Engineering

### **GSVQ III**

Engineering: Electronic and Electrical  
Engineering: Practice  
Technology

### **GSVQ II**

Engineering  
Technology

### **National Course**

#### **Adv Higher**

Electronics

#### **Higher**

Electronics  
Process Control  
Process Measurement  
Telecommunications

#### **Int 2**

Electronic and Electrical Fundamentals

#### **Int 1**

Applied Practical Electronics

### **NC Group Award**

Electronic Engineering  
Electronic Engineering Practice

**SVQ 3**

Operating and Maintaining the Performance of Telecommunications Equipment  
Repair Cellular Terminal Equipment  
Servicing Electronic Systems (Field)  
Servicing Electronic Systems (Workshop)  
Servicing Software (Support Centre) or (Field)

**SVQ 2**

Electronic Product Assembly and Rectification  
Installing and Maintaining Aerial Equipment and Associated Feeders  
Performing Engineering Operations  
Printed Circuit Board Assembly and Repair  
Servicing Electronic Systems (Field)  
Servicing Electronic Systems (Workshop)  
Servicing Software (Support Centre)

**SVQ 1**

Electronic Product Assembly  
Installing Fibre Optic Communications Links  
Printed Circuit Board Assembly  
Surface Mount Technology and Automatic Assembly and Repair

# Electronic Engineering

## 5. notes on entry to jobs and careers

### Entry routes

- ◆ **School leavers** — could enter FE courses at NC, HNC, HND level or HE courses at degree level depending on school qualifications.
- ◆ **Direct entry into employment** — is possible before or after FE or HE courses.
- ◆ **Adult entry** — mature entrants would normally enter a National Certificate programme; a bridging course may be necessary depending on qualifications and experience.

### SVQ access

SVQs are normally workbased and obtained after or during FE or HE courses.

The Professional Qualifications of Technician, Incorporated Engineer and Chartered Engineer are awarded by the Engineering Council. In addition to appropriate academic qualifications candidates must have work experience and undertake further work-based training and awards. They must also hold an appropriate post of responsibility.

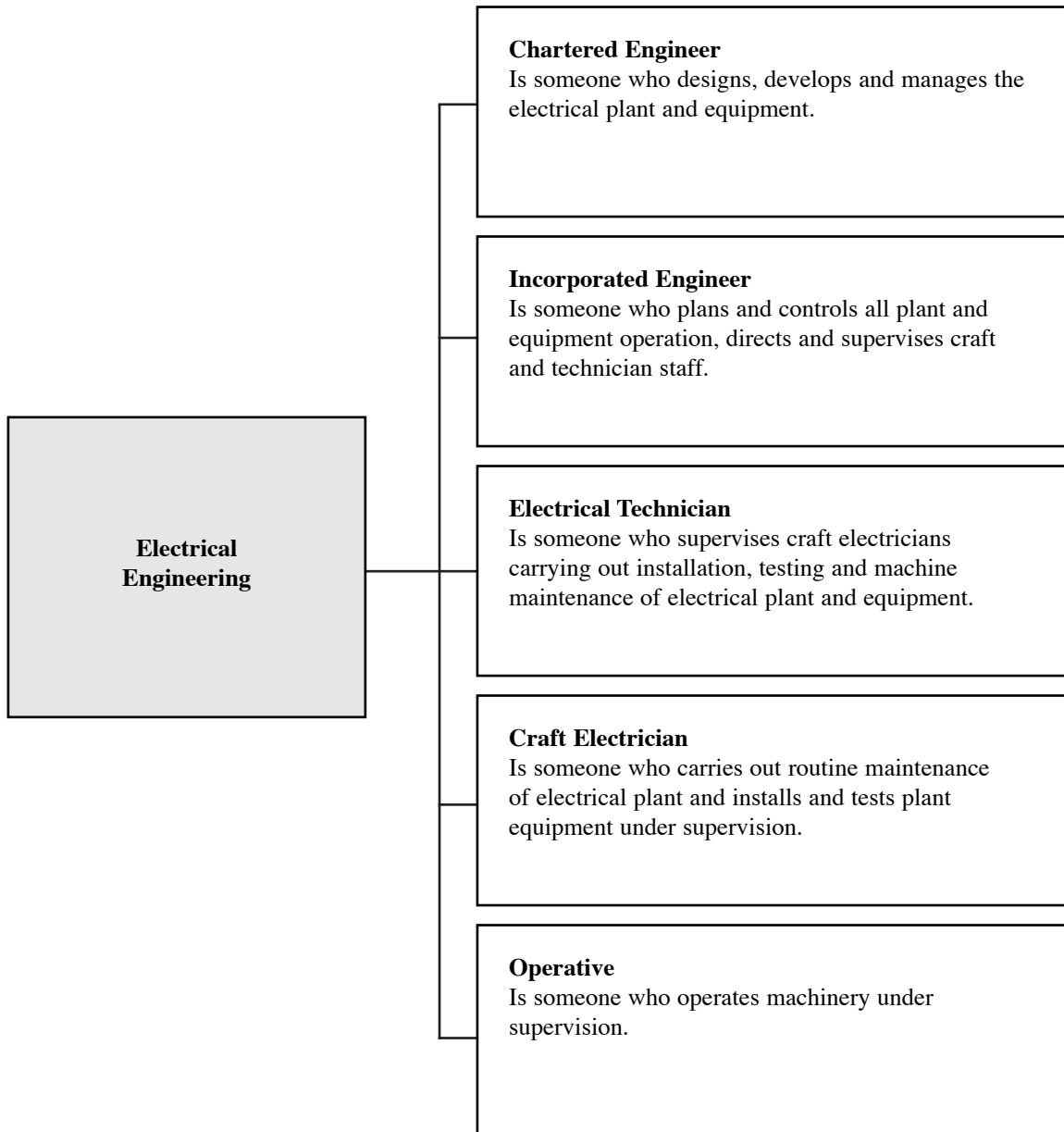
### Entry requirements

- ◆ Some jobs require no formal qualifications
- ◆ Entry to an SGA ranges from no formal qualifications to three or four Standard Grades. Useful subjects include English, Maths, Physics, Technological Studies, Craft and Design, Computing
- ◆ HNCs/HNDs require an appropriate SGA or two Highers and three Standard Grades including Maths, Physics or Technological Studies
- ◆ Degree courses will usually require three or four Highers including Maths and Physics or Technological Studies and Standard Grades; or appropriate HNC/HND.

**Note** — entry requirements vary between institutions. Check prospectuses before applying.

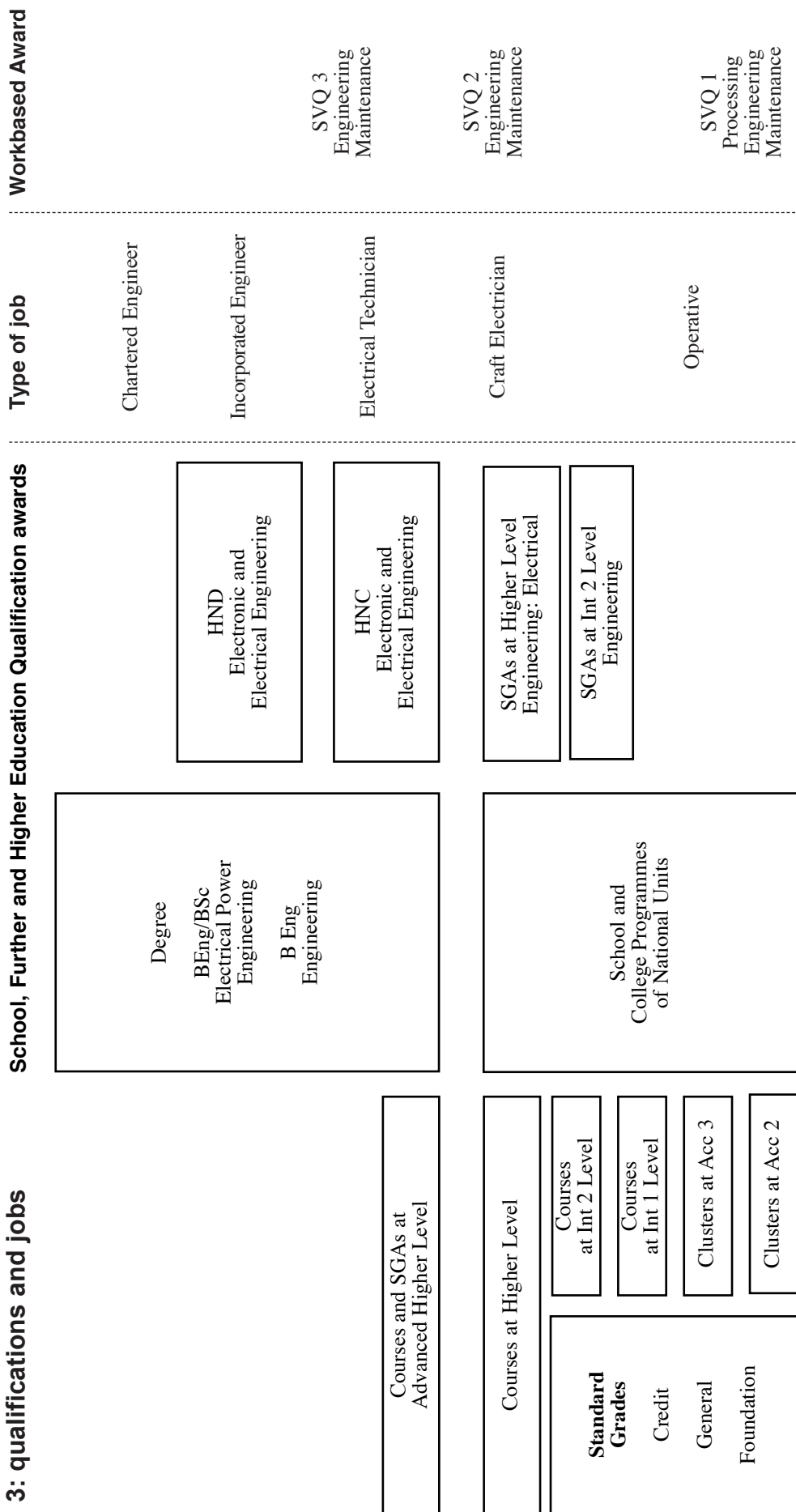
# Electrical Engineering

## 2. jobs and careers



# Electrical Engineering

## 3: qualifications and jobs



This diagram outlines the main qualifications in the Electrical Engineering area. A full list of all SQA qualifications is on the following pages. People can progress vertically from one qualification to another, eg from a Course at Int 1 to a Course at Int 2. In addition people can progress diagonally from one level of Standard Grade to a higher level of Course or Scottish Group Award (SGA), eg from Standard Grade at General level to Courses or SGAs at Int 2 level.

In this diagram, SVQs and PDAs in the Vocational sector are placed according to current practice and usage in illustrating the relationships and pathways between qualifications, jobs and careers.

# Electrical Engineering

## 4. qualifications

### **HND**

Electronic and Electrical Engineering  
Engineering: Electrical

### **HNC**

Electrical Engineering  
Electronic and Electrical Engineering  
Engineering: Electrical  
Engineering: Practice  
Instrumentation  
Measurement and Control Engineering  
Process Control

### **SGA**

#### **Higher**

Engineering: Electrical

#### **Int 2**

Engineering

### **GSVQ III**

Engineering: Electronic and Electrical  
Engineering: Practice  
Technology

### **GSVQ II**

Engineering  
Technology

### **National Course**

#### **Higher**

Electrical

#### **Int 2**

Electronic and Electrical Fundamentals  
Electrical Installation Fundamentals

### **NC Group Award**

Electrical Engineering  
Electrical Engineering Practice

### **SVQ 3**

Engineering Construction: Maintaining Electrical Systems of Plant and Equipment  
Engineering Construction: Maintaining Instrument and Control Systems of Plant and Equipment  
Engineering Maintenance  
Engineering Technical Services  
Erecting and Maintaining Steel Tower Overhead Lines  
Erecting and Maintaining Wood Pole Overhead Lines  
Install and Commission Machinery and Equipment  
Installing and Commissioning Electrical Systems and Equipment and Maintenance  
Installing and Maintaining Electrical Transmission Substation Plant and Apparatus  
Installing and Maintaining Electricity Substation Plant and Apparatus  
Jointing and Terminating Distribution and Transmission Cables  
Maintaining Electricity Generation Systems  
Operating Multiple Electricity Generation Systems  
Process Engineering Maintenance

**SVQ 2**

Engineering Maintenance  
Installing Electrical Systems and Equipment  
Maintaining Electricity Generation Systems  
Maintaining Security and Emergency Systems  
Operating Single Electricity Generation Systems  
Performing Engineering Operations  
Process Engineering Maintenance  
Specifying Security and Emergency Systems

**SVQ 1**

Cabling and Wiring Loom Manufacture  
Fix Cable Supports  
Fixing Cable  
Processing Engineering Maintenance

# Electrical Engineering

## 5. notes on entry to jobs and careers

### Entry routes

- ◆ **School leavers** — could enter FE courses at NC, HNC, HND level or HE courses at degree level depending on school qualifications.
- ◆ **Direct entry into employment** — is possible before or after FE or HE courses.
- ◆ **Adult entry** — mature entrants would normally enter a National Certificate programme; a bridging course may be necessary depending on qualifications and experience.

### SVQ access

SVQs are normally work-based and obtained after or during FE or HE courses.

The Professional Qualifications of Technician, Incorporated Engineer and Chartered Engineer are awarded by the Engineering Council. In addition to appropriate academic qualifications candidates must have work experience and undertake further work-based training and awards. They must also hold an appropriate post of responsibility.

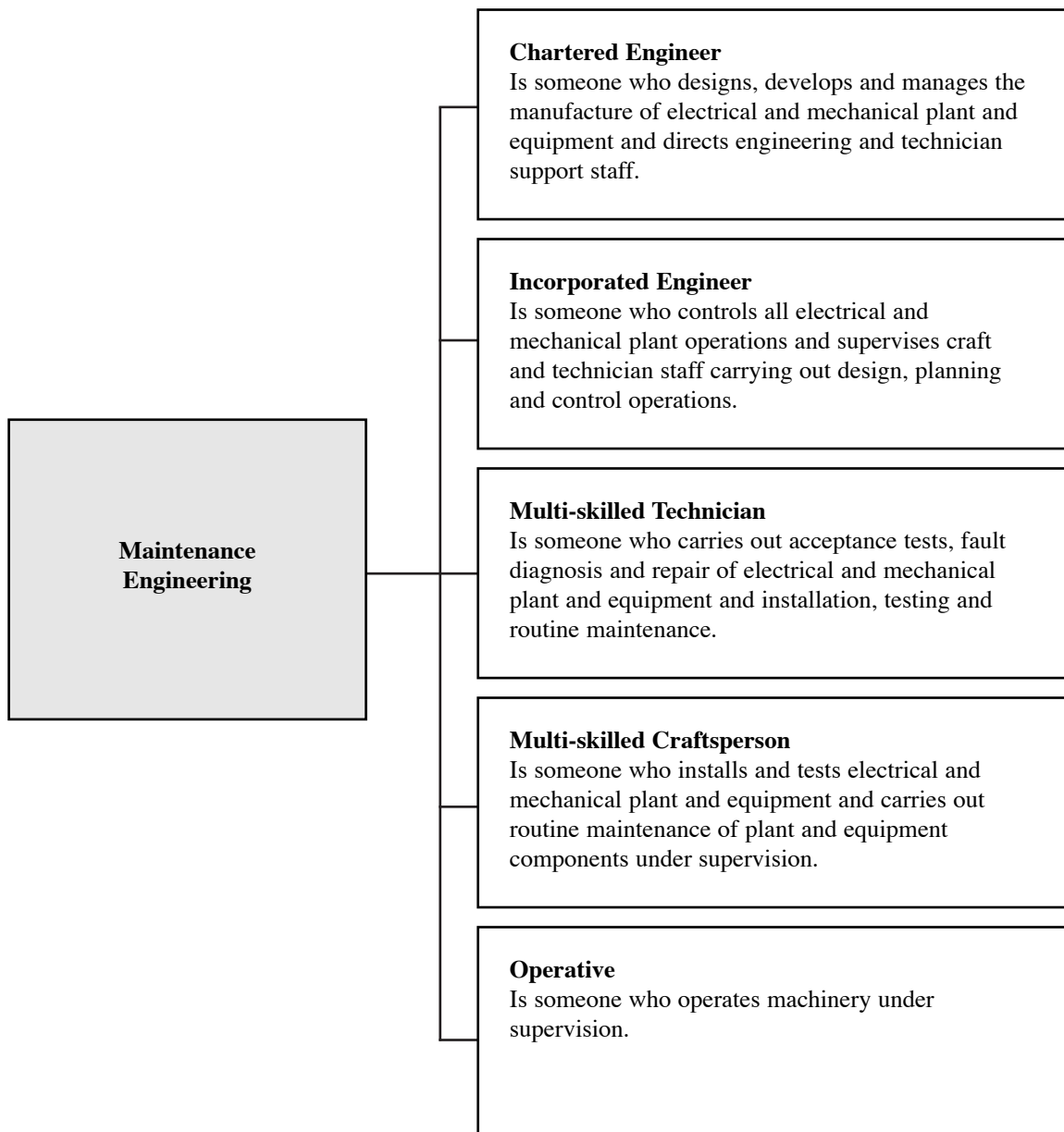
### Entry requirements

- ◆ Entry to some jobs is possible with no formal qualifications
- ◆ Entry to an SGA ranges from no formal qualifications to three or four Standard Grades. Useful subjects include English, Maths, Physics, Science, Technological Studies, Craft and Design, Computing
- ◆ HNCs/HNDs will require an appropriate SGA or two Highers and three Standard Grades including Maths, Physics or Technological Studies
- ◆ Degree courses will usually require three or four Highers including Maths and Physics or Technological Studies and appropriate Standard Grades; or appropriate HNC/HND.

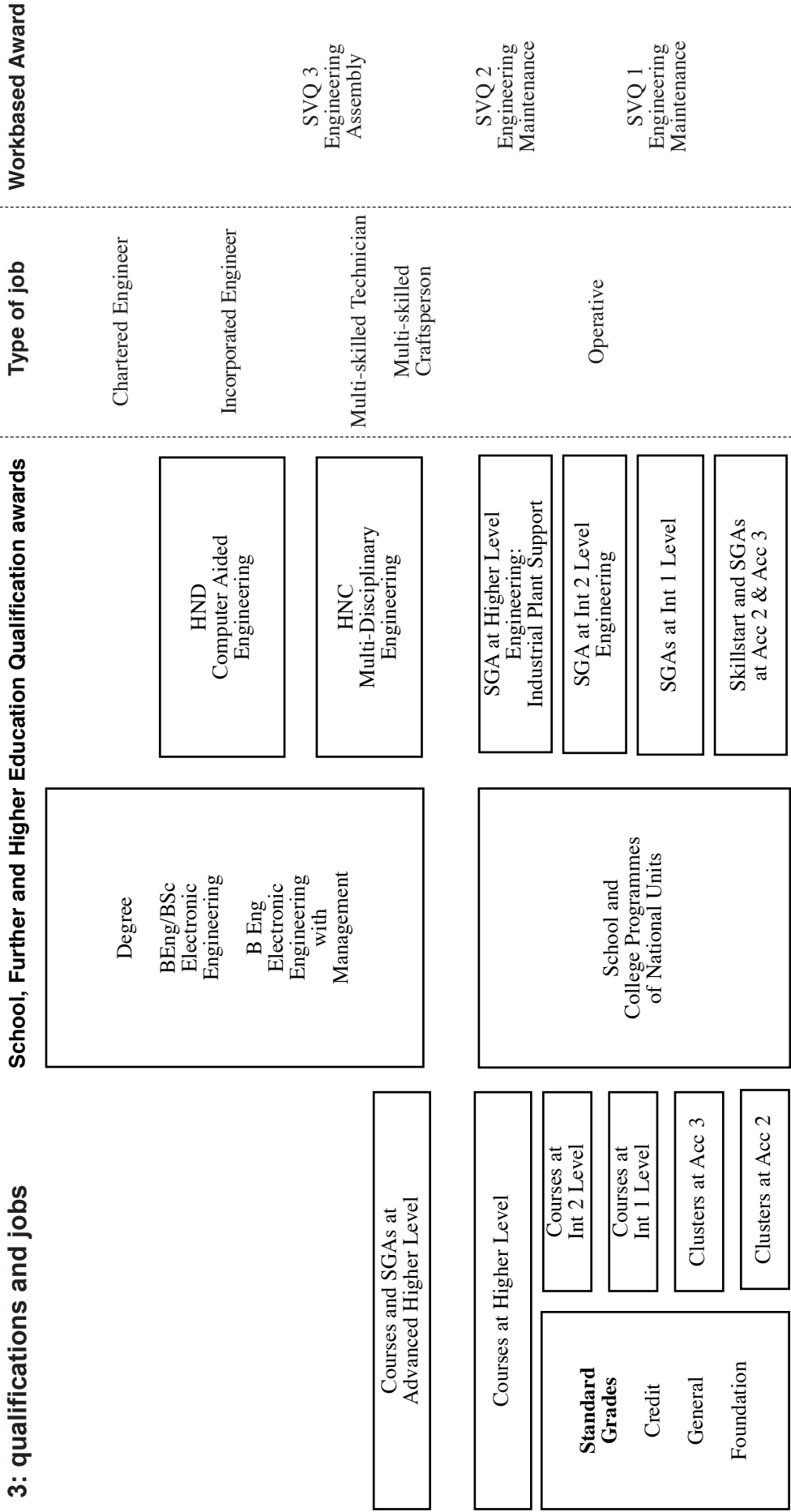
**Note** — entry requirements vary between institutions. Check prospectuses before applying.

# Maintenance Engineering

## 2. jobs and careers



# Maintenance Engineering



This diagram outlines the main qualifications in the Maintenance Engineering area. A full list of all SQA qualifications is on the following pages. People can progress vertically from one qualification to another, eg from a Course at Int 1 to a Course at Int 2. In addition people can progress diagonally from one level of Standard Grade to a higher level of Course or Scottish Group Award (SGA), eg from Standard Grade at General level to Courses or SGAs at Int 2 level.

In this diagram, SVQs and PDAs in the Vocational sector are placed according to current practice and usage in illustrating the relationships and pathways between qualifications, jobs and careers.

# Maintenance Engineering

## 4. qualifications

### **HND**

Computer Aided Engineering  
Engineering: Service Engineering  
Integrated Engineering and Manufacture  
Measurement and Control Engineering  
Service Engineering: Agriculture, Horticulture and Construction Plant

### **HNC**

Building Services Plant Engineering  
Multi-disciplinary Engineering  
Service Engineering: Agriculture, Horticulture and Construction Plant

### **PDA**

#### **Adv Certificate**

Engineering Practice: Manufacture and Engineering Support

### **SGA**

#### **Higher**

Engineering: Industrial Plant Support

#### **Int 2**

Engineering

### **GSVQ III**

Engineering: Industrial Plant Support

### **GSVQ II**

Engineering

### **NC Group Award**

Electrical Engineering  
Engineering  
Electrical Engineering Practice  
Engineering Practice  
Measurement and Control

### **National Course**

#### **Higher**

Industrial Plant Support

### **SVQ 3**

Co-ordinate the Provision of Servicing Activities  
Engineering Assembly  
Engineering Construction: Installing Pipework Systems  
Engineering Construction: Maintaining Electrical Systems of Plant and Equipment  
Engineering Construction: Maintaining Instrument and Control Systems of Plant and Equipment  
Engineering Construction: Maintaining Mechanical Systems of Plant and Equipment  
Engineering Construction: Project Control  
Engineering Maintenance  
Engineering Technical Services  
Install and Commission Machinery and Equipment  
Process Engineering Maintenance  
Textile Technician

**SVQ 2**

Engineering Maintenance  
Install and Commission Machinery and Equipment  
Performing Engineering Operations  
Process Engineering Maintenance

**SVQ 1**

Engineering Assembly  
Engineering Maintenance  
Process Engineering Maintenance

# Maintenance Engineering

## 5. notes on entry to jobs and careers

### Entry routes

- ◆ **School leavers** — could enter FE courses at NC, HNC, HND level or HE courses at degree level depending on school qualifications.
- ◆ **Direct entry into employment** — is possible before or after FE or HE courses.
- ◆ **Adult entry** — mature entrants would normally enter a National Certificate programme; a bridging course may be necessary depending on qualifications and experience.

### SVQ access

SVQs are normally work-based and obtained after or during FE or HE courses.

The Professional Qualifications of Technician, Incorporated Engineer and Chartered Engineer are awarded by the Engineering Council. In addition to appropriate academic qualifications candidates must have work experience and undertake further work-based training and awards. They must also hold an appropriate post of responsibility.

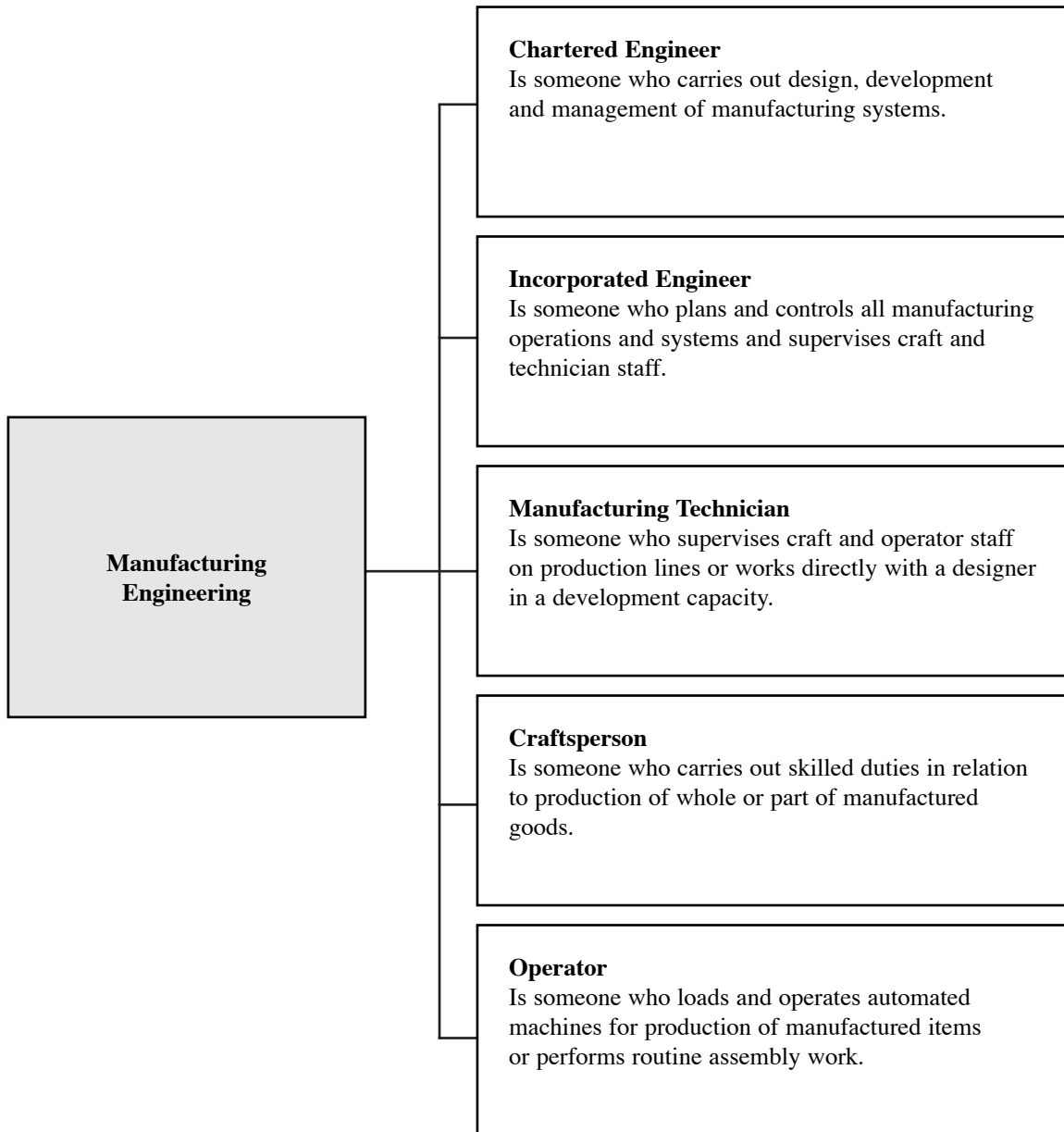
### Entry requirements

- ◆ Entry to some jobs is possible with no formal qualifications
- ◆ Entry to an SGA ranges from no formal qualifications to three or four Standard Grades. Useful subjects include English, Maths, Physics, Science, Technological Studies, Craft and Design, Computing
- ◆ HNCs/HNDs usually require an appropriate SGA or two Highers and three Standard Grades including Maths, Physics or Technological Studies
- ◆ Degree courses usually require three or four Highers including Maths and Physics or Technological Studies and Standard Grades; or appropriate HNC/HND.

**Note** — entry requirements vary between institutions. Check prospectuses before applying.

# Manufacturing Engineering

## 2. jobs and careers



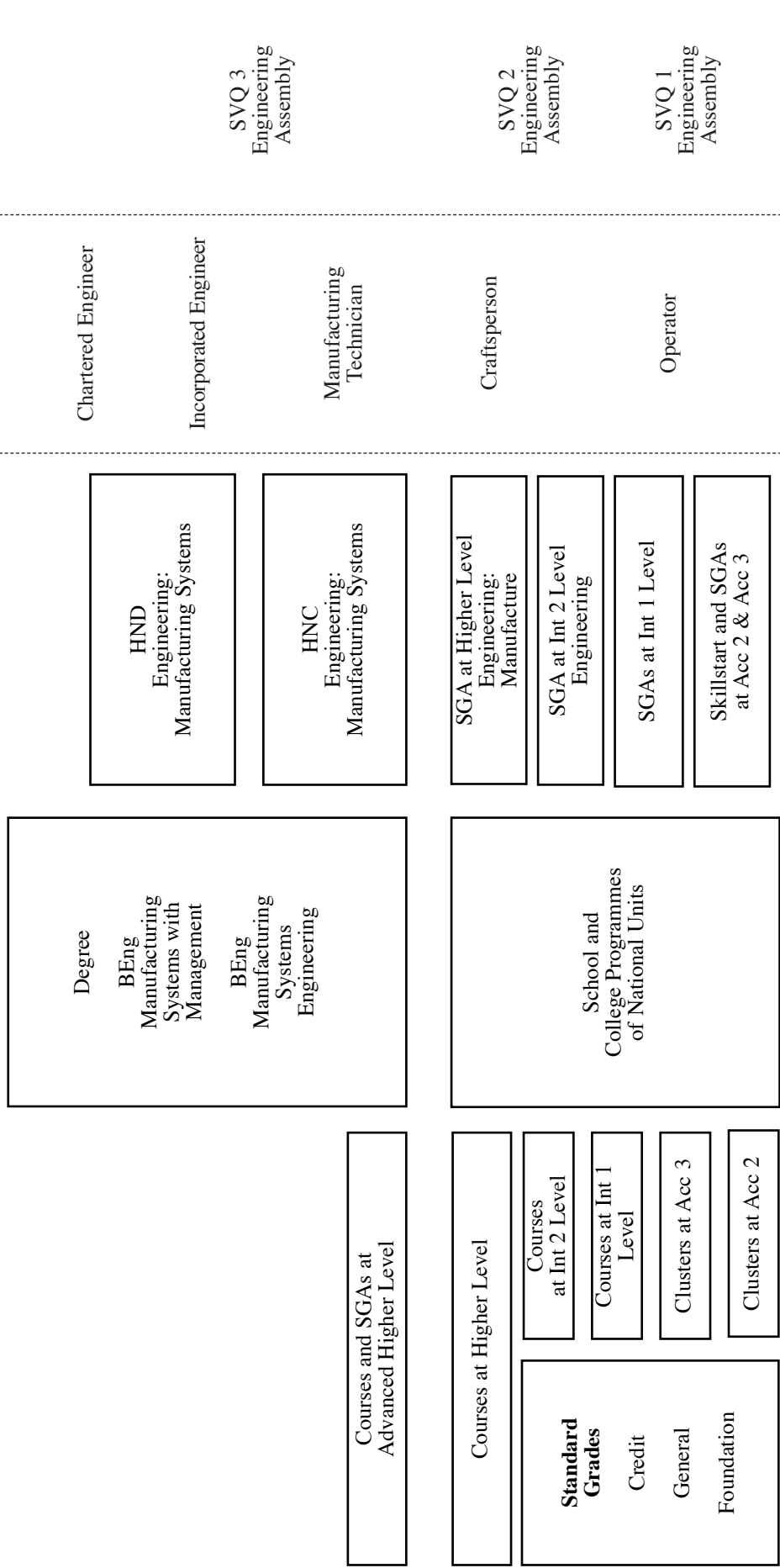
# Manufacturing Engineering

## 3: qualifications and jobs

## School, Further and Higher Education Qualification awards

## Workbased Award

## Type of job



This diagram outlines the main qualifications in the Manufacturing Engineering area. A full list of all SQA qualifications is on the following pages. People can progress vertically from one qualification to another, eg from a Course at Int 1 to a Course at Int 2. In addition people can progress diagonally from one level of Standard Grade to a higher level of Course or Scottish Group Award (SGA), eg from Standard Grade at General level to Courses or SGAs at Int 2 level.

In this diagram, SVQs and PDAs in the Vocational sector are placed according to current practice and usage in illustrating the relationships and pathways between qualifications, jobs and careers.

# Manufacturing Engineering

## 4. qualifications

### **HND**

Clothing Technology and Manufacture  
Computer Aided Draughting and Design  
Engineering  
Engineering: Aeronautical  
Engineering: Manufacturing Systems  
Engineering: Product Design

### **HNC**

Computer Aided Draughting and Design  
Engineering  
Engineering: Aeronautical  
Engineering: Manufacturing Systems  
Polymer Technology  
Process Operations

### **Adv Diploma**

Eco-Design

### **Adv Certificate**

Engineering Practice: Manufacture and Engineering Support

### **Certificate**

Computer Aided Design

### **SGA**

#### **Higher**

Engineering: Manufacture

#### **Int2**

Engineering

### **GSVQ III**

Engineering: Manufacture and Mechanical  
Engineering: Practice  
Technology

### **GSVQ II**

Engineering  
Technology

### **National Course**

#### **Adv Higher**

Manufacturing

#### **Higher**

Manufacturing

#### **Int 2**

Manufacturing Structures

### **NC Group Award**

Aeronautical Engineering  
Aeronautical Engineering Practice  
Engineering  
Engineering Practice

### **SVQ 3**

Carton Manufacture  
Controlling the Process to Make Paper and Board  
Controlling the Process to Coat Paper and Board  
Controlling the Process to Produce Paper and Board Stock  
Engineering Assembly  
Engineering Finishing  
Engineering Machining  
Engineering Material Processing  
Polymer Processing Product Development  
Polymer Processing Technology  
Process Operation: Chemical and Pharmaceutical  
Processing Operations: Hydrocarbons  
Process Operations: Technical Support Chemical and Pharmaceutical  
Reinstating the Condition and Performance of Boats

### **SVQ 2**

Engineering Assembly  
Engineering Construction  
Engineering Finishing  
Engineering Machining  
Engineering Material Processing  
FRP Lamination  
Glass Batch Processing Operations  
Glass Melting Operations  
Glass Processing  
Glass Producing  
High Pressure Aluminium Dye Casting  
Leather Production  
Making Paper and Board  
Making Paper and Board Stock  
Mining Operations  
Mobile Plant Operations: Extraction Process  
Operating Process Plant: Sludge  
Operating Process Plant: Waste Water  
Operating Process Plant: Water  
Performing Manufacturing Operations  
Process Operations: Chemical and Pharmaceutical  
Process Operations: Extractive Industries  
Process Operations: Hydrocarbons  
Processing Rubber: General Rubber Goods  
Processing Rubber: Retreading Tyres  
Processing Rubber: Tyre Manufacture  
Production Support Operations: Glass — Cold End Operations  
Refinery Field Operations  
Scientific Glass Product Fabrication

**SVQ 1**

Engineering Assembly

Engineering Finishing

Engineering Machining

Engineering Material Processing

Glass Processing

High Pressure Aluminium Dye Casting

Mobile Plant Operations: Extractive Industries

Performing Engineering Operations

Plastics Processing Operations

Process Operations: Chemical and Pharmaceutical

Processing Operations: Hydrocarbons

Processing Rubber: General Rubber Goods

Processing Rubber: Retreading Tyres

Processing Rubber: Tyre Manufacture

Scientific Glass Product Fabrication

# Manufacturing Engineering

## 5. notes on entry to jobs and careers

### Entry routes

- ◆ **School leavers** — could enter FE courses at NC, HNC, HND level or HE courses at degree level depending on school qualifications.
- ◆ **Direct entry into employment** — is possible before or after FE or HE courses.
- ◆ **Adult entry** — mature entrants would normally enter a National Certificate programme; a bridging course may be necessary depending on qualifications and experience.

### SVQ access

SVQs are normally work-based and obtained after or during FE or HE courses.

The Professional Qualifications of Technician, Incorporated Engineer and Chartered Engineer are awarded by the Engineering Council. In addition to appropriate academic qualifications candidates must have work experience and undertake further work-based training and awards. They must also hold an appropriate post of responsibility.

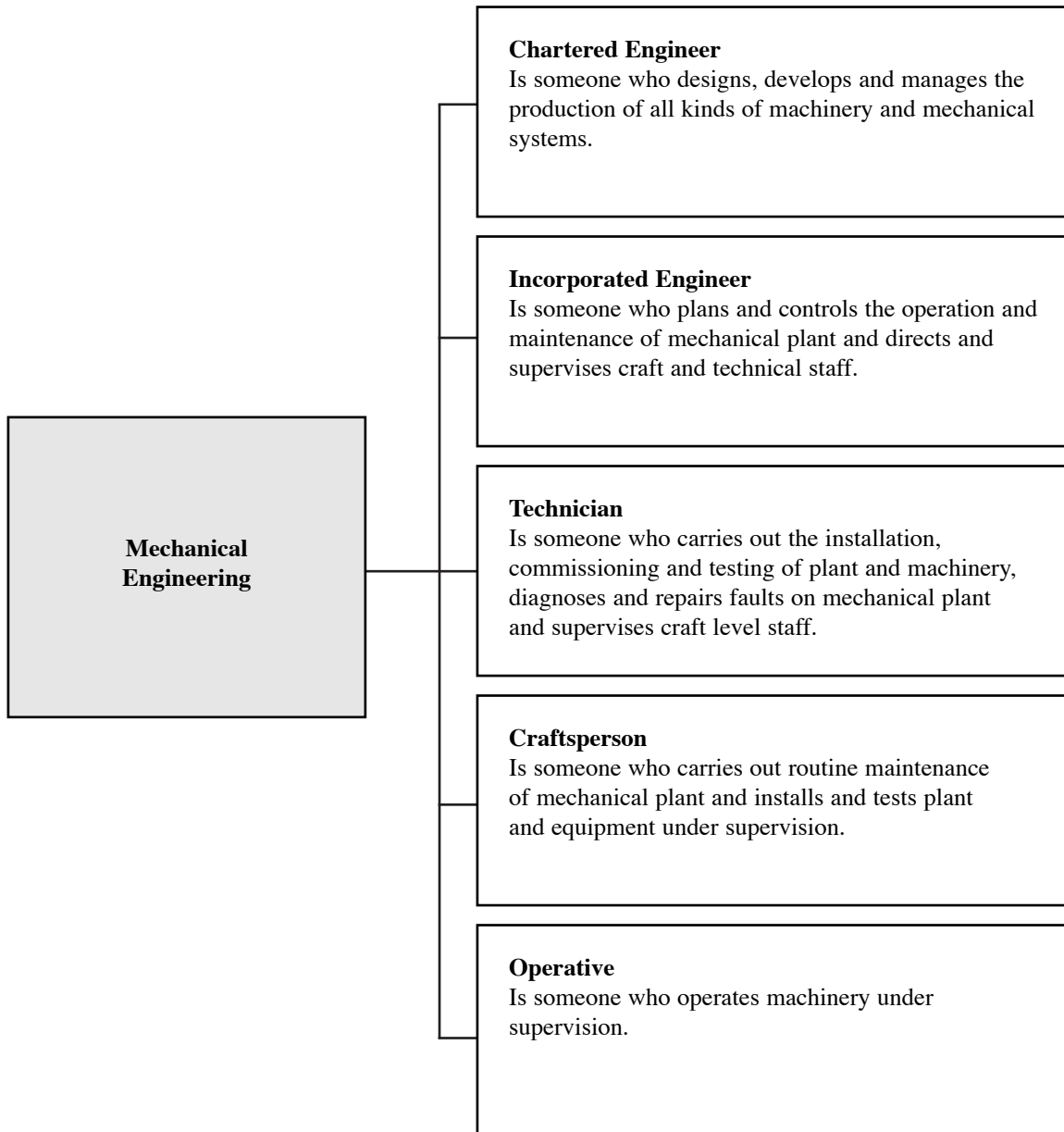
### Entry requirements

- ◆ Some jobs require no formal entry qualifications
- ◆ Entry to an SGA ranges from no formal qualifications to three or four Standard Grades. Useful subjects include English, Maths and a Science or Technology subject
- ◆ HNCs/HNDs usually require an appropriate SGA or two Highers and three Standard Grades including Maths and a Science or Technology subject
- ◆ Degree courses usually require three or four Highers including Maths and Physics or Technological Studies and Standard Grades; or appropriate HNC/HND.

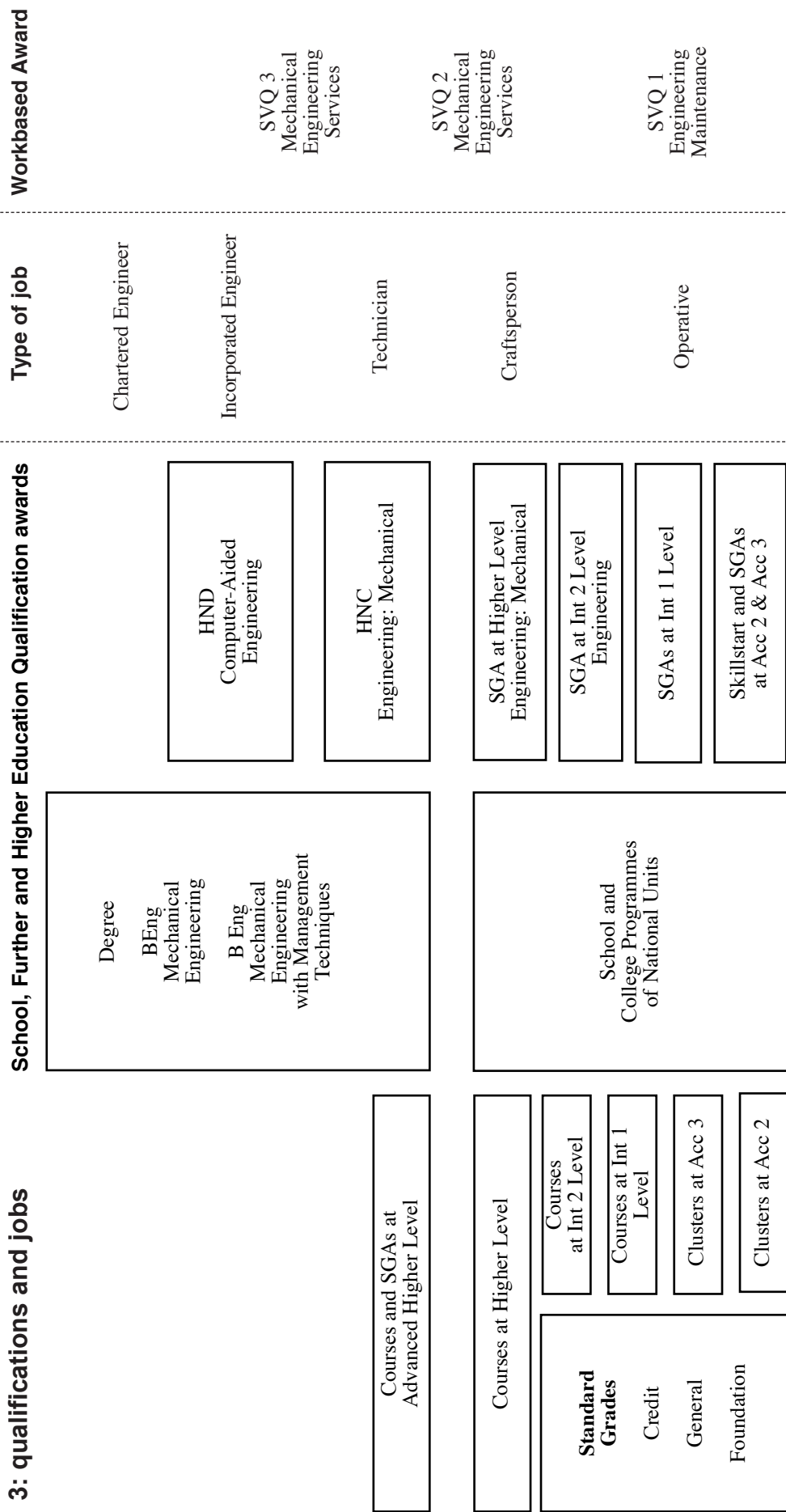
**Note** — entry requirements vary between institutions. Check prospectuses before applying.

# Mechanical Engineering

## 2. jobs and careers



# Mechanical Engineering



This diagram outlines the main qualifications in the Mechanical Engineering area. A full list of all SQA qualifications is on the following pages. People can progress vertically from one qualification to another, eg from a Course at Int 1 to a Course at Int 2. In addition people can progress diagonally from one level of Standard Grade to a higher level of Course or Scottish Group Award (SGA), eg from Standard Grade at General level to Courses or SGAs at Int 2 level.

In this diagram, SVQs and PDAs in the Vocational sector are placed according to current practice and usage in illustrating the relationships and pathways between qualifications, jobs and careers.

# Mechanical Engineering

## 4. qualifications

### **HND**

Computer Aided Draughting and Design  
Computer Aided Engineering  
Engineering  
Engineering: Marine  
Engineering: Mechanical  
Integrated Engineering and Manufacture  
Petroleum and Mechanical Engineering

### **HNC**

Engineering  
Engineering: Computer Technology  
Engineering: Mechanical  
Engineering: Practice  
Mechanical Engineering

### **PDA**

#### **Adv Certificate**

Engineering Practice: Manufacture and Engineering Support

### **NC Group Award**

Engineering  
Engineering Practice  
Shipbuilding  
Shipbuilding Practice

### **SGA**

#### **Higher**

Engineering: Mechanical  
Engineering: Practice

#### **Int2**

Engineering

### **GSVQ III**

Engineering: Manufacture and Mechanical  
Engineering: Practice  
Technology

### **GSVQ II**

Engineering  
Technology

### **National Course**

#### **Higher**

Mechanical Engineering  
Engineering Practices

#### **Int 2**

Mechanical Structures

**SVQ 4**

Fishing Vessel Engineering  
Merchant Vessel Engineering  
Shipbuilding and Marine Engineering: Management  
Shipbuilding and Marine Engineering: Technician Engineer

**SVQ 3**

Engineering Construction: Design  
Engineering Construction: Erecting Capital Plant Steel Structures  
Engineering Construction: Installing Mechanical Plant  
Engineering Construction: Installing Pipework Systems  
Engineering Construction: Lifting and Positioning Capital Plant Steel Structures  
Engineering Construction: Maintaining Mechanical Systems of Plant and Equipment  
Engineering Construction: Project Control  
Engineering Maintenance  
Engineering Technical Services  
Fishing Vessel Engineering  
Install and Commission Machinery and Equipment  
Mechanical Engineering Services — Heating and Ventilating Installation  
Mechanical Engineering Services — Heating and Ventilating: Ductwork Installation  
Mechanical Engineering Services — Heating and Ventilating: Service and Maintenance: Rectification of Systems  
Mechanical Engineering Services: Ammonia Refrigeration Systems  
Mechanical Engineering Services: Commercial and Industrial Halocarbon Refrigeration Systems  
Merchant Vessel Engineering  
Offshore Drilling Operations  
Refinery Control Room Operations  
Rigging  
Shipbuilding and Marine Engineering: Supervision (Skill)  
Shipbuilding and Marine Engineering: Supervision (Technician)

**SVQ 2**

Engineering Construction: Lifting and Positioning Capital Plant Steel Structures

Engineering Maintenance

Fishing Vessel Engineering

Install and Commission Machinery and Equipment

Land Drilling

Mechanical Engineering — Heating and Ventilating Installation: Domestic

Mechanical Engineering — Heating and Ventilating: Industrial and Commercial

Mechanical Engineering Services — Heating and Ventilating: Servicing and Maintenance of System Components

Mechanical Engineering Services: Drink Dispensing Systems

Mechanical Engineering Services: Small Commercial Refrigeration and Air Conditioning Systems

Offshore Drilling Operations

Rigging

Well Services: Mechanical Wireline

**SVQ 1**

Engineering Maintenance

Land Drilling

Offshore Drilling Operations

Rigging

# Mechanical Engineering

## 5. notes on entry to jobs and careers

### Entry routes

- ◆ **School leavers** — could enter FE courses at NC, HNC, HND level or HE courses at degree level depending on school qualifications.
- ◆ **Direct entry into employment** — is possible before or after FE or HE courses.
- ◆ **Adult entry** — mature entrants would normally enter a National Certificate programme; a bridging course may be necessary depending on qualifications and experience.

### SVQ access

SVQs are normally workbased and obtained after or during FE or HE courses.

The Professional Qualifications of Technician, Incorporated Engineering and Chartered Engineer are awarded by the Engineering Council. In addition to appropriate academic qualifications candidates must have work experience and undertake further work-based training and awards. They must also hold an appropriate post of responsibility.

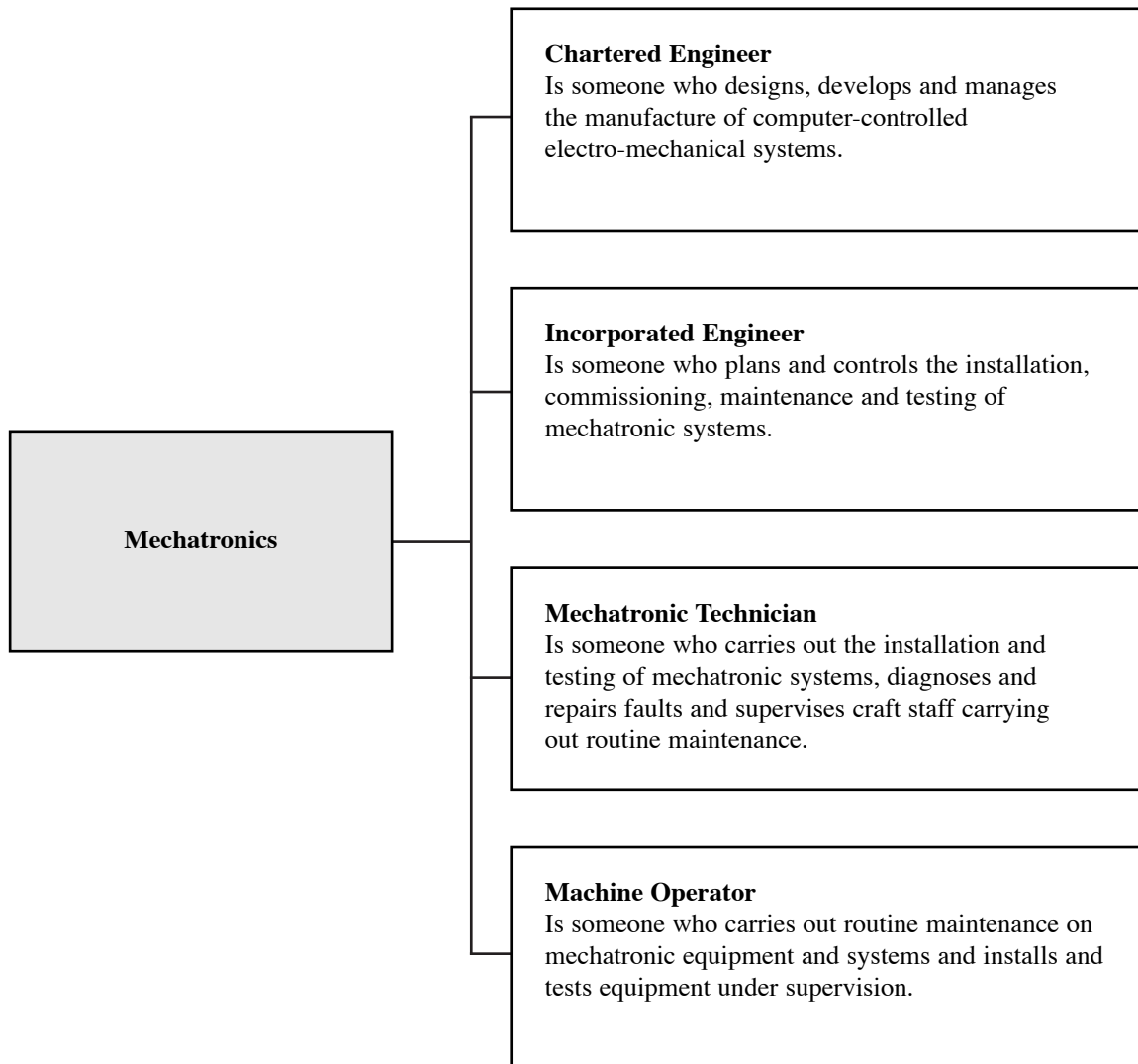
### Entry requirements

- ◆ Some jobs require no formal entry qualifications.
- ◆ Entry to an SGA ranges from no formal qualifications to three or four Standard Grades. Useful subjects include English, Maths and a Science or Technology Subject.
- ◆ HNCs/HNDs usually requires an appropriate SGA or two Highers and three Standard Grades including Maths and a Science or Technology subject.
- ◆ Degree courses usually require three or four Highers including Maths and Physics or Technological Studies, and Standard Grades; or appropriate HNC/HND.

**Note** — entry requirements vary between institutions. Check prospectuses before applying.

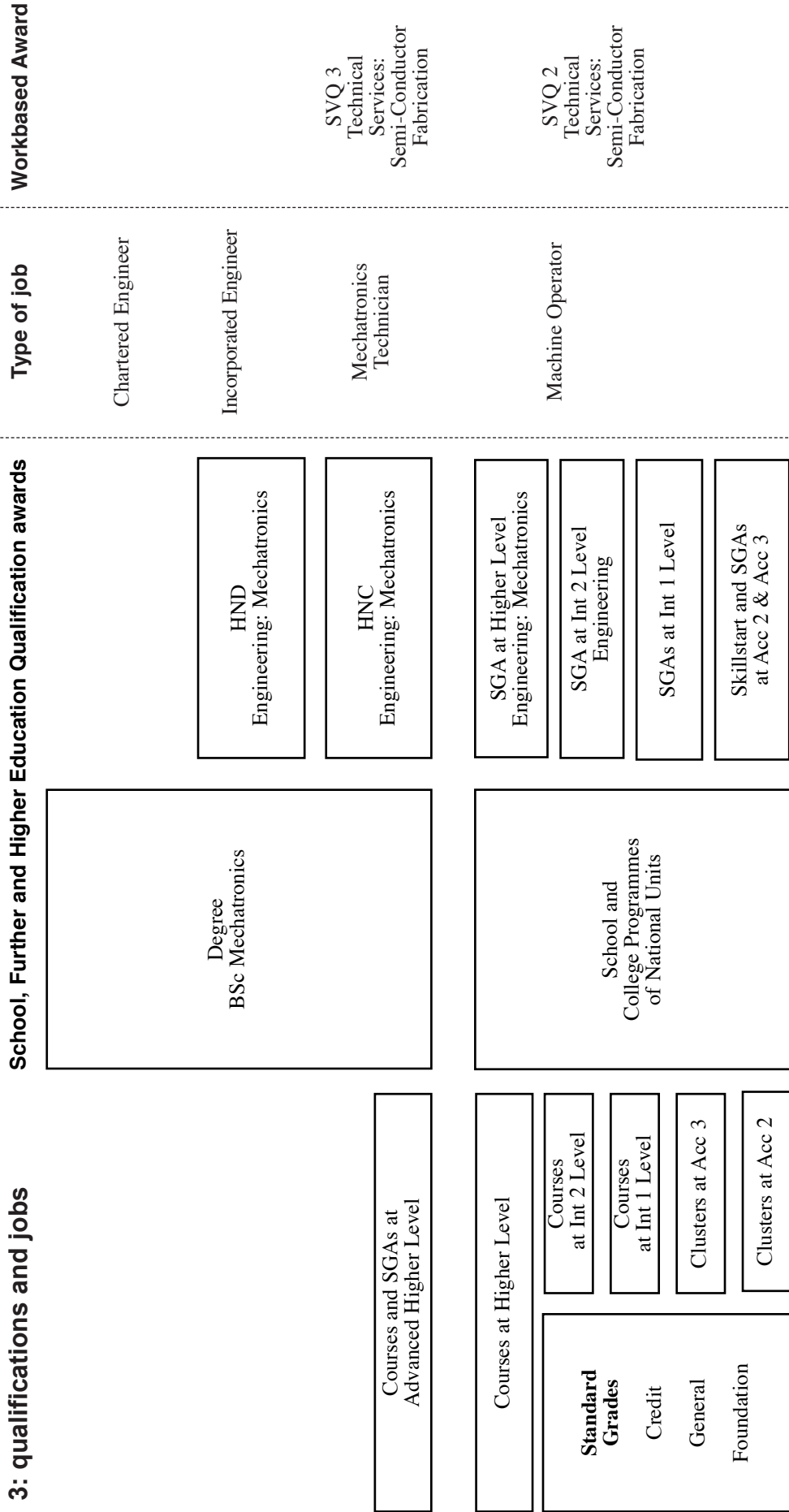
# Mechatronics

## 2. jobs and careers



# Mechatronics

## 3: qualifications and jobs



This diagram outlines the main qualifications in the Mechatronics area. A full list of all SQA qualifications is on the following pages. People can progress vertically from one qualification to another, eg from a Course at Int 1 to a Course at Int 2. In addition people can progress diagonally from one level of Standard Grade to a higher level of Course or Scottish Group Award (SGA), eg from Standard Grade at General level to Courses or SGAs at Int 2 level.

In this diagram, SVQs and PDAs in the Vocational sector are placed according to current practice and usage in illustrating the relationships and pathways between qualifications, jobs and careers.

# Mechatronics

## 4. qualifications

### **HND**

Engineering: Mechatronics  
Mechatronics  
Semiconductor Process Engineering

### **HNC**

Engineering: Mechatronics  
Mechatronics  
Semiconductor Process Engineering

### **SGA**

#### **Higher**

Engineering: Mechatronics

#### **Int 2**

Engineering

### **GSVQ III**

Engineering: Mechatronics

### **GSVQ II**

Engineering

### **National Course**

#### **Adv Higher**

Mechatronics

#### **Higher**

Mechatronics

### **SVQ 3**

Technical Services: Semi-conductor Fabrication

### **SVQ 2**

Technical Services: Semi-conductor Fabrication

# Mechatronics

## 5. notes on entry to jobs and careers

### Entry routes

- ◆ **School leavers** — could enter FE courses at NC, HNC, HND level or HE courses at degree level depending on school qualifications.
- ◆ **Direct entry into employment** — is possible before or after FE or HE courses.
- ◆ **Adult entry** — mature entrants would normally enter a National Certificate programme; a bridging course may be necessary depending on qualifications and experience.

### SVQ access

SVQs are normally workbased and obtained after or during FE or HE courses.

The Professional Qualifications of Technician, Incorporated Engineering and Chartered Engineer are awarded by the Engineering Council. In addition to appropriate academic qualifications candidates must have work experience and undertake further work-based training and awards. They must also hold an appropriate post of responsibility.

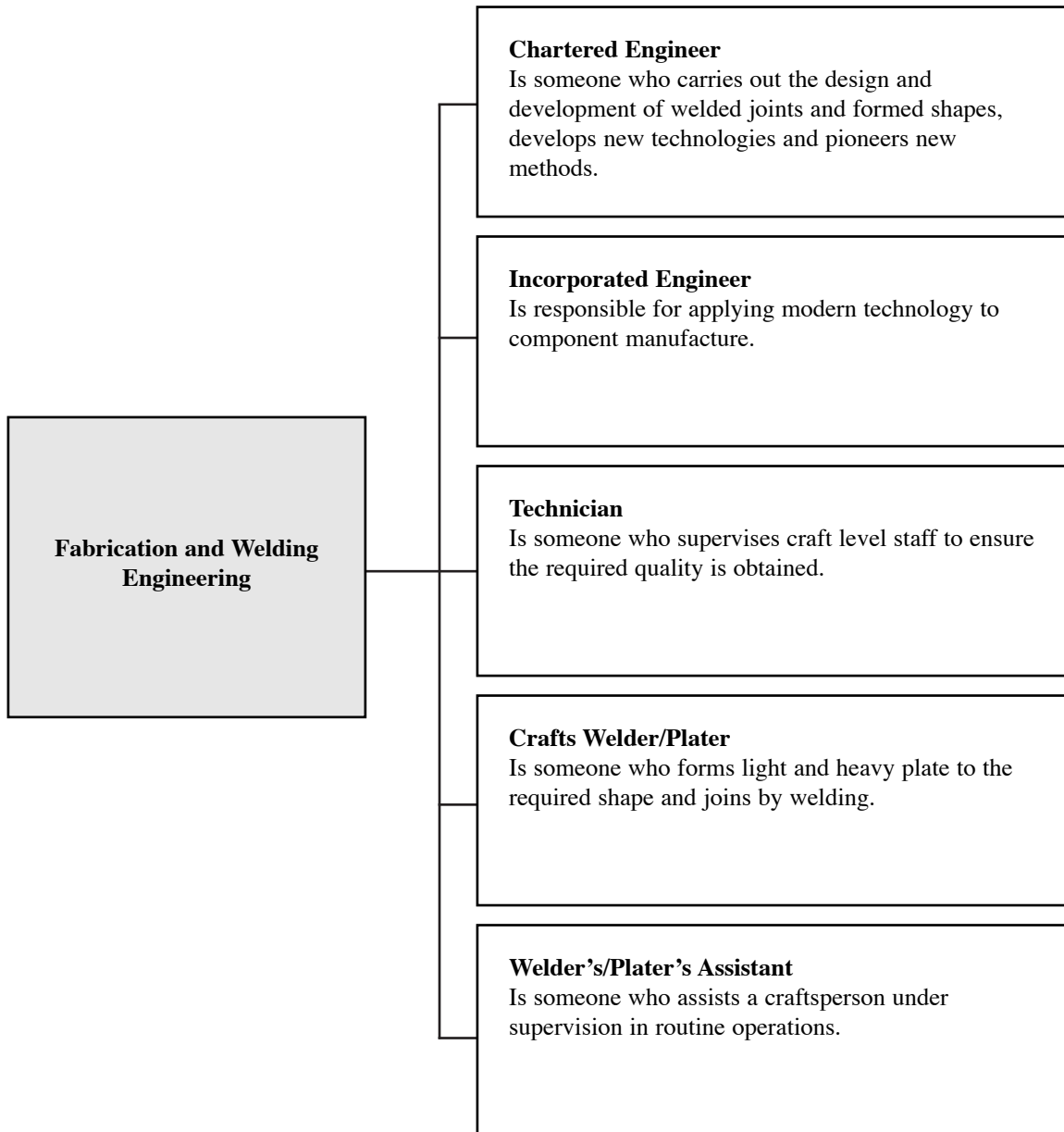
### Entry requirements

- ◆ Some jobs require no formal entry qualifications.
- ◆ Entry to an SGA ranges from no formal qualifications to three or four Standard Grades. Useful subjects include English, Maths and a Science of Technology Subject.
- ◆ HNCs/HNDs usually requires an appropriate SGA or two Highers including Maths and a Science or Technology subject and Standard Grades.
- ◆ Degree courses usually require three or four Highers including Maths and Physics or Technological Studies, and Standard Grades; or appropriate HNC/HND.

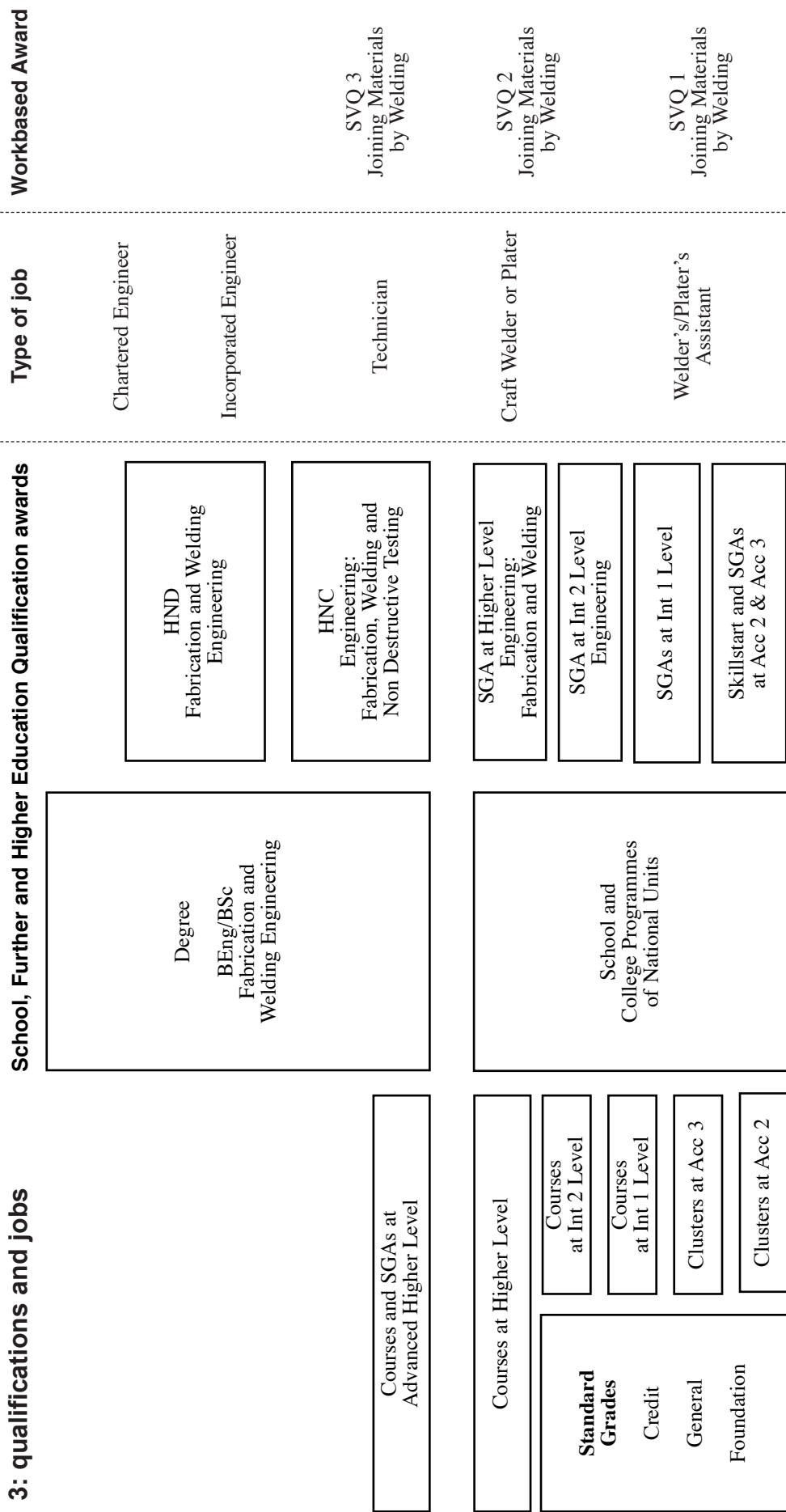
**Note** — entry requirements vary between institutions. Check prospectuses before applying.

# Fabrication and Welding Engineering

## 2. jobs and careers



# Fabrication and Welding Engineering



This diagram outlines the main qualifications in the Fabrication and Welding area. A full list of all SQA qualifications is on the following pages. People can progress vertically from one qualification to another, eg from a Course at Int 1 to a Course at Int 2. In addition people can progress diagonally from one level of Standard Grade to a higher level of Course or Scottish Group Award (SGA), eg from Standard Grade at General level to Courses or SGAs at Int 2 level.

In this diagram, SVQs and PDAs in the Vocational sector are placed according to current practice and usage in illustrating the relationships and pathways between qualifications, jobs and careers.

# Fabrication and Welding Engineering

## 4. qualifications

### **HND**

Engineering: Fabrication, Welding and NDT  
Fabrication and Welding Engineering

### **HNC**

Engineering: Fabrication, Welding and NDT  
Engineering: Practice

### **PDA**

#### **Adv Certificate**

Engineering Practice: Fabrication and Welding

### **SGA**

#### **Higher**

Engineering: Fabrication and Welding

#### **Int 2**

Engineering

### **GSVQ III**

Engineering: Practice  
Fabrication and Welding  
Technology

### **GSVQ II**

Engineering  
Technology

### **National Course**

#### **Higher**

Fabrication and Welding Engineering  
Process Technology: Fabrication and Welding

#### **Int 2**

Fabrication & Welding

### **NC Group Award**

Fabrication and Welding Engineering  
Fabrication and Welding Engineering Practice

### **SVQ 3**

Engineering Construction: Erecting Capital Plant Steel Structures  
Engineering Construction: Fabricating Steel Structures  
Engineering Construction: Installing Pipework Systems  
Engineering Construction: Joining Materials by Welding  
Joining Materials by Welding  
Rigging

### **SVQ 2**

Joining Materials by Welding  
Rigging

### **SVQ 1**

Joining Materials by Welding  
Rigging

# Fabrication and Welding Engineering

## 5. notes on entry to jobs and careers

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### Entry requirements

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- ◆ HNCs/HNDs usually requires an appropriate SGA or two Highers including Maths and a Science or Technology subject plus appropriate Standard Grades.
- ◆ Degree courses usually require three or four Highers including Maths, Chemistry, Physics or Technological Studies, and Standard Grades; or appropriate HNC/HND.

**Note** — entry requirements vary between institutions. Check prospectuses before applying.