

2024 Engineering Higher Nationals ([Engineering](#) and [Aeronautical Engineering](#))

Examples of valid and invalid unit combinations

HNC in Engineering (Electrical and Electronic)

Valid combination of units				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	4002	Engineering Mathematics	CM	15
2	4003	Engineering Science I	CM	15
3	4001	Engineering Design	CG1	15
4	4004	Managing a Professional Engineering Project	CG1	15
5	4019	Electrical and Electronic Principles	SM	15
6	4023	Computer Aided Design and Manufacture (CAD/CAM)	O	15
7	4024	Electro, Pneumatic and Hydraulic Systems	O	15
8	4025	Operations and Plant Management	O	15
Total Credits at Level 4				120
KEY:				
CM	Core Mandatory		CG2	Core Group 2
CG1	Core Group 1		CM2	Core Mandatory 2
CM1	Core Mandatory 1		O	Optional
SM	Specialist Mandatory			
MLN	Meeting Local Needs			

Invalid combination of units				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	4002	Engineering Mathematics	CM	15
2	4003	Engineering Science I	CM	15
3	4001	Engineering Design	CG1	15
4	4062	Professional Engineering Practice	CG2	15
5	4019	Electrical and Electronic Principles	SM	15
6	4023	Computer Aided Design and Manufacture (CAD/CAM)	O	15
7	4024	Electro, Pneumatic and Hydraulic Systems	O	15
8	4025	Operations and Plant Management	O	15
Total Credits at Level 4				120
KEY:				
CM	Core Mandatory		CG2	Core Group 2
CG1	Core Group 1		CM2	Core Mandatory 2
CM1	Core Mandatory 1		O	Optional
SM	Specialist Mandatory			
MLN	Meeting Local Needs			

HNC in Engineering (Mechanical)

Valid combination of units				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	4002	Engineering Mathematics	CM	15
2	4003	Engineering Science I	CM	15
3	4062	Professional Engineering Practice	CG2	15
4	4063	Engineering Mechanics and Materials	CG2	15
5	4008	Mechanical Principles	SM	15
6	4013	Fundamentals of Thermodynamics and Heat Transfer	SM	15
7	4017	Quality and Process Improvement	O	15
8	4023	Computer Aided Design and Manufacture (CAD/CAM)	O	15
Total Credits at Level 4				120
KEY:				
CM	Core Mandatory		CG2	Core Group 2
CG1	Core Group 1		CM2	Core Mandatory 2
CM1	Core Mandatory 1		O	Optional
SM	Specialist Mandatory			
MLN	Meeting Local Needs			

Invalid combination of units				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	4002	Engineering Mathematics	CM	15
2	4003	Engineering Science I	CM	15
3	4062	Professional Engineering Practice	CG2	15
4	4063	Engineering Mechanics and Materials	CG2	15
5	4008	Mechanical Principles	SM	15
6	4013	Fundamentals of Thermodynamics and Heat Transfer	SM	15
7	4014	Production Engineering for Manufacture	O	15
8	4017	Quality and Process Improvement	O	15
Total Credits at Level 4				120
KEY:				
CM	Core Mandatory		CG2	Core Group 2
CG1	Core Group 1		CM2	Core Mandatory 2
CM1	Core Mandatory 1		O	Optional
SM	Specialist Mandatory			
MLN	Meeting Local Needs			

HND in Engineering (Operations)

Valid combination of units				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	4002	Engineering Mathematics	CM	15
2	4003	Engineering Science I	CM	15
3	4001	Engineering Design	CG1	15
4	4004	Managing a Professional Engineering Project	CG1	15
5	4018	Maintenance Engineering	O	15
6	4025	Operations and Plant Management	O	15
7	4026	Electrical Systems and Fault Finding	O	15
8	4027	CAD for Schematics in Maintenance Engineering	O	15
9	5002	Professional Engineering Management	CM	15
10	5001	Research Project	CM1	30
11	5006	Further Engineering Mathematics	SM	15
12	5022	Industrial Services	SM	15
13	5023	Thermofluids	SM	15
14	5051	Heating, Ventilation and Air Conditioning (HVAC)	SM	15
15	5011	Industrial Power, Electronics and Storage	O	15
Total Credits at Level 4 and Level 5				240
KEY:				
CM	Core Mandatory		CG2	Core Group 2
CG1	Core Group 1		CM2	Core Mandatory 2
CM1	Core Mandatory 1		O	Optional
SM	Specialist Mandatory			
MLN	Meeting Local Needs			

Invalid combination of units				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	4002	Engineering Mathematics	CM	15
2	4003	Engineering Science I	CM	15
3	4001	Engineering Design	CG1	15
4	4004	Managing a Professional Engineering Project	CG1	15
5	4018	Maintenance Engineering	O	15
6	4025	Operations and Plant Management	O	15
7	4026	Electrical Systems and Fault Finding	O	15
8	4027	CAD for Schematics in Maintenance Engineering	O	15

9	5002	Professional Engineering Management	CM	15																				
10	5001	Research Project	CM1	30																				
11	5041	Engineering Project	CM2	15																				
12	5006	Further Engineering Mathematics	SM	15																				
13	5022	Industrial Services	SM	15																				
14	5023	Thermofluids	SM	15																				
15	5051	Heating, Ventilation and Air Conditioning (HVAC)	SM	15																				
Total Credits at Level 4 and Level 5				240																				
<p>KEY:</p> <table> <tr> <td>CM</td> <td>Core Mandatory</td> <td>CG2</td> <td>Core Group 2</td> </tr> <tr> <td>CG1</td> <td>Core Group 1</td> <td>CM2</td> <td>Core Mandatory 2</td> </tr> <tr> <td>CM1</td> <td>Core Mandatory 1</td> <td>O</td> <td>Optional</td> </tr> <tr> <td>SM</td> <td>Specialist Mandatory</td> <td></td> <td></td> </tr> <tr> <td>MLN</td> <td>Meeting Local Needs</td> <td></td> <td></td> </tr> </table>					CM	Core Mandatory	CG2	Core Group 2	CG1	Core Group 1	CM2	Core Mandatory 2	CM1	Core Mandatory 1	O	Optional	SM	Specialist Mandatory			MLN	Meeting Local Needs		
CM	Core Mandatory	CG2	Core Group 2																					
CG1	Core Group 1	CM2	Core Mandatory 2																					
CM1	Core Mandatory 1	O	Optional																					
SM	Specialist Mandatory																							
MLN	Meeting Local Needs																							

HND in Aeronautical Engineering (Aerospace) continued...

Valid combination of units (Level 4)				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	4002	Engineering Mathematics	CM	15
2	4003	Engineering Science I	CM	15
3	4062	Professional Engineering Practice	CG2	15
4	4063	Engineering Mechanics and Materials	CG2	15
5	4041	Aircraft Aerodynamics	SM	15
6	4088	Space Technologies and Manufacturing	SM	15
7	4023	Computer Aided Design and Manufacture (CAD/CAM)	O	15
8	4044	Composite Materials for Aerospace Applications	O	15
Total Credits at Level 4				120
KEY:				
CM	Core Mandatory		CG2	Core Group 2
CG1	Core Group 1		CM2	Core Mandatory 2
CM1	Core Mandatory 1		O	Optional
SM	Specialist Mandatory			
MLN	Meeting Local Needs			

Invalid combination of units (Level 4)				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	4002	Engineering Mathematics	CM	15
2	4003	Engineering Science I	CM	15
3	4062	Professional Engineering Practice	CG2	15
4	4001	Engineering Design	CG1	15
5	4041	Aircraft Aerodynamics	SM	15
6	4088	Space Technologies and Manufacturing	SM	15
7	4023	Computer Aided Design and Manufacture (CAD/CAM)	O	15
8	4044	Composite Materials for Aerospace Applications	O	15
Total Credits at Level 4				120
KEY:				
CM	Core Mandatory		CG2	Core Group 2
CG1	Core Group 1		CM2	Core Mandatory 2
CM1	Core Mandatory 1		O	Optional
SM	Specialist Mandatory			
MLN	Meeting Local Needs			

HND in Aeronautical Engineering (Aerospace)

Valid combination of units (Level 5)				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	5002	Professional Engineering Management	CM	15
2	5041	Engineering Project	CM2	15
3	5006	5006: Further Engineering Mathematics	SM	15
4	5026	5026: Aircraft Flight Control Systems*	SM	15
5	5055	5055: Aerospace Propulsion Principles and Technology	SM	15
6	5028	Aircraft Structural Integrity	O	15
7	5031	Advanced Composite Materials for Aerospace Applications	O	15
8	5056	Conceptual Aircraft Design	O	15
Total Credits at Level 5				120
KEY:				
CM	Core Mandatory		CG2	Core Group 2
CG1	Core Group 1		CM2	Core Mandatory 2
CM1	Core Mandatory 1		O	Optional
SM	Specialist Mandatory			
MLN	Meeting Local Needs			

Invalid combination of units (Level 5)				
Number of Units	Unit Code	Unit Title	Unit Status	Credits
1	5002	Professional Engineering Management	CM	15
2	5001	Research Project	CM1	30
3	5041	Engineering Project	CM2	15
4	5006	5006: Further Engineering Mathematics	SM	15
5	5026	5026: Aircraft Flight Control Systems*	SM	15
6	5055	5055: Aerospace Propulsion Principles and Technology	SM	15
7	5028	Aircraft Structural Integrity	O	15
Total Credits at Level 5				120
KEY:				
CM	Core Mandatory		CG2	Core Group 2
CG1	Core Group 1		CM2	Core Mandatory 2
CM1	Core Mandatory 1		O	Optional
SM	Specialist Mandatory			
MLN	Meeting Local Needs			