

# Monash Science Pathway to Master of Professional Engineering

## MPE commencement: FEBRUARY INTAKE

This progression map provides advice on the suitable sequencing of units and guidance on how to plan unit enrolment for each semester of study. It does not substitute for the list of required units as described in the course 'Requirements' section of the [Handbook](#). Please note that the map is subject to updates. Update version: 2 September 2021

### Monash Science Pathway

You must take these units during your [Bachelor of Science](#) degree:

<b>Science units:</b> Physics: ( <a href="#">PHS1001</a> and <a href="#">PHS1002</a> ) or ( <a href="#">PHS1011</a> and <a href="#">PHS1022</a> ) Mathematics: <a href="#">MTH1030</a> plus one other mathematics unit	<b>Engineering pathway units (24 points):</b> <a href="#">MEC2403</a> Mechanics of materials <a href="#">MEC3453</a> Dynamics 2 <a href="#">MEC3457</a> Systems and control <a href="#">TRC4802</a> Thermo-fluids and power systems
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### Master of Professional Engineering Specialisation – Mechanical engineering

Block credits for completed Monash Science Pathway engineering units					
<b>YEAR 1</b> Semester 1 February	<a href="#">MEC3456</a> Engineering computational analysis	<a href="#">MEC2402</a> Design methods	<a href="#">MEC3455</a> Solid mechanics	<a href="#">ENG5001</a> Advanced engineering data analysis	<a href="#">ENG0003</a> Continuous Professional Development
<b>YEAR 2</b> Semester 2 July	<a href="#">MEC3416</a> Machine design	<a href="#">MEC5888</a> Renewable energy systems	<a href="#">MEC5881</a> Engineering systems performance analysis	<a href="#">MEC5156</a> Advanced robotics in manufacturing	
<b>YEAR 2</b> Semester 1 February	<a href="#">MEC5883</a> Mechanical systems design	<a href="#">ENG5100</a> Professional engineer in organisation and society	Mechanical engineering enhancement unit	Mechanical engineering enhancement unit	
<b>YEAR 3</b> Semester 2 July	<a href="#">ENG5105</a> Integrated design	<a href="#">MEC5884</a> Sustainable engineering systems	<a href="#">ENG5005</a> Research methods	Mechanical engineering enhancement unit	
<b>YEAR 3</b> Semester 1 February	<a href="#">MEC5882</a> Instrumentation, sensing and monitoring	<a href="#">MEC5885</a> Energy efficiency and sustainability engineering	<a href="#">ENG5006</a> Research practice	Mechanical engineering enhancement unit	

<input type="checkbox"/> Part A. Engineering foundation knowledge and application	<input type="checkbox"/> Part B. Engineering specialist knowledge and application	<input type="checkbox"/> Enhancement learning
<input type="checkbox"/> Part D. Research and knowledge skills	<input type="checkbox"/> Part E. Professional practice	

<b>Mechanical engineering enhancement units</b> <a href="#">ENG5002</a> Engineering entrepreneurship <a href="#">ENG5008</a> Work integrated learning <a href="#">MEC5891</a> Design for additive manufacturing <a href="#">MEC5897</a> Lean manufacturing	<a href="#">MTE5883</a> Environmental durability and protection of metals and engineering materials <a href="#">MTE5885</a> Biomaterials and biomechanics <a href="#">MTE5886</a> Additive manufacturing of metallic materials <a href="#">MTE5887</a> Additive manufacturing of polymeric and functional materials
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### Continuous Professional Development (CPD)

CPD is a compulsory requirement for all Master of Professional Engineering students. It's a collection of all work, volunteering and personal and professional development opportunities. You must complete a total of **420 hours** of CPD activities and submit a series of reflections on their experience with particular reference to the development of each of the key Engineers Australia Stage 1 competencies. Further information is available on the [CPD website](#).



## Monash Science Pathway to Master of Professional Engineering MPE commencement: JULY INTAKE

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<b>Science units:</b> Physics: ( <a href="#">PHS1001</a> and <a href="#">PHS1002</a> ) or ( <a href="#">PHS1011</a> and <a href="#">PHS1022</a> ) Mathematics: <a href="#">MTH1030</a> plus one other mathematics unit	<b>Engineering pathway units (24 points):</b> <a href="#">MEC2402</a> Design methods <a href="#">MEC2403</a> Mechanics of materials <a href="#">MEC3455</a> Solid mechanics <a href="#">TRC4802</a> Thermo-fluids and power systems
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### Master of Professional Engineering Specialisation – Mechanical engineering

Block credits for completed Monash Science Pathway engineering units					
<b>YEAR 1</b> Semester 2 July	<a href="#">MEC3457</a> Systems and control	<a href="#">MEC3416</a> Machine design	<a href="#">MEC3453</a> Dynamics 2	<a href="#">MEC5888</a> Renewable energy systems	<a href="#">ENG0003</a> Continuous Professional Development
<b>YEAR 2</b> Semester 1 February	<a href="#">MEC3456</a> Engineering computational analysis	<a href="#">MEC5883</a> Mechanical systems design	<a href="#">ENG5001</a> Advanced engineering data analysis	<a href="#">ENG5100</a> Professional engineer in organisation and society	
<b>YEAR 2</b> Semester 2 July	<a href="#">MEC5156</a> Advanced robotics in manufacturing	<a href="#">MEC5881</a> Engineering systems performance analysis	Mechanical engineering enhancement unit	Mechanical engineering enhancement unit	
<b>YEAR 3</b> Semester 1 February	<a href="#">MEC5882</a> Instrumentation, sensing and monitoring	<a href="#">MEC5885</a> Energy efficiency and sustainability engineering	<a href="#">ENG5005</a> Research methods	Mechanical engineering enhancement unit	
<b>YEAR 3</b> Semester 2 July	<a href="#">ENG5105</a> Integrated design	<a href="#">MEC5884</a> Sustainable engineering systems	<a href="#">ENG5006</a> Research practice	Mechanical engineering enhancement unit	

- Part A. Engineering foundation knowledge and application   
  Part B. Engineering specialist knowledge and application   
  Enhancement learning  
 Part D. Research and knowledge skills   
  Part E. Professional practice

<b>Mechanical engineering enhancement units</b>	
<a href="#">ENG5002</a> Engineering entrepreneurship	<a href="#">MTE5883</a> Environmental durability and protection of metals and engineering materials
<a href="#">ENG5008</a> Work integrated learning	<a href="#">MTE5885</a> Biomaterials and biomechanics
<a href="#">MEC5891</a> Design for additive manufacturing	<a href="#">MTE5886</a> Additive manufacturing of metallic materials
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