

Experience Engineering Academy Course Outline

Class	Class Content and Lesson Objectives
<p>1</p>	<p>Introduction to the course <i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Get to know each other and understand what to expect from the course curriculum ● Set norms and values for the course ● Understand their overall task for the course <p>Discover Aerodynamics <i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Identify the origins of lift and drag ● Discuss how lift and drag impact on aerodynamic design
<p>2</p>	<p>Explore Electronics <i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Identify principles of electricity and electromagnetism ● Apply these principles in identifying how certain machines work
<p>3</p>	<p>Pneumatic Systems <i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Identify principles of pneumatic systems. ● Identify and solve issues in the design of particular pneumatic systems ● Build a pneumatic system
<p>4</p>	<p>Thermodynamic Cycles <i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Outline thermodynamic cycles. ● Explain how thermodynamic cycles are applied in engines
<p>5</p>	<p>The Maths Behind Engineering <i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Discuss mathematical processes that are fundamental in engineering ● Apply these processes in a Maths competition
<p>6</p>	<p>Build an Engine <i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Apply knowledge and understanding of engineering through the design and building of an engine ● Reflect on the engines created and how these could be improved
<p>7</p>	<p>Pin-jointed Structures <i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Identify principles in the design of pin-jointed structures ● Apply understanding of pin-jointed structures by designing and building one

<p>8</p>	<p>Hydraulic Systems <i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Outline how hydraulic systems work ● Identify and solve issues in the design of particular hydraulic systems ● Design and build a hydraulic system
<p>X</p>	<p>Class X:</p> <p>The final class is based on the tutor's personal expertise in the field, focusing on cutting-edge research that they're passionate about.</p>
	<p>Challenge</p> <p>Students will get the chance to put their skills to the test during our Bridge Building Challenge.</p> <p><i>Students will be able to:</i></p> <ul style="list-style-type: none"> ● Apply what they've learned in their classes and use their resourcefulness, engineering knowledge and creativity to design and build the best possible bridge they can. ● Put teamwork skills to the test ● Demonstrate their understanding of engineering principles as they apply their theoretical understanding of engineering to a practical task

Please note, this course outline may be subject to change