



## ENGINEERING SCIENCE PROGRAMME – SPN + SPN

FOR COHORT AY2021/2022 ONWARDS	MC
<b>Common Curriculum</b>	<b>60</b>
Singapore Studies	4
Cultures and Connections	4
Communities and Engagement	4
ES2531 Critical Thinking and Writing	4
CS1010E Programming Methodology	4
GEA1000 Quantitative Reasoning with Data	4
DTK1234 Design Thinking	4
EG1311 Design and Make	4
IE2141 Systems Thinking and Dynamics	4
EE2211 Introduction to Machine Learning	4
EG2501 Liveable Cities	4
Creating Narratives	4
PF1101 Fundamentals of Project Management	4
ESP4901 Research Project	8
<b>Major Requirements</b>	<b>60</b>
MA1511 Engineering Calculus	2
MA1512 Differential Equations for Engineering	2
MA1508E Linear Algebra for Engineering	4
EG2401A Engineering Professionalism	2
EG3611A Industrial Attachment	10
ESP1111 Engineering Principles in Action	4
ESP2111 Sensor System Electronics	4
Choose ONE from the following list: [Please identify 1]	4
<ul style="list-style-type: none"> <li>• PC2020 Electromagnetics for Electrical Engineers</li> <li>• ME2121 Engineering Thermodynamics &amp; Heat Transfer</li> <li>• EE2023 Signals and Systems</li> </ul>	
PC2130B Applied Quantum Physics	4
PC2133 Applied Solid State Physics	4
ESP2106 Principles of Continua	4
ESP2107 Numerical Methods and Statistics	4
ESP2110 Design Project	4
ESP3903 Major Design Project 2	4
CM3296 Molecular Modelling: Theory and Practice	4
<b>Specialisation in Energy Science &amp; Technology</b>	<b>20</b>
ESP5402 Transport Phenomena in Energy Systems	4
ESP5403 Nanomaterials for Energy Systems	4
ESP4401 Optimization of Energy System	4
PC3242 Nanofabrication and Nanocharacterization	4
ME3122 Heat Transfer	4
<b>Specialisation in Computational Engineering Science</b>	<b>20</b>
ESP3201 Machine Learning in Robotics and Engineering	4
ESP5402 Transport Phenomena in Energy Systems (Double-counted)	4*
CM3296 Molecular Modelling : Theory and Practice (Double-counted)	4*
EE3331C Feedback Control Systems	4
MA3236 Non-Linear Programming	4
<b>Other Unrestricted Electives</b>	<b>8</b>
CS2040 Data Structures and Algorithms	4
ST2334 Probability and Statistics	4
<b>TOTAL</b>	<b>160</b>