

## TEACHER WORK ATTACHMENT PLUS (TWA+) 2026 AT THE

National University of Singapore,

College of Design and Engineering

### Background of attachment

TWA+ at the College of Design and Engineering (CDE) intends to provide teachers greater understanding of CDE and its programmes so that they may communicate better to their students on the different architecture, design and engineering programmes in the tertiary education landscape. CDE will be offering **17 attachment opportunities** from our 15 undergraduate programmes and 2 second majors. Teachers can indicate the programmes of interest based on the programme description listed in Table 1. The duration of the attachment is 2 weeks and during this period, teachers may be attached to more than one programme of interest depending on the hosts' availability for greater exposure to the different programmes offered at CDE.

During the 2 weeks, teachers will be able to participate in a wide range of activities including hands-on laboratory learning, site visits, working with ongoing research teams, and observing lectures conducted by CDE professors.

### Programmes Offered (Undergraduate Programmes)

#### Creating Sustainable Innovations

1. Civil Engineering
2. Environmental & Sustainability Engineering
3. Infrastructure & Project Management

#### The Future of Design & Architecture

1. Architecture
2. Landscape Architecture
3. Industrial Design

#### Reimagining Technology

1. Computer Engineering
2. Electrical Engineering
3. Engineering Science Programme
4. Industrial & Systems Engineering
5. Mechanical Engineering
6. Robotics & Machine Intelligence *\*new\**

#### Impacting Lives

1. Biomedical Engineering
2. Chemical Engineering
3. Materials Science & Engineering

### Programmes Offered (CDE Second Majors)

1. Innovation & Design Programme
2. Sustainable Urban Development

### Attachment Information

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| <b>INDUSTRY/ SECTOR</b>      | Education / Institute of Higher Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>NATURE OF ATTACHMENT</b>  | The duration of the attachment is 2 weeks and during this period, teachers may be attached to more than one programme of interest depending on the hosts' availability. Teachers can indicate their 2-week period of availability within the windows below, and daily attachment timing is negotiable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>LEARNING OBJECTIVES</b>   | <p>Through this attachment, teachers will:</p> <ol style="list-style-type: none"> <li>1. Develop a deeper understanding of CDE programmes, teaching pedagogies and gain insights about ongoing research activities</li> <li>2. Engage and network with CDE professors, students, research teams and other STEM teachers</li> <li>3. Experience the enriching learning environment at CDE through experiential learning, hands-on application and site visits to teaching facilities</li> </ol>                                                                                                                                                                                                                                                                                                                     |
| <b>CONTENT OF ATTACHMENT</b> | <p>The attachment may include 1 or more of the following opportunities*:</p> <ol style="list-style-type: none"> <li>1. Familiarisation with CDE programmes' overview, objectives, and outcomes.</li> <li>2. Familiarisation with CDE's overview and curriculum.</li> <li>3. Understanding programme academic hosts' teaching pedagogies, key area of teaching or research (i.e. attending lectures, conducting lab experiments etc.).</li> <li>4. Participating in discussions with academic hosts, research or student project teams related to the key area of teaching or research.</li> <li>5. Contributing in the ideation for curriculum planning using concepts learned.</li> </ol> <p><i>*Opportunities during the attachment will be customised based on the host's availability and focus areas.</i></p> |
| <b>ATTACHMENT PERIOD</b>     | <p><b>Any 2 weeks between (excluding Public Holidays &amp; Weekends):</b></p> <ul style="list-style-type: none"> <li>• 12 Jan to 17 Mar 2026 (excluding Reading Week: 21 Feb to 1 Mar)</li> <li>• 23 Mar to 17 Apr 2026 (excluding 2 Apr)</li> <li>• 11 Aug to 8 Sep 2026</li> <li>• 14 Sep to 13 Nov 2026 (excluding Reading Week: 19 to 27 Sep, &amp; 9 Oct)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>PRE-REQUISITES</b>        | TWA+ is open to secondary and pre-tertiary MOE teachers and ECG Counsellors with <b>STEAM</b> background to learn more about architecture, design and engineering.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| APPLICATION PROCESS | <div><div><div>1. Please register via MOE Intranet <b>at least 2 months</b> prior to your proposed start date of attachment.</div><div>Example, if you would like to start your attachment on 19 October, please register by 19 August.</div></div><div><div>2. Please view <b>Table 1</b> below for the description of the programmes.</div></div><div><div>3. In your application to MOE, shortlist your <b>top 5 programmes</b> of interest.</div><div>Example:</div><div><div>1<sup>st</sup> Choice: Biomedical Engineering</div><div>2<sup>nd</sup> Choice: Electrical Engineering</div><div>3<sup>rd</sup> Choice: Architecture</div><div>4<sup>th</sup> Choice: Industrial &amp; Systems Engineering</div><div>5<sup>th</sup> Choice: Sustainable Urban Development</div></div><div><div>4. Indicate your <b>proposed start and end dates (2 weeks duration)</b>.</div><div>Example:</div><div><div>Start date: 19 October 2026, Monday</div><div>End date: 30 October 2026, Friday</div></div><div>5. CDE will update on the programme availability via email</div></div></div></div> |                                   |                                   |       |       |               |      |     |         |        |       |       |       |       |       |                 |    |    |    |    |                    |                                   |  |  |  |         |       |       |       |       |        |    |    |    |    |               |                                   |  |  |  |               |
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| SAMPLE ATTACHMENT   | <table><tr><th>Month</th><th>NUS Week</th><th>MON</th><th>TUE</th><th>WED</th><th>THUR</th><th>FRI</th></tr><tr><td rowspan="6">Oct '26</td><td rowspan="3">Week 9</td><td>DAY 1</td><td>DAY 2</td><td>DAY 3</td><td>DAY 4</td><td>DAY 5</td></tr><tr><td>19 <i>Start</i></td><td>20</td><td>21</td><td>22</td><td>23</td></tr><tr><td>Orientation + Tour</td><td colspan="4">Biomedical Engineering Attachment</td></tr><tr><td rowspan="3">Week 10</td><td>DAY 6</td><td>DAY 7</td><td>DAY 8</td><td>DAY 9</td><td>DAY 10</td></tr><tr><td>26</td><td>27</td><td>28</td><td>29</td><td>30 <i>End</i></td></tr><tr><td colspan="4">Electrical Engineering Attachment</td><td>Debrief Lunch</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                 | Month                             | NUS Week                          | MON   | TUE   | WED           | THUR | FRI | Oct '26 | Week 9 | DAY 1 | DAY 2 | DAY 3 | DAY 4 | DAY 5 | 19 <i>Start</i> | 20 | 21 | 22 | 23 | Orientation + Tour | Biomedical Engineering Attachment |  |  |  | Week 10 | DAY 6 | DAY 7 | DAY 8 | DAY 9 | DAY 10 | 26 | 27 | 28 | 29 | 30 <i>End</i> | Electrical Engineering Attachment |  |  |  | Debrief Lunch |
| Month               | NUS Week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | MON                               | TUE                               | WED   | THUR  | FRI           |      |     |         |        |       |       |       |       |       |                 |    |    |    |    |                    |                                   |  |  |  |         |       |       |       |       |        |    |    |    |    |               |                                   |  |  |  |               |
| Oct '26             | Week 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DAY 1                             | DAY 2                             | DAY 3 | DAY 4 | DAY 5         |      |     |         |        |       |       |       |       |       |                 |    |    |    |    |                    |                                   |  |  |  |         |       |       |       |       |        |    |    |    |    |               |                                   |  |  |  |               |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 19 <i>Start</i>                   | 20                                | 21    | 22    | 23            |      |     |         |        |       |       |       |       |       |                 |    |    |    |    |                    |                                   |  |  |  |         |       |       |       |       |        |    |    |    |    |               |                                   |  |  |  |               |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Orientation + Tour                | Biomedical Engineering Attachment |       |       |               |      |     |         |        |       |       |       |       |       |                 |    |    |    |    |                    |                                   |  |  |  |         |       |       |       |       |        |    |    |    |    |               |                                   |  |  |  |               |
|                     | Week 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DAY 6                             | DAY 7                             | DAY 8 | DAY 9 | DAY 10        |      |     |         |        |       |       |       |       |       |                 |    |    |    |    |                    |                                   |  |  |  |         |       |       |       |       |        |    |    |    |    |               |                                   |  |  |  |               |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 26                                | 27                                | 28    | 29    | 30 <i>End</i> |      |     |         |        |       |       |       |       |       |                 |    |    |    |    |                    |                                   |  |  |  |         |       |       |       |       |        |    |    |    |    |               |                                   |  |  |  |               |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Electrical Engineering Attachment |                                   |       |       | Debrief Lunch |      |     |         |        |       |       |       |       |       |                 |    |    |    |    |                    |                                   |  |  |  |         |       |       |       |       |        |    |    |    |    |               |                                   |  |  |  |               |
| ENQUIRIES           | <div>CDE's website: <a href="https://cde.nus.edu.sg/">https://cde.nus.edu.sg/</a></div> <div>Email: Ms Izzah (<a href="mailto:izzah.s@nus.edu.sg">izzah.s@nus.edu.sg</a>)</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                   |                                   |       |       |               |      |     |         |        |       |       |       |       |       |                 |    |    |    |    |                    |                                   |  |  |  |         |       |       |       |       |        |    |    |    |    |               |                                   |  |  |  |               |

Table 1: Programme Description

| Creating Sustainable Innovations                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Bachelor of Engineering                                        | Programme Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <a href="#">Civil Engineering</a>                              | <b>Civil Engineers</b> plan, design and create the world around us. With a civil engineering degree, students will be able to play a vital role in transforming the built environment. Our graduates can make a difference to people and world by creating smart, sustainable and resilient urban systems. They will be empowered with the skills from the programme to tackle complex issues that range from mitigating climate change to planning, financing and managing mega infrastructures.                                                                     |
| <a href="#">Environmental &amp; Sustainability Engineering</a> | <b>Environmental &amp; Sustainability Engineering</b> draws from the science of biology, chemistry, ecology and hydrology to devise sustainable solutions to improve our quality of life, while maintaining a clean and healthy environment. Our domains include air pollution and water quality monitoring and control, circular economy and resource management, climate change mitigation, water reclamation and reuse, public health, safety and environment, renewable energy, and sustainability development.                                                   |
| <a href="#">Infrastructure &amp; Project Management</a>        | <b>Infrastructure and Project Management</b> traverses the domains of engineering, design, management, technology, building science, and law. We nurture built environment professionals with deep knowledge and skills in planned specialisations such as Cost and Contract Management, Facilities Management, and Sustainable and Digital Technologies. We also develop the ability of future professionals to make cogent connections across broad but related disciplines.                                                                                        |
| The Future of Design & Architecture                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Bachelor of Arts                                               | Programme Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <a href="#">Architecture</a>                                   | <b>Architecture</b> champions design excellence through studio research, exploration, and making. The fundamental skills of drawing, model-making and visual representation are complemented by an inspiring and interdisciplinary curriculum comprising architectural history, theory, tectonics, as well as environmental systems and building technologies. An extensive range of issues-driven studio topics promotes the development of thinking and design skills necessary for students to take on complex issues of the built environment in Asia and beyond. |
| <a href="#">Landscape Architecture</a>                         | <b>Landscape Architecture</b> prepares students to respond to multifaceted issues in Asia. Our core emphasis is design                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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|                                                      | <p>excellence that is grounded in critical thinking, analytical inquiry, and creative expression. We imbue our students with a deep understanding of the dual nature of design as both a process and a product. This programme provides the core foundation, training, as well as skills and knowledge for our students to become the next generation of effective and innovative landscape architects.</p>                                                      |
| <a href="#"><u>Industrial Design</u></a>             | <p><b>Industrial Design</b> specialises in innovating for humanity. Its purpose is to create new products, services, spaces, apps, user experiences, and businesses that people love. Industrial designers create with deep understanding of how human beings perceive, adopt, and use innovative solutions - and how tangible and immaterial resources can be put together to make these solutions happen.</p>                                                  |
| <b>Reimagining Technology</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Bachelor of Engineering</b>                       | <b>Programme Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <a href="#"><u>Computer Engineering</u></a>          | <p><b>Computer Engineers</b> link sophisticated hardware to software, bringing intelligence to devices from the ubiquitous mobile phones to autonomous vehicles on land, air, sea, even in space. Computer engineers focus on solving real-world problems by designing hardware and software interfaces to connect the physical and virtual, creating solutions that are bigger than the sum of their parts.</p>                                                 |
| <a href="#"><u>Electrical Engineering</u></a>        | <p><b>Electrical Engineering</b> centres on the design and fabrication of components, devices and systems that use electricity. This includes the smallest microchips in smart devices to power grids that span the nation. Our graduates will master the physics and mathematics of electricity, electronics and electromagnetism, and apply them to create systems that transmit and process information, generate and deliver energy and enable mobility.</p> |
| <a href="#"><u>Engineering Science Programme</u></a> | <p><b>Engineering Science</b> is the integrated application of engineering and science to solve complex, multidisciplinary problems by working at the interfaces of traditional disciplines. Our graduates will be able to use their board-based interdisciplinary training and mindset to create innovative technologies that tackle today's increasingly complex issues.</p>                                                                                   |

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| <a href="#"><u>Industrial and Systems Engineering</u></a>                  | <b>Industrial and Systems Engineering</b> strives to improve systems and processes so they run profitably, efficiently and safely. Our graduates will use extensive mathematical tools for modelling and computational methods for analysis, evaluation and optimisation. They will also use data science and artificial intelligence to understand complex systems.                                                                                                                                                             |
| <a href="#"><u>Mechanical Engineering</u></a>                              | <b>Mechanical Engineering</b> is one of the broadest and most versatile of the engineering disciplines, involving the design, manufacture or operation of any product or system that moves and uses or produces energy. It is at the centre of almost all technical advancements, from healthcare to transportation, mobile phones to biomedical devices, aircraft to powerplants. Our graduates will have the knowhow to solve real-world problems in areas such as renewable energy, future transportation and healthcare.     |
| <a href="#"><u>Robotics &amp; Machine Intelligence</u></a><br><i>*new*</i> | <b>Robotics &amp; Machine Intelligence</b> acknowledges the transformative trends influencing the future of engineering, including Advanced Manufacturing, Automation, Robotics, Artificial Intelligence (AI), Computational Modelling, Machine Learning (ML), Digital Twins, Internet of Things (IoT), Smart Materials, Sustainability, Energy Efficiency, and Renewable Energy - both locally in Singapore and globally.                                                                                                       |
| <b>Impacting Lives</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Bachelor of Engineering</b>                                             | <b>Programme Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <a href="#"><u>Biomedical Engineering</u></a>                              | <b>Biomedical Engineering</b> helps people live safer and healthier lives through the design and development of medical devices, techniques, instrumentation and software used in healthcare, ranging from regenerative medicine and synthetic biology to medical robotics and digital therapeutics. Our graduates combine knowledge and skills from design, biology, physiology, imaging, electronics, machine learning, and robotics to analyse and solve complex problems in medicine and healthcare.                         |
| <a href="#"><u>Chemical Engineering</u></a>                                | <b>Chemical Engineering</b> is engaged with large-scale chemical conversion of raw materials into useful products in a safe sustainable, energy-efficient and economical way. Our graduates are equipped with the knowhow to manufacture chemicals, fuels, plastics, electronics, pharmaceuticals, food and beverages, even consumer goods. Our graduates can also invent new technologies for cleaning up the environment, and pioneer developments in recycling, clean energy, water purification, medicine and biotechnology. |

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| <a href="#"><u>Materials Science &amp; Engineering</u></a> | <b>Materials Science and Engineering</b> improves what things are made of and how they are made. It goes beyond selecting the best material for an application. Focus is placed on developing custom materials from specific properties tailored for specific uses. Our graduates will gain cutting-edge knowledge and skills to create new materials that can yield new applications and revolutionary technologies.                                                                                                                                                                                                         |
| <b>CDE Second Majors</b>                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Programme Name</b>                                      | <b>Programme Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <a href="#"><u>Innovation &amp; Design Programme</u></a>   | The <b>Innovation and Design Programme</b> (iDP) trains engineering and non-engineering students with an entrepreneurial mindset, applying their knowledge and skills to solving problems or designing new products, services, and experiences. Our iDP students will learn tools and processes for ideation and design from working together on hands-on projects with real-world impact, incorporating healthcare, urban mobility, sustainable cities, smart living, intelligent systems, and immersive reality. Structured as a Second Major or Minor in Innovation & Design, the iDP can be taken with any primary major. |
| <a href="#"><u>Sustainable Urban Development</u></a>       | <b>Sustainable Urban Development</b> (SUD) aims to provide students with broad exposure to the field of urban sustainability from an interdisciplinary viewpoint. SUD equips students with cross-disciplinary knowledge and unique skillsets to be able to tackle the most pressing issues of urban development such as climate change, mitigate its human impacts, and make cities more liveable, sustainable and climate-resilient.                                                                                                                                                                                         |