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| **Route** | **Engineering and Manufacturing** |  | **T Level** | **Design and Development for Engineering and Manufacturing** |

Providing students with meaningful industry placement experiences is a vital part of building employability skills and provides

responsibilities linked to their T Level course.

This ***Typical Tasks Checklist*** will help you as an employer engagement colleague to work with employers to see how they can support students and identify the types of projects and tasks that a student can get involved with.

The employer may be able to offer some or all these opportunities to students. Completing the checklist will aid your discussions and help you to plan and reach decisions.

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| ***Link to the T Level outline content*** <https://www.instituteforapprenticeships.org/qualifications/t-levels/approved-t-level-technical-qualifications-and-final-outline-content/final-outline-content/>  |

| **Employability Skills** | **How might we do this?** | **Opportunities**Y / N / maybe |
| --- | --- | --- |
| **Communication skills**the ability to express or explain themselves clearly and effectively in different situations, such as speaking, writing, listening, and presenting.  | An employer or supervisor can help young workers understand what is expected of them in terms of communication by providing opportunities and feedback. Real business examples that demonstrate how to communicate effectively in different situations, the purpose, audience, tone, format, style of messages, and the channel of communication are helpful. This could be through writing an email, making a phone call, giving a presentation, or participating in a meeting.  |  |
| **Teamwork skills**the ability to collaborate and cooperate with others, such as sharing ideas, giving, and receiving feedback, resolving conflicts, and supporting group / organisational goals.  | Teamwork skills are essential transferable skills for young people to learn, as they work with others in a group or project and contribute to common goal. Employers can support this by helping students understand their roles and responsibilities within the team, and how they fit into the organisation's bigger picture. Employers can also encourage students to participate actively in team meetings and discussions, and to listen to and respect different perspectives and opinions. |  |
| **Problem-solving skills**the ability to identify, analyse, and solve problems using creative and critical thinking, such as defining the problem, generating alternatives, evaluating options, and implementing solutions. | An employer can help young workers to develop their problem-solving skills by encouraging them to think critically and analytically about issues in the workplace, to ask relevant questions and gather related information. An employer can also help young workers use various tools and methods to analyse and interpret data, such as charts, graphs, statistics, or logic models.  |  |
| **Self-management skills**the ability to plan, organise, and prioritise one's own work, such as setting goals, managing time, meeting deadlines, and being resilient.  | Providing clear and constructive feedback is essential for learning and improvement. It helps young workers identify their strengths and areas for development and guides them on how to improve their performance and skills. Setting clear and reinforcing realistic expectations will a help. The learning provider will be on hand to support or advise with this. |  |
| **Learning skills**the ability to acquire and apply new knowledge and skills in a non-educational setting, such as seeking feedback, reflecting on one's own performance, and adapting to changing situations and expectations.  | Offering training and mentoring opportunities can help young workers gain new knowledge and skills, as well as learn from the experience and advice of more senior or experienced colleagues or experts. A work culture that values learning and respects diversity, encourages collaboration and communication, and fosters trust and mutual support can help young workers feel more confident and comfortable in expressing their ideas, opinions, and concerns, and in seeking and offering help when needed. |  |
| **Digital skills**the ability to use and understand various digital tools and technologies used in the business context, such as computers, software, internet, social media, and online platforms. | Using digital tools and technologies can help young workers enhance their productivity and efficiency, as well as their ability to communicate and collaborate with others, and to effectively use information and resources in a workplace context often for the first time. Employers should think about how they can provide training and support on how to use relevant software and tools successfully and responsibly.  |  |

| **T Level Core Skills****DESIGN AND DEVELOPMENT FOR ENGINEERING AND MANUFACTURING** | **Opportunities**Y / N / Maybe |  | **Occupational Specialism****STRUCTURAL ENGINEERING** | **Opportunities**Y / N / Maybe |
| --- | --- | --- | --- | --- |
| Planning and Preparation, e.g., interpret and confirm project requirements; plan and scope projects (timescales, requirements, resources, cost); develop project plans. |  |  | Access, examine, review, interpret and respond effectively to structural design projects and tasks and requirements, including technical information and requirements from different sources, e.g., specifications, concepts, stakeholders. |  |
| Communication, e.g., interpret, use and produce engineering representations and drawings; interpret and use relevant technical information in a range of formats and media; communicate appropriately with technical and non-technical audiences.  |  |  | Effectively annotate structural engineering design drawings and representations e.g., geometrical tolerances, limits and fits; layouts and details. |  |
| Develop and Manufacture, e.g., design or devise a proposal to meet the brief; develop, model and revise concept/s; manufacture a suitable product; safely use a range of basic hand and power tools and equipment.  |  |  | Select and use appropriate technology to model and evaluate structural design features, issues, performance and potential. |  |
| Evaluation, e.g., carry out appropriate tests, evaluation, and analysis (at relevant stages); confirm appropriate model for final realisation, testing for suitability; evaluate how well the final product meets the brief (performance, quality, time, resources, cost, and client expectations).  |  |  | Apply knowledge of material degradation and failure processes, and prevention and mitigation methods, to investigate and evaluate proposals, projects, processes, and outcomes. |  |
|  |  |  | Produce effective 2D and 3D drawings, models and simulations, using appropriate CAD software, tools, and technology. |  |
|  |  |  | Carry out basic engineering processes in the production of models and prototypes including where necessary cutting, drilling, shaping, forming and 3D printing. |  |
|  |  |  | Complete detailed risk management analyses in response to specific requirements, projects, and activities. |  |

Space for notes / reminders re: ideas for tasks, resources, or queries

Notes: *Blank template boxes for the remaining occupational specialisms are provided for you as an employer engagement and / or curriculum professional to complete.*

| **T Level Core Skills****DESIGN AND DEVELOPMENT FOR ENGINEERING AND MANUFACTURING** | **Opportunities**Y / N / Maybe |  | **Occupational Specialism****ELECTRICAL AND ELECTRONIC ENGINEERING** | **Opportunities**Y / N / Maybe |
| --- | --- | --- | --- | --- |
| Planning and Preparation, e.g., interpret and confirm project requirements; plan and scope projects (timescales, requirements, resources, cost); develop project plans. |  |  |  |  |
| Communication, e.g., interpret, use and produce engineering representations and drawings; interpret and use relevant technical information in a range of formats and media; communicate appropriately with technical and non-technical audiences.  |  |  |  |  |
| Develop and Manufacture, e.g., design or devise a proposal to meet the brief; develop, model and revise concept/s; manufacture a suitable product; safely use a range of basic hand and power tools and equipment.  |  |  |  |  |
| Evaluation, e.g., carry out appropriate tests, evaluation, and analysis (at relevant stages); confirm appropriate model for final realisation, testing for suitability; evaluate how well the final product meets the brief (performance, quality, time, resources, cost, and client expectations).  |  |  |  |  |
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Space for notes / reminders re: ideas for tasks, resources, or queries

| **T Level Core Skills****DESIGN AND DEVELOPMENT FOR ENGINEERING AND MANUFACTURING** | **Opportunities**Y / N / Maybe |  | **Occupational Specialism****CONTROL AND INSTRUMENTATION ENGINEERING** | **Opportunities**Y / N / Maybe |
| --- | --- | --- | --- | --- |
| Planning and Preparation, e.g., interpret and confirm project requirements; plan and scope projects (timescales, requirements, resources, cost); develop project plans. |  |  |  |  |
| Communication, e.g., interpret, use and produce engineering representations and drawings; interpret and use relevant technical information in a range of formats and media; communicate appropriately with technical and non-technical audiences.  |  |  |  |  |
| Develop and Manufacture, e.g., design or devise a proposal to meet the brief; develop, model and revise concept/s; manufacture a suitable product; safely use a range of basic hand and power tools and equipment.  |  |  |  |  |
| Evaluation, e.g., carry out appropriate tests, evaluation, and analysis (at relevant stages); confirm appropriate model for final realisation, testing for suitability; evaluate how well the final product meets the brief (performance, quality, time, resources, cost, and client expectations).  |  |  |  |  |
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Space for notes / reminders re: ideas for tasks, resources, or queries

| **T Level Core Skills****DESIGN AND DEVELOPMENT FOR ENGINEERING AND MANUFACTURING** | **Opportunities**Y / N / Maybe |  | **Occupational Specialism****MECHANICAL ENGINEERING** | **Opportunities**Y / N / Maybe |
| --- | --- | --- | --- | --- |
| Planning and Preparation, e.g., interpret and confirm project requirements; plan and scope projects (timescales, requirements, resources, cost); develop project plans. |  |  |  |  |
| Communication, e.g., interpret, use and produce engineering representations and drawings; interpret and use relevant technical information in a range of formats and media; communicate appropriately with technical and non-technical audiences.  |  |  |  |  |
| Develop and Manufacture, e.g., design or devise a proposal to meet the brief; develop, model and revise concept/s; manufacture a suitable product; safely use a range of basic hand and power tools and equipment.  |  |  |  |  |
| Evaluation, e.g., carry out appropriate tests, evaluation, and analysis (at relevant stages); confirm appropriate model for final realisation, testing for suitability; evaluate how well the final product meets the brief (performance, quality, time, resources, cost, and client expectations).  |  |  |  |  |
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