

Job title	Principal Technician
Grade	6
Salary range	£33,232 to £39,105
Staff Group	Technician (Assistant Staff)
Department / Institution	Department of Engineering

Role-specific information

Role Summary

The Design and Technical Services Division within the Department of Engineering is a central service that supports the Department's worldwide reputation for first-class academic research. It is the largest department in the University, accounting for some 10% of Cambridge University and encompasses a huge diversity of engineering disciplines. To accommodate this diversity the Department is divided into a number of specialist academic divisions. The Design and Technical Service Division deliver a manufacturing service that is available to all teaching and research activities in the Department.

The design projects undertaken by the Design and Technical Services are typically highly complex multi-disciplinary systems. It facilitates prestigious and highly complex research projects within the Department by providing a comprehensive in-house consultancy service to academic / research staff.

The Electronics Workshops, which are based at the Department's central Cambridge site, provide a unique, non-commercial and one-off design to all teaching and research activities in the Department. The type of work undertaken ranges from experimentation support, design, PCB manufacture, PCB assembly, manufacture of enclosed modules and electrical cabinets. These modules and cabinets often have multiple sensor inputs for the control of supplies, loads, safety critical, optical, single and three phase motors, hydraulic, RF systems and communication busses.

Reporting to the Electronics Workshop Manager, the role-holder will work closely with the other technician(s) in the area to provide highly specialised technical electronics engineering support to academic staff and students for research and teaching activities and projects. This includes advising on design and manufacture and providing hands-on training and guidance (including health and safety) on electronics equipment and devices.

The role-holder will support the general operation of the Electronics Workshops and will be responsible for:

- maintaining and reporting problems with the operation of the equipment;
- the local safety within the laboratories; and
- laboratory waste management.

Main duties and responsibilities

1	Discuss work requests to ascertain the aims and technical requirements of the research/project. Develop, construct, test and modify highly specialist equipment and prepare and manufacture equipment requiring highly specialised skills and knowledge from verbal instruction and rough sketches to technical specifications. Determine the most appropriate materials, specification, method /sequence of manufacturing operations with regard to time and available funding.
2	Analyse and interpret results in order to make changes to experimental processes, provide advice to staff and students on experimental study design, equipment specification including materials, design and manufacture methods.
3	Provide highly specialist technical advice to students/researchers on the design of experiments, and the specification of equipment, materials and/ or components required to undertake experimental activity. Source suppliers and develop specifications for new highly specialist equipment or components as required.
4	Undertake research into new technologies and manufacture methods. Develop new or improved methods of testing, write and update Standard Operating Procedures, provide expertise and feedback to other members of the team, train apprentices and members of staff in technical skills with the aim of transferring knowledge and experience.
5	Provide a project management service to researchers and students, advise on budgets, design and construction time to assist in the provision of quotations and grant applications.
6	Set up equipment for teaching or research. Provide direct assistance to students, demonstrate experiments to undergraduates as part of an undergraduate module or course. Provide highly specialist technical advice to staff and students regarding manufacturing options that could be used to produce complex experimental apparatus, taking into account time and financial constraints.
7	Contribute towards ensuring safety regulations are followed, conduct risk assessments, instruct students/apprentices/members of staff in safe working practices and oversee activities in the workshop.
8	Monitor expenditure against budgets for teaching/research consumables. Maintain laboratory stocks including procurement and purchase of equipment.
9	Support the division with computer aided design projects, encompassing equipment layout design, schematics, printed circuit board layout and technical specifications as required.
10	Construction and maintenance of experimental equipment, including manufacturing and assembling printed circuit boards, mechanical assembly, wiring, testing and fault finding.
11	Support the development and implementation of code (e.g. C++, Python, LabView) to enable delivery of multi-disciplinary automation and mechatronic projects.

Person Profile

This section details the knowledge, skills and experience we require for the role.

Education & qualifications	<ul style="list-style-type: none"> Educated to HNC/degree level/level 6 vocational qualification, a time-served apprenticeship or an equivalent level of practical experience.
Specialist knowledge & skills	<ul style="list-style-type: none"> Computer literate with CAD skills Work to a high degree of precision and accuracy Excellent organisation skills Project management Demonstrate advanced knowledge of electronics workshop involving a critical understanding of relevant theory and/or principles (desirable) Proven ability in careful handling techniques and meticulous work Developing and reviewing engineering plans and designs for projects Ability to keep up to date with developments in electronics technology and attend appropriate training courses where necessary.
Interpersonal & communication skills	<ul style="list-style-type: none"> Excellent communication skills
Relevant experience	<ul style="list-style-type: none"> Practical experience of electronics workshop activity and equipment e.g. printed circuit board manufacturing and assembly, equipment assembly, wiring and testing and troubleshooting existing equipment. Experience in the use of Computer Aided Design software e.g. Altium, KiCad, Solidworks, Fusion.
Additional requirements	<ul style="list-style-type: none"> Specialist knowledge of relevant regulations (desirable). Ability to engage with and interact with individuals at all levels of the organisation. Ability to develop and debug code (desirable).

Terms and Conditions

Location	Department of Engineering, Trumpington Street, Cambridge CB2 1PZ
Working pattern	Full-time, Monday to Friday
Hours of work	Your normal hours of work are 37.75 hours per week, Monday to Friday. Your times of work will be notified to you by your institution.
Length of appointment	Permanent
Probation period	6 Months
Annual leave	43.5 days, including public holidays
Pension eligibility	Cambridge University Assistants' Contributory Pension Scheme (CPS) Pension scheme details are available on our web pages at: http://www.admin.cam.ac.uk/offices/pensions/schemes.html .
Retirement age	The University does not operate a retirement age for assistant staff.

Right to work in the UK

We have a legal responsibility to ensure that you have the right to work in the UK before you can start working for us. If you do not have the right to work in the UK already, any offer of employment we make to you will be conditional upon you gaining it. If you need further information, you may find the Right to Work page within the 'Applying for a job' section of the University's Job Opportunities pages helpful (please see <http://www.jobs.cam.ac.uk/right/have/>).

Health declaration

Once an offer of employment has been made the successful candidate will be required to complete a work health declaration form.

Qualifications

The person specification for this position lists qualifications that are essential and/or desirable. Please note that if you are offered the post you will be asked to provide your relevant original certificates of these qualifications.

References

Offers of appointment will be subject to the receipt of satisfactory references.

Application Process

To submit an application for this vacancy, please click on the link in the 'Apply online' section of the advert published on the University's Job Opportunities pages. This will route you to the University's Web Recruitment System, where you will need to register an account (if you have not already) and log in before completing the online application form.

The closing date for applications is Sunday 5 January 2025. If you have any questions about this vacancy or the application process, please contact the HR Office at the Department of Engineering (hr-office@eng.cam.ac.uk, +44 (0)1223 332615).

If you would like to have an informal chat about this position, please get in touch with Jan Wojtecki centre.manager@construction.cam.ac.uk

Department of Engineering

The Department of Engineering is the largest department in the University of Cambridge, representing approximately 10% of the University's activities by the majority of common metrics, and is one of Europe's largest integrated engineering departments. It achieves the highest standards in both research and teaching. Its international reputation attracts the best students, academics, sponsors and partners from around the world. The Department is accommodated on two sites; one in central Cambridge and four satellite buildings in West Cambridge.

The Department seeks to benefit society by creating world-leading engineering knowledge that fosters sustainability, prosperity and resilience. We share this knowledge and transfer it to industry through publication, teaching, collaboration, licensing and entrepreneurship. By integrating engineering disciplines in one department, we can address major challenges and develop complete solutions, serving as an international hub for engineering excellence.

The Department is committed to promoting gender equality as part of a landscape of encouraging diversity, tolerance and a culture of mutual support. The dedicated Diversity Committee oversees equality, diversity and inclusion related activities in the Department, and holds regular events to promote Engineering to under-represented groups. The Department was first granted an Athena SWAN Silver Award in 2017, which was renewed in September 2020 to recognise the Department's ongoing commitment to advancing the careers of women in STEMM. The Department of Engineering continues to make excellent progress towards achieving gender balance amongst its staff and students. More information on the Athena SWAN Charter can be found [here](#).

The Department has six Academic Divisions and two Services Divisions as follows:

Academic Divisions	Division A – Acoustics, Energy, Fluid Mechanics and Turbomachinery
	Division B – Electrical Engineering
	Division C - Mechanics, Materials and Design
	Division D – Civil, Structural and Environmental Engineering with Sustainable Development
	Division E – Manufacturing and Management
	Division F – Information Engineering
Services Divisions	Division V – HR Office (Academic & Support Staff), HR Office (Research Staff & Visitors) Graduate Studies Office, Teaching Office (including Faculty Board and Exams), Finance Office, Library, Building and Estate Services, Information and Computing Services
	Division W – Design and Technical Services

The size and two site location means it is especially important to have an effective organisational structure in place. All staff are assigned to the appropriate Academic or Support Service Division on appointment so that the line of management responsibility is clear and this role is part of Division W.

More information on the Department can be found at www.eng.cam.ac.uk.

The University

The University of Cambridge is consistently ranked one of the best universities in the world, achieving academic excellence through its Faculties, Departments and other Institutions, together with the 31 Colleges. The University is renowned for its record of discovery and innovation. It is one of the great institutions, with a regional, national and global reach, attracting the very best and brightest minds. Our staff and students shape the world around us for the better: we attract and partner with like-minded people.

Whether contributing to the development of new anti-cancer drugs, adding to the understanding of how black holes are formed, revolutionising the study of ancient settlements, convening academic expertise to offer solutions to the climate crisis, or analysing public attitudes towards democracy around the world, the University's research is remarkable in its breadth, quality and impact. The University also sits at the heart of Europe's largest technology cluster and has catalysed more than 1,500 high-tech companies. And yet what inspires our 24,000 students and 13,000 staff is not what has already been achieved, but what is possible in the future.

The University is a self-governing community, with a system for decision-making that provides a high degree of accountability and transparency to its members. Each Department and Faculty is part of one of six academic Schools, but each of them, and each individual academic, has a great deal of autonomy. The Colleges are independent and self-governing, working in a symbiotic relationship with the University.

The University has a number of Institutions that are independent of any Faculty or Department and are not part of the academic Schools. These include the Institute of Continuing Education (which provides high-quality education to adults throughout their lives), the Fitzwilliam Museum, Kettle's Yard (an historic house and gallery that holds important collections of modern art) and the University Library. In addition to their diverse contributions to University and public life, these non-School Institutions are also important centres of teaching and research.

Cambridge University Press & Assessment provides academic publishing, examinations and learning materials worldwide, supporting the dissemination of research, academic development at school and in higher education, and international student mobility. Legally, the Press & Assessment is a department of the University. It provides very important funds to invest in the academic purposes of the University.

The University has made truly remarkable contributions to the sum of human understanding, with breakthrough ideas and discoveries that have changed the way we understand ourselves, our planet, and the universe around us. Yet the global and national contexts in which it operates are fast-changing and increasingly filled with uncertainty. In a world that is becoming - politically, economically, socially, and technologically – ever more interconnected but even less equal, the University’s mission – “to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence” – has never been more relevant.

About Us

The University is one of the world's leading academic centres. It comprises 150 faculties and departments, together with a central administration and other institutions. Our institutions, museums and collections are a world-class resource for researchers, students and members of the public representing one of the country’s highest concentrations of internationally important collections.

The University has an annual income of £2 billion. Research income, won competitively from the UK Research Councils, the European Union (EU), major charities and industry, exceeds £500 million per annum and continues to grow.

The Colleges and the University remain committed to admitting the best students regardless of their background and to investing considerable resources both in widening access and financial support. The 31 Colleges are self-governing, separate legal entities which appoint their own staff. Many academic staff are invited to join a College as a Teaching Fellow, which provides a further social and intellectual dimension. The Colleges admit undergraduate students, provide student accommodation and pastoral support and deliver small group teaching for undergraduates.

The University awards degrees and its faculties and departments provide lectures and seminars for students and determine the syllabi for teaching.

Our instinct for seeking out excellence and setting up enduring and mutually beneficial collaborations has led us to establish strategic partnerships across the globe. Whether it is the successful Cambridge-Africa Programme involving universities in Ghana, Uganda and elsewhere on the African continent; or the close association with the government of India to pursue new research in crop science; or the creation, with Germany’s Max Planck Institutes, of a Cambridge-based centre for the study of ethics, human economy and social change – international partnerships are now an inextricable part of the University’s make-up.

“Through its outstanding education, research and innovation, the University of Cambridge has made – and continues to make – a lasting contribution to human knowledge and is flourishing. By working at the University of Cambridge, you will be joining a vibrant community of students, scholars and professional services staff committed to supporting and enhancing the University’s mission to contribute to society.”

*Professor Deborah Prentice,
Vice Chancellor 2023*

Working at the University

Working at Cambridge you will join a diverse, talented and innovative community, with more than 24,000 students and over 13,000 staff from all walks of life and corners of the world.

The University continually explores strategies to attract and retain the best people. It is committed to supporting its staff to achieve their best. We are a fair, diverse and inclusive society and we believe our staff are our greatest asset. There is strong commitment to developing institutional leadership and supporting and encouraging staff development at all levels.

The University offers a variety of roles including academic, research, professional, managerial and support roles. We also offer extensive benefits and excellent learning opportunities within a stimulating working environment.

The University's estate is undergoing the most significant transformation in its history. Cambridge has been able to create a science and technology campus to the west of the city centre, and is expanding further to the north west of Cambridge including investing in affordable homes for University key workers and community facilities. Even with their continued development, the University remains within walking or cycling distance across the campus. The University is a major partner on the Cambridge Biomedical Campus and continues to redevelop its historic city centre sites demonstrating a clear determination to ensure that we can offer the best facilities and opportunities for our staff and students.

Equality and Diversity

The University has built its excellence on the diversity of its staff and student community. We aim to be a leader in fostering equality and inclusion, and in promoting respect and a sense of belonging for all. We encourage applications from all sections of society. All appointments are made on the basis of merit. We have an Equal Opportunities Policy, along with a range of diversity groups, including the Women's Staff Network, Race Equality Network and LGBT+ Staff Network. More details are available here: <http://www.equality.admin.cam.ac.uk/>

The University has a bronze Race Equality Charter award, with a framework for improving the representation, progression and success of minority ethnic staff and students within higher education. Furthermore, the University's silver Athena swan award recognises and celebrates good practice in recruiting, retaining and promoting gender equality

Living in Cambridge

Cambridge is rich in cultural diversity. From beautiful University and College buildings, museums and art galleries, quaint gardens and punts on the River Cam, to a vibrant restaurant and café scene, our employees are surrounded by the wonderful features of this unique city.

You can find a wide-range of high street shops and 3 shopping centres, with independent alternatives at the historic market and nestled within the passageways in the city centre. You will find a cinema, bowling alley, a nightclub and various live performances at the Cambridge Leisure Park, with further entertainment options at the Corn Exchange, Arts Theatre and the ADC Theatre. Further information can be found on the [Visit Cambridge](#) website.

If you prefer the faster pace of life, London is a 45 minute train journey away. For those travelling from overseas, Stansted Airport is just 45 minutes away and Heathrow Airport under 2 hours away. The University is a short distance from a host of other attractions such as Ely Cathedral, Newmarket Races and various wildlife parks and stately homes. Cambridge is also within easy reach of the beautiful Broads and coastlines of Norfolk and Suffolk.

Relocation Support

The University recognises the importance of helping individuals to move and settle into a new area. We provide support and guidance to those relocating internationally or domestically to take up a post at the University of Cambridge, liaising with other University offices and selected partners to ensure comprehensive relocation support is available. This includes: accommodation, childcare, schools, banking, immigration and transport. If you would like further information, please visit <https://www.accommodation.cam.ac.uk/>.

The Shared Equity Scheme and the Reimbursement of Relocation Expenses Scheme provide financial assistance to qualifying new members of staff with the costs of relocating to Cambridge.

Accommodation Service

The University Accommodation Service helps staff, students and visiting scholars who are affiliated to the University in their search for suitable accommodation in Cambridge. The dedicated accommodation team can provide access to a wide range of University-owned furnished and unfurnished properties, and has a database of private sector accommodation available for short and long-term lets. For further information and to register with this free service please visit <https://www.accommodation.cam.ac.uk/>

What Cambridge can offer

We offer a comprehensive reward package to attract, motivate and retain high performing staff at all levels and in all areas of work.

The University offers a wide range of competitive benefits, from family leave entitlement, to shopping and travel discount schemes. Our generous annual leave package contributes to the positive wellbeing of our University employees. Sabbatical leave enables academics to focus on research and scholarship, whilst still maintaining their full salary. The University also has a [career break scheme](#) for academic and academic-related staff, with additional flexible working policies for all other staff.

Pay and benefits

The University salary structure includes automatic service-related pay progression in many of its grades and an annual cost of living increase. In addition to this, employees are rewarded for outstanding contribution through a number of regular pay progression schemes. The University offers attractive pensions schemes for employees, with an additional benefit of a salary exchange arrangement providing tax and national insurance savings.

CAMBens employee benefits

The University offers employees a wide range of competitive benefits, known as CAMBens. CAMBens offers something for everyone across a range of categories, including:

- Financial Benefits, including shopping discounts (both local and national) and a Payroll Giving scheme;
- Relocation and Accommodation Benefits, including relocation assistance and interest-free Rental Deposit Loans;
- Travel Benefits, including Cycle to Work, discounts on train season tickets and interest-free Travel to Work loans;
- Family Friendly and Lifestyle Benefits, including support with childcare and family friendly policies;
- Health and Wellbeing Benefits, including a University Staff Counselling Service, discounts at the University Sports Centre, and other local gyms, and healthcare schemes.

Family-friendly policies

The University recognises the importance of supporting its staff. We have a range of family-friendly policies to aid employees' work-life balance including a generous maternity, adoption and shared parental leave entitlement of 26 weeks' full pay, and paid emergency leave for parents and carers.

Other family-friendly support includes:

Our highly regarded workplace nurseries, a childcare salary exchange scheme and a high-quality holiday Playscheme are available to help support University employees with caring responsibilities (subject to demand and qualifying criteria). Further childcare information can be found here: <https://www.childcare.admin.cam.ac.uk/>

The Newcomers and Visiting Scholars Group (<https://www.nvs.admin.cam.ac.uk/>) is an organisation within the University that welcomes the partners and families of visiting scholars and new members of the University. Run by volunteers, the group offers opportunities to visit interesting Cambridge venues, learn about the community, take part in social events and gain local knowledge while developing a strong support network of both residents and other newcomers.

Your wellbeing

The University's Sport Centre, Counselling Services and Occupational Health are just some of the support services available to University employees to promote their physical and mental wellbeing. The University delivers The Festival of Wellbeing annually, which is a programme of stimulating talks and activities, which aim to promote wellbeing and good mental and physical health. The University also hosts the [Cambridge Festival](#), which is a great opportunity to get your first taste of public engagement, through volunteering, supporting hands-on activities or proposing a talk.

Development opportunities

We support new employees to settle in through various activities as well as supporting their professional and career development on an ongoing basis. Our Personal and Professional Development (PPD) team provide development opportunities for all University employees, including face-to-face sessions, online learning modules and webinars. All employees also have unlimited access to LinkedIn Learning to support their development. Both new and existing employees can undertake funded Apprenticeships, which lead to a range of vocational and professional qualifications. We offer reduced staff fees for University of Cambridge graduate courses and the opportunity to attend lectures and seminars held by University departments and institutions. A range of University training providers also offer specialist learning and development in their own areas e.g. teaching and learning, digital literacy, finance, health and wellbeing, safety.

Information if you have a Disability

The University welcomes applications from individuals with disabilities. We are committed to ensuring fair treatment throughout the recruitment process. We will make adjustments to enable applicants to compete to the best of their ability wherever it is reasonable to do so and, if successful, to assist them during their employment. Information for disabled applicants is available at:

<http://www.admin.cam.ac.uk/offices/hr/staff/disabled/>

We encourage you to declare any disability that you may have, and any reasonable adjustments that you may require, in the section provided for this purpose in the application form. This will enable us to accommodate your needs throughout the process as required. However, applicants and employees may declare a disability at any time.

If you prefer to discuss any special arrangements connected with a disability, please contact the HR Office, who are responsible for recruitment to this position, on 01223 332615 or by email on hr-office@eng.cam.ac.uk. Alternatively, you may contact the HR Business Manager responsible for the department you are applying to via hrenquiries@admin.cam.ac.uk