



HAMPTON SCHOOL

JOB DESCRIPTION

HEAD OF DESIGN AND ENGINEERING TO START SEPTEMBER 2019

JOB TITLE: Head of Design and Engineering - full-time position required from September 2019

REPORTING LINE: Deputy Head (Academic)

ABOUT HAMPTON SCHOOL

Hampton is one of the country's leading, most successful and best-resourced independent schools and has been helping boys to fulfil their potential and realise their aspirations for nearly 460 years. We are a lively, friendly and caring School community, where innovative teaching is underpinned by strong shared values, and complemented by outstanding pastoral care. We aspire to enable our boys not only to make sense of the world, but also to want to go out and improve it.

The School's examination results and university entrance record consistently rank among the best achieved anywhere, while our extensive range of co-curricular activities provides each boy with the opportunity to shine and the means to explore new interests. Nearly all Hampton leavers go on to undergraduate courses at Russell Group or equivalent universities. 20-30 boys are offered places at Oxford and Cambridge each year; an increasing number go on to study at US Ivy League universities, often on academic and sporting scholarships. Our alumni network is extremely strong and former pupils remain very interested in their School, in no small part due to the exceptionally warm and mutually respectful relationships enjoyed between Hampton staff and their pupils.

Situated on a green field site in a leafy suburb of South West London, we are fortunate to have over 27 acres of playing fields within our spacious grounds, and a generous investment programme ensures that pupils and staff benefit from first-class facilities across all areas of School life. These include a state-of-the-art 3G sports ground, a large Sports Hall and The Hammond Theatre, along with an excellent library and specialist facilities for Art, Music, Science, Engineering, IT and Languages and our recently opened Sixth Form Study and Careers Centre. The Millennium Boat House, shared with our neighbouring girls' school, Lady Eleanor Holles, enjoys a prime location on the nearby River Thames and provides the focal point for our renowned and highly successful Boat Club.

Visitors from the Independent Schools Inspectorate (ISI) concluded in March 2016 that Hampton's academic and all-round excellence merited the rarely awarded ISI assessment of pupils' achievements and learning being 'Exceptional'. The inspection team's findings in all other areas were similarly pleasing and the highest possible judgements were achieved across the board. A copy of the full ISI report can be found on the School website.

We hope you share our vision for an inspiring, modern and exciting education. Further information for applicants can be found at

<https://hamptonschool.org.uk/teachingathampton>

THE ROLE

This is an excellent opportunity to join a vibrant and highly successful department in an outstanding school, and to help set the vision for the future of this subject. The role would suit either a teacher aspiring to move into a middle management/leadership role or an experienced Head of Design and Technology/Engineering. The Design and Engineering Department at Hampton promotes innovation, resourcefulness and independent learning, encouraging each pupil to reach his full potential through individual design and make projects.

The successful candidate would be expected to help lead the transition from a Design and Technology Department (as at present) to a Design Engineering Department, with a focus on being a route to studying Engineering and other related technical subjects in higher education and beyond. Much groundwork has been laid by the outgoing HoD, but there are still many opportunities to set the ongoing direction of this exciting department.

As well as the practical aspects of the subject, the study of Design and Engineering hones skills such as problem solving, lateral thinking, project planning, and time management, skills that prove invaluable in all walks of life, both in academia and beyond.

Hampton's Design and Engineering pupils produce exceptional work, and in recent years, several Hamptonians have won highly prestigious Arkwright Scholarships, designed to nurture future leaders in Engineering and Technical Design.

THE DEPARTMENT

The Design and Engineering Department at Hampton School is staffed by five full time members of staff and two technicians, and is extremely well resourced and innovative, with the ability to work in a wide variety of materials to a high level, and a clear focus on the more modern manufacturing processes using CAD/CAM, as well as on programmable electronics.

The subject is taught across three multi-material workshops, and two computer suites, with a huge range of equipment and machinery, making this an extremely well-equipped facility. The CAM facilities include two laser cutters, two CNC routers, a CNC lathe, and three 3D printers, with plans to expand this provision further. On the programmable components side, the Department has in-house PCB manufacturing facilities, and a range of custom designed boards based around the popular Arduino platform.

AIMS OF THE DESIGN AND ENGINEERING DEPARTMENT

- To promote the practical, investigative and creative skills required to understand and contribute to our technological world
- To encourage problem solving, decision making and independence through practical project work and design
- To prepare pupils for higher education in fields such as Engineering, Architecture and Technical Design

CURRICULUM

Lower School

In the First and Second Years, pupils enjoy a highly innovative and varied curriculum, encompassing elements of Computer Aided Design (CAD) and Computer Aided Manufacture (CAM), electronics, programmable hardware, workshop skills, and prototype development. In First and Second Years, all boys are taught Design and Engineering for a double period a week, with mixed ability classes of 10-15 boys, in form groups. Boys are then able to select whether or not to continue the subject in Third Year, and typically around 40% of students elect to do so. In the lower school, boys are introduced to the workshop environment, to

working with a variety of materials, machines and processes, and given an introductory course in programmable electronics.

In Third Year there is usually a reasonable intake of new boys to the subject (up to 50% of the students who study Design and Engineering), so much of this material (especially the Health and Safety training) is recapped. The Third Year course focuses on developing the practical and design skills they will need for the GCSE course. It introduces an extended range of materials and processes, and delivers taught theory in a range of areas, to increase the knowledge base of pupils considering taking the subject forward. It also seeks to build the independence of thought and product development skills needed for success at GCSE and beyond.

GCSE

We follow the Eduqas syllabus in Design and Technology, allowing boys to specialise in either Mechatronics or Resistant Materials. This gives pupils with different interests and skillsets the opportunity to benefit from the Design and Engineering experience, and develop the “soft skills” mentioned above. Typically, anywhere between 30-60 boys choose to study Design and Technology at GCSE each year. Classes are usually no larger than 15 boys, and receive the support of at least one technician as needed during any practical work. We are pleased that over the last couple of years we have built and maintained a 100% A*- B performance in the IGCSE (on the outgoing qualification), with a record-breaking 94% of boys achieving A*/A in 2018.

AS and A Level

Newly reintroduced to the upper school, we follow the OCR specification in Design Engineering. This rigorous course allows boys aspiring to higher-level study in Engineering or a similar field to apply their Mathematics and Physics knowledge to solve real-world problems. It places an emphasis on the technical, whilst still developing the project-based skillset so often lacking in Engineering applicants. We hope this course will attract some of the stronger candidates within the School.

This is a new qualification, but numbers in the first year were 6 boys at AS and 1 at A Level. This is set to rise for 2019-20, and typically we would expect 5-10 boys at AS and 3-6 at A Level. With the move to linear qualifications, the current plan is to continue to offer both AS and A Level classes, dependent on interest.

Co-Curricular Activities

- **Tech Club:** Open to boys in the First to Third Year, this very popular club allows pupils to pursue their interest in Design and Engineering and hone their practical skills using our fully equipped workshops or CAD/CAM equipment. Recent projects have included solar powered lamps, pewter casting, e-textiles, and fidget cubes.
- **Drone Club** The department also runs a Drone Club, which offers boys from First to Third Years the opportunity to build and race quadcopter drones.
- **Shell Eco-Marathon** Hampton has put together a team from across the year groups to design and build a racing car for the “battery electric urban concept vehicle” category of the international Shell Eco-Marathon competition.

MAIN RESPONSIBILITIES

- To manage the Design and Engineering Department and to be involved in strategic planning at all levels in conjunction with the Deputy Head (Academic)
- To produce the annual Departmental Development Plan in conjunction with the Deputy Head (Academic)
- Take a lead role in developing all areas of the Design and Engineering curriculum (including schemes of work) and to promote Design and Engineering through co-curricular activities, such as clubs and societies

- To mentor and motivate colleagues in a positive and supportive manner, promoting teamwork and effective communications
- To develop a continual updating of knowledge and understanding of the Design and Engineering curriculum through personal reading, research, and training
- To complete all student assessment requirements, including the regular marking of homework and coursework, as required
- To assess, record and track the progress of the students according to the expectations of the Deputy Head (Academic) and the School's policies
- To use performance data for pupil target setting and progress monitoring
- To deliver teaching of a high standard and to work to promote and maintain standards of achievement across the Department
- To lead the development and enhancement of teaching practice across the Department and to assist with interviewing for positions within the Department
- To liaise with the Learning Support Department as necessary to ensure pupils are appropriately supported in the Department
- To draft the Design and Engineering Department timetable in consultation with the Deputy Head (Staffing) and the Director of Studies
- To maintain standards of discipline in line with Hampton School policies
- To attend School, Department, and other meetings such as HoD, as required
- To attend parent and pupil meetings, as required
- To be responsible for administrative tasks such as the updating of the Departmental Handbook, Health and Safety Policy, schemes of work and VLE
- To oversee and organise the departmental resources required to enable effective teaching
- To manage exam administration, including liaising with exams officer and Deputy Head (Academic)
- To conduct Tier 1 appraisals of colleagues in the Department
- To manage and lead departmental 'showcasing' e.g. open days
- To oversee the Department's involvement in the School's Outreach Programme, including SHINE
- To participate in whole school and departmental INSET and contribute to the evaluation of both Design and Engineering and other related areas of the curriculum
- To sit on the School's Health and Safety committee and Fire Safety sub-committee

Person Specification

The successful candidate is likely to be able to demonstrate the following skills, qualifications and experience:

Essential Criteria:

- A commitment to the safeguarding and wellbeing of pupils
- A good honours degree in Engineering, Design, Computer Science, or other relevant subject
- Enthusiasm for Design and for Engineering, and a desire to promote the opportunities these subjects provide for higher level study.
- An interest in the more "cutting edge" aspects of the subject, including CAD/CAM, robotics, and the Internet of Things
- Excellent communications skills - oral, written, graphical, and the use of ICT (All teaching staff will be supplied with a laptop computer)
- The ability to enthuse and inspire boys in this exciting and fast-moving subject
- A clear understanding of the Health and Safety issues and requirements when teaching in a workshop environment
- An awareness of the demands of teaching bright students and a commitment to fostering high academic achievement

- The ability to work as part of a team and a willingness to contribute to the development of departmental resources and schemes of work
- A cheerful and professional approach which inspires confidence in pupils and parents
- Calmness and efficiency, with the ability to work under pressure at times
- Commitment to continuing professional development through attendance at INSET
- Commitment to the all-round ethos of the School, including its co-curricular activities and pastoral approach
- The ability to demonstrate characteristics of outstanding teaching practice
- Keen eye for detail and administrative competence
- Willingness to contribute to the rich programme of extra-curricular Design and Engineering activities
- Assiduous, and willing to avoid the '9 to 4 approach'

Desirable Criteria:

- DATA Health and Safety Accreditation in a variety of machines and processes
- A teaching qualification and/or some previous teaching experience
- Some experience programming for hardware devices, especially the Arduino platform
- An ability to offer skills in some part of the extra-curricular programme of the School
- Enjoy rising to the challenge inherent in a school environment
- The ability to develop and maintain effective relationships with all members of the school community and outside agencies

Please note that there may be changes and additions to the above, which will be discussed before implementation, and changes may occur as the post develops in relation to the needs of the Department. This document is designed to provide applicants with a "flavour" of the position and responsibilities.

The Hampton School Trust Governors also currently offer the following non-contractual benefits to teaching staff, subject to any terms and conditions and the School's eligibility requirements: private medical insurance (PHC); death-in-service benefit insurance policy; a Medicash healthcare cash plan; the Teachers' Pension Scheme, personal accident insurance, School fee remission, cycle to work scheme, free lunch in the staff dining room, sports facilities and counselling.

Please note that the above list is not exhaustive and that non-contractual benefits are provided at the discretion of the Governors.

SAFEGUARDING

The post holder's responsibility for promoting and safeguarding the welfare of children and young persons for whom s/he is responsible, or with whom s/he comes into contact will be to adhere to and ensure compliance with the School's Safeguarding Policy and Procedures at all times. If, in the course of carrying out the duties of the post, the post holder becomes aware of any actual or potential risks to the safety or welfare of children in the School, s/he must report any concerns to the School's Safeguarding Designated Persons or to the Headmaster.

Hampton School Trust is an Equal Opportunities Employer.

Please note all appointments are subject to the Hampton School Trust Recruitment, Selection and Disclosure Policy and Procedure.