Job Description

Industry Teaching Fellow

Grade: 7

Contract type: As & When

Hours: 0.2 to 0.4 FTE (one to two days a week equivalent)

Design education of undergraduate civil engineering students in CEGE starts in year 1 and continues throughout our degree programme. It is delivered through group-based project work, based on actual or credible real world civil engineering projects. Typically project working groups vary in size from 4-8 students.

The philosophy of design teaching is to use traditional subject teaching as a spring board and apply it to civil engineering problems. However, as would be expected the application of theory to real world situations is a significant step for students and to support this step change we are looking to appoint a number of Industry Teaching fellows in Design.

Main purpose of the job
The purpose of this role is to provide direct civil engineering design support to students undertaking design based undergraduate modules in Civil Engineering. This support will be focused on sharing both personal and industry experience with our students. The majority of the commitment (80 %+) will be working with Year 4 undergraduates.

Reports to: Tristan Robinson, Undergraduate Programme Director
Dotted reporting line to Sarah Fray, IDP Module Lead

Context
UCL Department of Civil, Environmental and Geomatic Engineering (CEGE), is a multidisciplinary department with a long tradition of excellence in teaching and research.

CEGE is committed to holding and maintaining a very broad interpretation of ‘civil engineering’ which differentiates us from competitors in the UK and internationally, and to preparing our graduates for the workplace at a level which visibly exceeds that of other educational institutions. Students throughout the undergraduate programme may undertake optional modules which some may perceive to be non-traditional civil engineering in content or context. This philosophy underpins our ambition to produce civil engineering graduates who will go on to have a significant impact whether in the UK or internationally and will ‘Change the world for the better’.

Department: Civil, Environmental and Geomatic Engineering
Location: Bloomsbury campus, London

Grade: 7

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Hours: 0.2 to 0.4 FTE (one to two days a week equivalent)
undertaking the Integrated Design Project Module.

The key objective is to be a source of expertise in one of the specialisms which combine to form the backbone of our project-based learning approach.

The Industry Teaching Fellows form an important element of the Design teaching team along with academic staff.

Recognising that the Joint Board of Moderators of the four primary Civil Engineering professional bodies has described the undergraduate education of civil engineers at UCL as exemplary, the Industry Teaching Fellows are instrumental in supporting that ongoing position; delivering education that has, as a central tenet, to equip our graduates to be in the order of one year ahead of their contemporaries when they join industry.

The postholder must commit to a full academic year’s work with the department.

Duties and responsibilities:

- Preparation of design brief and teaching material
- Delivery of lectures, tutorials and/or seminars
- One to one student support
- Assist in setting and marking assignments
- Attendance at occasional departmental meetings and workshops.
- Participation in UCL training and probationary sessions
- The successful applicant will demonstrate a willingness for personal and professional development
- The post holder will actively follow UCL policies including Equal Opportunities policies
- The post holder will maintain an awareness and observation of Fire and Health & Safety Regulations
- The post holder will carry out any other duties as are within the scope, spirit and purpose of the job as requested by the line manager or Head of the Department

NOTE: This job description reflects the present requirements of the post, and as duties and responsibilities change/develop, the job description will be reviewed and be subject to amendment in consultation with the post holder.

The post holder will actively follow UCL policies including Equal Opportunities policies and be expected to give consideration within their role as to how they can actively advance equality of opportunity and good relations between people who share a relevant protected characteristic and people who do not share it.

The post holder will maintain an awareness and observation of Fire and Health & Safety Regulations.
## Person specification

### Qualifications, experience and knowledge

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<tr>
<th>Criteria</th>
<th>Essential or Desirable</th>
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<tr>
<td>Undergraduate degree in Civil Engineering or relevant disciplines.</td>
<td>Essential</td>
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<td>Demonstrable current industrial expertise in the design of one and preferably more of the core specialisms of Civil Engineering.</td>
<td>Essential</td>
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<td>Excellent knowledge of analysis and design strategies and tools in current industrial technologies.</td>
<td>Essential</td>
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<td>A minimum of 5 years professional practice experience.</td>
<td>Essential</td>
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<td>Proficiency of simple and more complex computer packages appropriate to integrated design.</td>
<td>Desirable</td>
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<td>Chartership of relevant UK institution or equivalent.</td>
<td>Desirable</td>
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<td>Experience of supervising students.</td>
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### Skills and abilities

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<td>Ability to develop and deliver teaching.</td>
<td>Essential</td>
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<td>Ability to communicate clearly both orally and in writing, with students, academic and administrative staff at all levels.</td>
<td>Essential</td>
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<td>Technical skills within the areas outlined in the job description.</td>
<td>Essential</td>
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<td>Ability to work harmoniously with colleagues and students of all cultures and backgrounds.</td>
<td>Essential</td>
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<td>Ability to use own initiative and to prioritise workload.</td>
<td>Essential</td>
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<td>Ability to work in teams.</td>
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### Personal attributes

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<td>A passion for civil engineering design and enthusiasm to share knowledge and experience with students.</td>
<td>Essential</td>
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<td>Ability to show empathy with students and their aspirations.</td>
<td>Essential</td>
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<td>Commitment to UCL’s policy for equal opportunity.</td>
<td>Essential</td>
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Apply

To apply for this position contact:

Sarah Fray
s.fray@ucl.ac.uk
Tel: 020 7679 2683

We would particularly welcome applications from Black or Minority Ethnic staff as they are under-represented in UCL at grades 7 and above
Appendix

Design Teaching/Learning Year 1:

This is delivered through three mechanisms:

- **Challenges** – these are run in conjunction with other departments in the Engineering Faculty, as part of the Integrated Engineering Programme (IEP). A current project looks at designing a hydropower station in Uganda.
- **Scenarios** – there are a number of these where a specific situation is used as the basis of project work. A typical project is working with Camden Council to develop new transport corridors.
- **Civil Engineering Design** – this module introduces students to design as practiced by professional engineers to enable them to build a solid foundation of knowledge for the future development of their design capabilities. Students are guided through the design of a series of contextually relevant real or near-real projects (e.g. a skyscraper, a retaining wall, a transportation system) from different areas of engineering (e.g. structural, geotechnical, water, environmental). They identify problem types, quantify the problem, and deploy an appropriate strategy to design a solution. Students deal with issues important to engineering designers and which support the development of their own design skills, e.g. decision making, organising a design team, having an idea, testing a concept, material selection, engineering judgement, etc.

In all these projects the Industry Teaching Fellows may be involved as providing expertise and informing the project on current practices.

Design Teaching/Learning Year 2:

This is delivered through two mechanisms:

- **Scenarios** – there are a number of these where a specific situation is used as the basis of project work. A typical project is working designing a footbridge.
- **Design and Professional Skills II** – this module includes a significant design component and includes two group design projects, currently on flooding and timber engineering. The submission is a broad design project report which is a significant part of the module. Industry partners are specifically involved in supporting this project, not restricted to providing group and individual support, but also delivering approximately 6x2 hour teaching sessions on timber engineering.

Design Teaching/Learning Year 3:

The *Civil Engineering in Practice* double module currently combines design codes with Project Management, a scenario, Constructionarium and Sustainable Infrastructure. Industry Teaching Fellows may contribute more classroom-based
teaching for Project Management or take more advisory/supporting roles in the scenario and sustainable infrastructure projects.

**Design Teaching/Learning Year 4:**

This is delivered through the *Integrated Design Project* – this is the equivalent of 4 standard modules and is undertaken across the academic year. This is a unique programme in the UK and possibly globally. The IDP is a simulation of a real design office experience working on a major global project – typically with a value in the realm of £500million plus. It is a major aspect of the MEng programme and very highly regarded by industry. It is the culmination of the educational journey and prepares our graduates to step across into the world of work very successfully. We endeavour to treat our students undertaking IDP no longer as students but as colleagues; supporting and enabling the successful transition to the workplace and the teaching team to ‘buy into’ their individual success.

The IDP directly contributes a significant component of an individual student’s final award from the College. It has a reputation for being demanding, challenging and a very high work commitment. It is essential that the teaching team, including Industry Teaching Fellows, recognise this and contribute directly and enthusiastically to a positive highly supportive environment in which each student can flourish.

Each individual undertaking IDP values highly the benefit of having extensive access to industry partners.

The Industry Teaching Fellows will be instrumental in supporting the delivery of IDP, providing expertise in design, practical knowledge, inspiration and leadership. It is anticipated that the majority of their involvement in CEGE will be directed to supporting the IDP under the direction of academic staff.

Student submissions are in the form of design reports typically with a number of A1 drawings, both group and individual submissions.

- Group submissions: A3 portfolios at key stages during the year: currently: November, Christmas break, Easter break, June
- Individual submission: Individual submission: An extended design report consisting of 25 pages A3 plus 4 sheets of A1 drawings all based on evidence of design work undertaken

There are a number of formal group presentations during the academic year undertaken to the cohort, mentors, academic staff and the teaching team.