**This Word document is a reference to help you prepare your answers for the online form. Please do not submit this document. Contact** **info@spaceskills.org** **with any questions.**

# Space Sector Skills Survey 2023

## This survey seeks to understand recruitment and skills challenges

It has been commissioned by the [UK Space Agency](https://www.gov.uk/government/organisations/uk-space-agency) as the primary source of evidence to support the UK Government’s understanding of skills gaps and workforce challenges in the space sector. It is being conducted by [Space Skills Alliance](https://spaceskills.org/) and [know.space](https://know.space/).

## This is your opportunity to influence DSIT and the UK Space Agency

Your answers to this survey will directly feed into policy-making decisions at the Department for Science, Innovation and Technology, and will be used by the UK Space Agency to inform funding of new and existing skills and training interventions to address skills gaps.

*“The* ***Space Sector Skills Survey*** *will help us to identify the skills gaps and shape policies that will support the growth of the industry. I urge all companies in the sector to respond and share their valuable insights.”*

 –Dr Paul Bate, UK Space Agency CEO

## It is open to all organisations employing space professionals

Any organisation that uses space as part of their day-to-day operations is encouraged to respond. This includes companies that build and launch satellites, use Earth observation data, and build software for the space sector.

## It’ll take you between 15 and 25 minutes

Almost all of the questions are closed questions that are quick and easy to answer. If you have some time to spare, there are opportunities to provide some more detail and to be involved in follow-up studies, which we would really appreciate.

## Your answers will be kept confidential

We understand that some of the information we ask for is commercially sensitive. All your answers will be treated confidentially, and you can answer all, some, or none of the questions.

## You can contact us at info@spaceskills.org

If you have any questions about this survey, you can get in touch with us at info@spaceskills.org.

### Information you will need to provide

This survey is going to ask about:

* Your space-related hiring in the last 12 months
* Your skills needs
* Your training provision and needs
* Your engagement with education providers
* Your retention challenges

You might find it useful to have information about these topics to hand before you start. Your answers will be saved as you go, so you can pause and come back at any time.

### Privacy

This survey mostly asks questions about your organisation, as well as a few questions about you.

We need your consent to store and process your personal information.

Your answers are not anonymous, but we will not share any data from this survey in a way that makes you or your company identifiable. We will be publishing reports based on the survey results that will contain aggregate and anonymous data.

You can [read our full privacy policy for this survey here](https://spaceskills.org/space-sector-skills-survey-privacy), which explains how we store and process your data.

**Q1: Do you consent to us processing your survey responses for research purposes?**

* Yes – I consent
* No – I do not consent

### Your details

This section is about who you are. We want to understand who is responding from each organisation, and we may get in touch if we need clarification about any of your answers.

**Q2: What is your email address?**You won’t be added to any mailing lists.

**Q3: What is your name?**

**Q4: What is your job title?**

### Your organisation

**Q5: Which organisation are you responding on behalf of?**

**Q6: Are you responding on behalf of your whole organisation?**

* Yes – for my whole organisation
* No – just a part of my organisation

**[Only if no to Q6]
Q7: Which part of your organisation are you responding on behalf of?**
The site, team, or other subunit you are representing

For the rest of the survey, when we ask about ‘your organisation’, please respond only about your part of the organisation.

**Q8: Which of the following space-related activities is your organisation engaged in?**Select all that apply. These are the same categories as are used in the annual survey of the [Size & Health of the UK Space Industry](https://www.gov.uk/government/publications/the-size-and-health-of-the-uk-space-industry-2022).

*Design and/or manufacture of space equipment and subsystems*

* Launch vehicles and subsystems
* Satellites/payloads/spacecraft and subsystems
* Scientific instruments
* Ground segment systems and equipment
* Suppliers of materials and components
* Scientific and engineering support
* Fundamental and applied research
* Space test facilities

*Launch and/or operation of satellites*

* Launch services
* Launch brokerage services
* Proprietary satellite operation
* Third-party ground segment operation
* Ground station networks
* In-orbit servicing
* Debris removal
* Space surveillance & tracking (SST)
* Space tourism
* In-space manufacturing
* Spaceports

*Applications of satellite signals and data*

* Direct-To-Home (DTH) broadcasting
* Fixed satellite communication services
* Mobile satellite communication services
* Location-based signal service providers
* Supply of user devices and equipment
* Processors of satellite data
* Applications leveraging satellite signals/data
* Other (e.g. quantum key distribution)

*Specialised support services*

* Launch and satellite insurance (inc. brokerage) services
* Legal and financial services
* Software and IT services
* Market research and consultancy services
* Business incubation and development
* Policymaking, regulation and oversight

**Q9: Which of the following space-related capabilities does your organisation enable?**
Select all that apply. These are the same categories as are used in the annual survey of the [Size & Health of the UK Space Industry](https://www.gov.uk/government/publications/the-size-and-health-of-the-uk-space-industry-2022).

* Broadcasting
* Satellite communication (excl. broadcasting)
* Positioning, navigation, timing (inc. GNSS)
* Earth observation (excl. meteorology)
* Meteorology
* Space technologies
* Space transportation (inc. launch)
* Space exploration
* Science
* Defence/military
* Generic technologies/components (e.g. AI)
* Financial, legal or other services (please specify)
* None of the above

**What we mean by 'space-related role'**In this survey we will ask a lot about ‘space-related roles’, which are any roles that support space activities. This includes everyone from satellite engineers to software developers to administrative staff.

**Q10: How many people work in your organisation in total in the UK?**
Please provide headcount rather than FTE, and include everyone, not just those working in space-related roles. An estimate is fine.

**Q11: What percentage of those people work in space-related roles?**See the definition of space-related role above. Include people working in non-technical roles such as admin and finance, where they support space activities. An estimate is fine.

**Q12: What percentage of those people working in space-related roles are in space technical specialist roles?**
By ‘space technical specialist roles’ we mean roles that require highly technical space-specific skills and knowledge (for example rocket engine design). We are excluding more generic roles that require an understanding of space but have significant skills overlaps with other sectors (such as general data processing). An estimate is fine.

**Q13: Do people in your organisation work remotely?**

* No – majority are fully in-person
* Yes – hybrid/partially remote
* Yes – majority are fully remote

**[Only if No, or Yes - hybrid/partially remote to Q13]
Q14: Please provide the location and the space-related headcount for each of your organisation’s offices.**
If no space activities take place at a particular office then there’s no need to include it.

| **Location or postcode** | **Space-related headcount** |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

### Your recent recruitment

**Q15: At any point in the last 12 months, was your organisation recruiting for space-related roles?**

* Yes – Expanding by recruiting for new roles
* Yes – Recruiting to replace staff who have left
* No – Not recruiting at all, in a hiring freeze
* No – Not recruiting at all, haven’t needed to hire

**[Only if Yes to Q15]
Q16: How many space-related vacancies were you recruiting for in total?**An estimate is fine

**[Only if Yes to Q15]
Q17: Roles you’ve recruited for**For each space-related role that you’ve advertised for in the last 12 months, please provide the following information:

1. **Job title** – This can be generic or specific, and you can use the same job title more than once if you have recruited for it at different seniority levels
2. **Functional area** – Select from:
	* Aero/mechanical design
	* Systems engineering
	* Electronics design
	* Spacecraft operations
	* Maintenance, manufacturing & materials
	* Software & data
	* Commercial operations / support staff
	* Sector support (e.g. regulation, training, economic analysis)
3. **Seniority** – Select from:
	* Senior
	* Mid-level
	* Entry-level or graduate
	* Internship
	* Apprenticeship
4. **Number** – The number of vacancies you wanted to fill for this role
5. **Recruitment difficulty** – Select from:
	* Very easy
	* Easy
	* Neither difficult nor easy
	* Difficult
	* Very difficult
6. **Time to hire** – The time in weeks that it took to hire for this role, from publishing the advert to having a candidate accept an offer. Don’t include time taken internally to do things like agree the advert wording or to onboard the successful candidate.

You can provide information about a maximum of 10 jobs. If you’ve hired more than that, please provide a representative sample of areas and seniorities. We are particularly interested in areas where you are persistently struggling to recruit.

If you are finding it difficult to complete this section because you have hired for a large number of roles, get in touch with us and we can help collect the information from you in a different way.

| **Job title** | **Functional area** | **Seniority level** | **Number** | **Recruitment difficulty** | **Time to hire (weeks)** |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**[Only if Yes to Q15]
Q18: If it was difficult to recruit for these roles, why?**
Select all that apply

* There weren't enough applicants
* Applicants lacked the required specialist skills, knowledge, or qualifications
* Applicants lacked the required behaviours, attitude, motivation or personality
* Other (please specify)
* Did not find it difficult to recruit

**[Only if Yes to Q15]
Q19: What, if any, do you think were the underlying causes of your recruitment difficulties?**Select all that apply

* Competition from other space companies
* Competition from other sectors
* The pay we can offer is uncompetitive
* It is difficult to attract people to our location
* Challenges in recruiting from abroad
* Did not find it difficult to recruit
* Other (please specify)

**Q20: Have you tried to hire from outside the UK?**

* Yes
* No

**[Only if Yes to Q20]
Q21: What percentage of your hires were from outside the UK?**An estimate is fine

**[Only if Yes to Q20]
Q22: What barriers, if any, have you faced in recruiting from outside the UK?**Select all that apply

* Visa or paperwork costs
* Relocation costs
* Immigration paperwork complexity
* Immigration paperwork time
* English language skills
* Attracting applicants to the UK
* No barriers
* Other (please specify)

**Q23: Is there anything else you would like to share about your recruitment challenges?**Extra information helps us better understand and address problems.

### Your skills needs

**Q24: Do you see skills gaps in space job applicants?**

* Yes
* No

**[Only if Yes to Q24]
Q25: For which skill areas do you see gaps?**

Select all that apply. These categories are based on the [SpaceCRAFT Competencies Framework](https://craft.spacespaceskills.org/).

*Aero/mechanical design*Design and analysis of spacecraft, their subsystems, and components from an aerothermal and mechanical perspective.

* Structural
* Thermal
* Propulsion
* Robotics (mechanical)

*Systems engineering*Designing, developing and verifying integrated spacecraft systems.

* Systems engineering

*Electronics design*
Design and analysis of electronic systems and telecommunications equipment.

* Radio frequency & telecoms engineering
* Analogue and digital systems
* Optoelectronic systems
* Robotics (electronics)

*Spacecraft operations*Launching, controlling, and maintaining spacecraft.

* Spacecraft operations
* Safety & regulation
* Launch

*Maintenance, manufacturing & materials*Production, assembly, and testing of components and subsystems for satellites, spacecraft, and ground equipment.

* Maintenance
* Assembly, integration, and testing
* Manufacturing and materials

*Software & data*Design and development of software and processing of data.

* Software engineering
* Data processing & manipulation
* Data analysis & modelling
* Data visualisation
* Artificial intelligence and machine learning
* Cyber security

*Commercial operations*Work that supports the operations of a business, such as ensuring that projects run to time, people have the support they need, progress is communicated to clients, and finances and contracts are properly managed.

* Procurement
* HR
* Legal & financial
* Strategy & leadership
* Sales & commercial

*Sector support*Work that supports the space sector as a whole.

* Funding & incubation
* Policy development
* Economics analysis
* Education and training
* Regulation

*Transferable skills*Competencies that are required for most roles in the sector, regardless of specialism.

* Project management
* Team work
* Technical leadership
* Communication
* Problem solving
* Self-management

*Other skills*

* Other (please specify)

**Q26: Do you have skills gaps in your current space workforce?**

* Yes
* No

**[Only if Yes to Q26]
Q27: For which skill areas do you see gaps?**
Select all that apply. These categories are based on the [SpaceCRAFT Competencies Framework](https://craft.spacespaceskills.org/).

*Aero/mechanical design*Design and analysis of spacecraft, their subsystems, and components from an aerothermal and mechanical perspective.

* Structural
* Thermal
* Propulsion
* Robotics (mechanical)

*Systems engineering*Designing, developing and verifying integrated spacecraft systems.

* Systems engineering

*Electronics design*
Design and analysis of electronic systems and telecommunications equipment.

* Radio frequency & telecoms engineering
* Analogue and digital systems
* Optoelectronic systems
* Robotics (electronics)

*Spacecraft operations*Launching, controlling, and maintaining spacecraft.

* Spacecraft operations
* Safety & regulation
* Launch

*Maintenance, manufacturing & materials*Production, assembly, and testing of components and subsystems for satellites, spacecraft, and ground equipment.

* Maintenance
* Assembly, integration, and testing
* Manufacturing and materials

*Software & data*Design and development of software and processing of data.

* Software engineering
* Data processing & manipulation
* Data analysis & modelling
* Data visualisation
* Artificial intelligence and machine learning
* Cyber security

*Commercial operations*Work that supports the operations of a business, such as ensuring that projects run to time, people have the support they need, progress is communicated to clients, and finances and contracts are properly managed.

* Procurement
* HR
* Legal & financial
* Strategy & leadership
* Sales & commercial

*Sector support*Work that supports the space sector as a whole.

* Funding & incubation
* Policy development
* Economics analysis
* Education and training
* Regulation

*Transferable skills*Competencies that are required for most roles in the sector, regardless of specialism.

* Project management
* Team work
* Technical leadership
* Communication
* Problem solving
* Self-management

*Other skills*

* Other (please specify)

**[Only if Yes to Q24 or Q26]**
**Q28: What, if any, do you think are the main causes of your skills gaps?**Select all that apply

* Unable to hire new staff
* New staff did not have the right skills when they were hired
* Existing staff have not received appropriate training
* Staff with the necessary skills have left
* Other (please specify)

**[Only if Yes to Q24 or Q26]
Q29: What impact have skills gaps had on your business performance and growth in the last 12 months?**

* Major impact
* Moderate impact
* Minor impact
* No impact

**[Only if Yes to Q24 or Q26]
Q30: Have skills gaps had any of the following impacts on your organisation in the last 12 months?**Select all that apply

* Loss of business to competitors
* Delay in service or product development or reduced level of innovation
* Difficulty in meeting quality standards
* Higher operating costs
* Reduced productivity
* Difficulty in introducing new working practices, processes or technology
* Increased workload for other staff
* Outsourcing or subcontracting of work which might have been done in-house
* Other (please specify)

**Q31: Do you expect your organisation’s space skills needs to be the same in 3 years’ time?**

* Yes
* No

**[Only if Yes to Q31]
Q32: What new/different skills do you think your organisation will need in 3 years’ time?**Select all that apply. These categories are based on the [SpaceCRAFT Competencies Framework](https://craft.spacespaceskills.org/).

*Aero/mechanical design*Design and analysis of spacecraft, their subsystems, and components from an aerothermal and mechanical perspective.

* Structural
* Thermal
* Propulsion
* Robotics (mechanical)

*Systems engineering*Designing, developing and verifying integrated spacecraft systems.

* Systems engineering

*Electronics design*
Design and analysis of electronic systems and telecommunications equipment.

* Radio frequency & telecoms engineering
* Analogue and digital systems
* Optoelectronic systems
* Robotics (electronics)

*Spacecraft operations*Launching, controlling, and maintaining spacecraft.

* Spacecraft operations
* Safety & regulation
* Launch

*Maintenance, manufacturing & materials*Production, assembly, and testing of components and subsystems for satellites, spacecraft, and ground equipment.

* Maintenance
* Assembly, integration, and testing
* Manufacturing and materials

*Software & data*Design and development of software and processing of data.

* Software engineering
* Data processing & manipulation
* Data analysis & modelling
* Data visualisation
* Artificial intelligence and machine learning
* Cyber security

*Commercial operations*Work that supports the operations of a business, such as ensuring that projects run to time, people have the support they need, progress is communicated to clients, and finances and contracts are properly managed.

* Procurement
* HR
* Legal & financial
* Strategy & leadership
* Sales & commercial

*Sector support*Work that supports the space sector as a whole.

* Funding & incubation
* Policy development
* Economics analysis
* Education and training
* Regulation

*Transferable skills*Competencies that are required for most roles in the sector, regardless of specialism.

* Project management
* Team work
* Technical leadership
* Communication
* Problem solving
* Self-management

*Other skills*

* Other (please specify)

**Q33: Is there anything else you would like to share about your skills needs?**Extra information helps us better understand and address problems.

### Your training needs & provision

**Q34: Did you provide training to your space workforce in the last 12 months?**

* Yes
* No

**[Only if Yes to Q34]
Q35: What type of training opportunities do you support or provide?**Select all that apply

* Formal training on the job training (e.g. structured training programme)
* Informal on the job training (e.g. shadowing more experienced staff)
* External accredited training (e.g. CPD course)
* External unaccredited training (e.g. a webinar)
* Secondments
* Sponsoring further study such as an apprenticeship or degree
* Other (please specify)

**[Only if Yes to Q34]
Q36: Who provided your training?**
Select all that apply

* Internal training by other members of staff
* External specialist training providers
* Professional associations, learned societies, or sector bodies
* Universities
* Further education colleges
* Other (please specify)

**[Only if No to Q34]
Q37: Why haven’t you provided training?**

* Staff didn’t require training
* We faced a barrier to providing training
* Other (please specify)

**[Only if Yes to Q34 or faced a barrier in Q37]
Q38: What, if anything, is a barrier to providing training?**Select all that apply

* Staff do not want training
* Training is too expensive
* Not enough time for training
* Appropriate training is not available anywhere
* Appropriate training is not available locally
* Other (please specify)
* No barriers

**Q39: Do you think there are gaps in training provision, and if so what provision would address this?**

### Your engagement with education

**Q40: What type of engagement has your organisation had with schools, colleges, and universities in the last 12 months?**

* Giving talks or doing outreach
* Providing internships/work experience
* Hiring graduates directly
* Providing scholarships or bursaries
* Supporting student projects
* Supporting/sponsoring PhDs or PhD projects
* Attending, hosting, or sponsoring careers fairs or events
* Attending, hosting, or sponsoring competitions
* Other (please specify)
* No engagement with schools, colleges, or universities

**Q41: Do you provide apprenticeships?**

* Yes
* No

**[Only if Yes to Q41]
Q42: What kind of apprenticeships do you provide?**Select all that apply. If you are unsure, check this [government guidance about apprenticeship levels](https://www.gov.uk/become-apprentice#levels-of-apprenticeship).

* Apprenticeship (Intermediate)
* Apprenticeship (Advanced)
* Apprenticeship (Higher)
* Apprenticeship (Degree-level)

**Q43: Is there anything else you would like to share about how you engage with education providers?**Extra information helps us better understand and address problems.

### Your retention challenges

**Q44: Has your organisation experienced any difficulties in retaining space-related staff in the last 12 months?**

* Yes – some difficulties
* No – no difficulties

**[Only if Yes to Q44]
Q45: What are the main causes of your difficulties in retaining space-related staff?**Select all that apply

* Lack of development opportunities
* Poor company culture
* Poor work-life balance
* Bullying, harassment, or discrimination
* Low salaries
* Staff wanting to leave the space sector
* Staff being poached by other space companies
* Contracts ending
* Retirement
* Visa or immigration-related issues
* Other (please specify)

**Q46: If you’ve had staff leave to join other sectors, which sectors have they moved to?**List as many as are relevant.

**Q47: What has been the impact of poor retention on your business in the last 12 months?**Select all that apply

* Loss of business to competitors
* Delay in service or product development or reduced level of innovation
* Difficulty in meeting quality standards
* Higher operating costs
* Reduced productivity
* Difficulty in introducing new working practices, processes or technology
* Increased workload for other staff
* Outsourcing or subcontracting of work which might have been done in-house
* Other (please specify)

**Q48: Is there anything else you would like to share about your retention challenges?**Extra information helps us better understand and address problems.

### Additional feedback

**[Only if defence listed as a capability in Q9]
Q49: Are there any specific differences that you find in recruiting, training, and retaining staff for space-related defence work compared to other kinds of work?**

**Q50: Is there anything else you’d like to share with us?**

**Q51: We will be conducting further in-depth structured interviews to delve deeper into the skills issues the sector faces. Would you be open to being interviewed in the next few weeks?**

* Yes – I’m open to being interviewed
* No – I would not like to be interviewed