



وكالة الإمارات للفضاء
UAE SPACE AGENCY



كليات التقنية العليا
HIGHER COLLEGES OF TECHNOLOGY

LIFE IN SPACE

EXPERIMENT PROPOSAL FORM

IMPORTANT NOTICE

Your proposal should be understandable to a panel of judges who are from various fields and who have scientific knowledge of the relevant competition fields.

Before you submit your proposal please ensure that you have read all available information on the challenge homepage and completed all sections of this form with full information and details.

To submit your proposal, you need to register at the ishuttle <https://ishuttle.space.gov.ae/>, and submit your proposal in the step 4 of "Submit ideas" section on the challenge homepage.

Specify the selected major area of the recommended tentative research areas	<input type="checkbox"/>	Bone cells, muscle cells and immune responses
	<input type="checkbox"/>	Haemopoietic System
	<input type="checkbox"/>	Microbiome
	<input type="checkbox"/>	Stability and kinetic behavior of medicines in space
	<input type="checkbox"/>	Gene expression
Acronym of the full experiment title		
Title of experiment		

Organizational Management & Scientific Approach

Student Team Composition	
Team Lead <i>Provide the following information: Name –nationality- college/university-field of specialization-level of study- academic year-date of birth.</i>	
Contact Details of Team Lead <i>Provide the following information: WhatsApp number - phone number - email and correspondence address.</i>	
Team Members <i>Provide the following information: Name –nationality- college/university - field of specialization-level of study- academic year-date of birth</i>	

Scientific Approach to the design and execution of the experiment	
Background Research <i>You should provide a brief overview on relevant past studies relevant to your proposed experience. It should inform your proposed work either by identifying areas for future research or by identifying limiting factors in your own research.</i>	
Why you selected this experiment? <i>Write a basic overview why it is worth to run your proposed experiment and what you will essentially do in your experiment to collect evidences to support your hypothesis. You should also research past experiments that support or attempt to disprove your working theory.</i>	
How you intend to accomplish the goal you set. <i>Provide a brief summary of justification on the methods and techniques that you are going to employ during the experimental procedures. Outline what you expect the results will be, based off what you have learned through your background research.</i>	

<p>Explain why this research should be done.</p> <p><i>Here, you should clearly show why the project is relevant. What is important about it? What does it add to the field? Make sure that you can communicate the scientific value of your experiment.</i></p>	
<p>What is the scientific and/or technical objective of your experiment?</p> <p><i>This description should outline the scientific/technical questions addressed, the assumptions made and the research methods chosen to solve the question.</i></p>	
<p>Project the possible effect of microgravity on your experimental data aboard the ISS</p> <p><i>Why your experiment would be different under microgravity environment from earthly conditions?</i></p>	
<p>What environmental characteristics your experiment require?</p> <p><i>E.g. level of micro-gravity, temperature, pressure, degree of humidity, light, vacuum, liquid, solid or gas phases, biological fluids, living organism, sterile environment etc.</i></p>	
<p>Where did you get the idea from?</p> <p><i>E.g. science fair, conferences, professors, scientists, peers, clubs, at your university/college, already performed similar experiment, scientific publications, books, magazines etc.</i></p>	

<p>Description of the experiment procedure, data collection and evaluation</p>	<p><i>This part should correlate the scientific objective(s) to the experiment itself.</i></p>
<p>What parameters do you want to measure?</p> <p><i>In this section you should provide a precise, in depth description of what kind of parameters are you going to measure to test your hypothesis and what tools or materials you'll need to do so.</i></p>	
<p>How do you want to take measurements?</p> <p><i>List the equipment, apparatus and materials that you will need for undertaking your experiment. Indicate also if any human or robot involvement is needed.</i></p>	

<p>Describe the process flow of your experiment. <i>Summarize your experimental design, specifically referring to how you will control and replicate the experiment.</i></p>	
<p>How do you evaluate the data collected during your experiment? <i>Summarize the method of storage, transmission, analysis and evaluation of the collected data as applicable</i></p>	

<p align="center">Expected support from internal/external resources</p>	
<p><i>How will you organize/distribute work within your team? Please note that you are responsible for all aspects of your experiment (science, safety, mechanical & electrical engineering, software, etc.)</i></p>	
<p>Will you get the necessary scientific and technical support from your university/college and/or scientists/professors? <i>Provide the name of the university/college(s) and scientist(s)/professors(s). It is desirable for the success of the experiment to have some theoretical/technical support at your university/college.</i></p>	
<p>Do you have access to the required laboratory facilities that would provide all the tools/instrumentation/apparatus need to design and test your experiment?</p>	
<p>How do you plan to obtain all the material /biological samples that is needed for your experiment? Who would finance your expenses?</p>	
<p>Do you have sponsors who would support you support you?</p>	
<p>Outreach Program <i>How are you planning to present your experiment to the public? E.g. newspaper, local radio, webpage, social media, presentation at the university,</i></p>	

Experimental Set-up & Technical Information

Mechanics	
<p>Describe your experimental set-up. <i>Describe and outline the preliminary set-up of your experiment. Include at least a sketch or block diagram of the experiment (CAD drawings are optional).</i></p>	
<p>What is the volume of space your experiment requires? Does your experiment fit into the 100 mm x 100 mm x 152.4 mm experiment container? <i>Take note that the inner dimensions of the container are slightly smaller</i></p>	
<p>Estimate the mass of your experiment (kg). <i>Do not include the experiment container in your mass budget.</i></p>	

Electrics/ Electronics	
<p>Will you use the 5 V DC supplied by the USB connector of the experiment container?</p>	
<p>Do you have power requirements beyond the USB connector (i.e. batteries)? What are they used for? Estimate the electrical consumption of your experiment (Ah or Wh).</p>	
<p>Do you need auxiliary power before or during launch? <i>Auxiliary power for charging or consumption before launch is not standard. Mention here whether you need auxiliary power and why.</i></p>	
<p>Use of uplink and downlink: <i>Please indicate expected data rates for uplink and downlink.</i> <i>Please note: In addition to on-board storage, it is mandatory that you downlink housekeeping/scientific data during operations</i></p>	

<p>Provide an event timeline, including the experiment actions during experiment operations such as timer or telecommand events.</p> <p><i>Describe your event timeline from start of on-orbit operations.</i></p>	
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Environmental & Health & Safety Issues	
<p>Does the experiment uses extreme temperatures? <i>e.g. below zero centigrade or above 100 centigrade</i></p>	
<p>Does the experiment uses biological fluids, samples, microorganism or small animals?</p>	
<p>Is the experiment can be contagious or infectious?</p>	
<p>Is the experiment sensitive to humidity?</p>	
<p>Is the experiment sensitive to light? <i>E.g. when you open the container.</i></p>	
<p>Does the experiment produce harmful, toxic substances?</p>	
<p>Will you use concentrated solutions?</p>	
<p>Does the experiment use wireless devices? <i>E.g. Wifi (WLAN), Bluetooth, infrared, data transmitters. Describe the type of devices and frequencies used.</i></p>	
<p>Will you use any flammable, explosive, radioactive, corrosive, magnetic or organic products? <i>Specify any products you will use with any of these characteristics.</i></p>	
<p>Does your experiment or parts of it have to be airtight?</p>	
<p>Is your experiment or parts of it pressurized? <i>If yes, please provide the expected pressure level.</i></p>	
<p>Are there any moving parts? Are the moving parts reachable?</p>	

Is there any aspect in your experiment which you believe may be viewed as a health & safety risk by others (regardless of whether you will mitigate this risk in your design)?	
Additional Information <i>Is there any information that is of importance for your proposal and not addressed above?</i>	

Attach the drawings on separate sheets as applicable and refer to them in the above table.