K12 Education

K12 Space Science & Satellites Academy

From 11 to 18 years old, you can
Study Online & Become a Junior Future Astronaut,
or a Satellite & Space Technology Junior Scientist

Make the best use of your Holidays

Become a:

- **Certified** Junior Astronaut.
- **Certified** Junior Satellite Image Analyst & Interpreter.
- **Certified** Junior Satellite Image Processing and Remote Sensing Specialist.
  [Using Hexagon Geospatial Technology]
- **Certified** Junior Satellite Systems Engineer.

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Information from Imagery
Sustaining Member

BRS-Labs
Brilliant Remote Sensing Labs

HEXAGON GEOSPATIAL
Training Partner

k12 space academy
www.k12-space-academy.com
info@k12-space-academy.com

BRS-Labs
Brilliant Remote Sensing Labs
www.remote-sensing-portal.com

K12 Space Science & Satellites Academy

Study Online & Become A Junior Future Astronaut
or A Satellite & Space Technology Junior Scientist

The Future is Yours...!!

From 11 to 18 years old, you can prepare for the start of your career in Satellites and Space Technology!

Find out What Benefits you Can Get:

We, Brilliant Remote Sensing Labs, believe that the future is yours. Our mission is to enable juniors from the age of 11 to 18 years old to explore their passion in satellites and space technology, and take their first steps on the path of a glowing career in these advanced professions. Our vision is to see you standing at the door-step of the university/institution that will pave your way in the spectacular world of Space and Satellites.

Our online training and certification program will help you learn basic concepts, acquire practical skills and apply them yourself on real sample dataset of satellite images.

We don't only provide you with knowledge. We actually help you to verify this knowledge through an integrated serious testing system with open book exams. These exams validate your understanding of the theoretical concepts and practical skills you acquired throughout the course. They also issue you 3 certificates that accredit your achievement. These certificates will be the first awards on your wall of fame in the field of Satellites and Space Technology through Space and Geospatial career websites recommended by us on our home page.

Throughout your journey with us, you will pass the following 4 main milestones to become a ...

CERTIFIED
Junior Astronaut

CERTIFIED
Junior Satellite Image Analyst and Interpreter

CERTIFIED
Junior Satellite Image Processing and Remote Sensing Specialist

CERTIFIED
Junior Satellite Systems Engineer©

Your Future Career: After finishing your study with us, you can be a part of success stories of undergraduates, postgraduates, and professionals from all over the world, by continuing your next advanced study level in Space Technology career through enrolling in EgSA Space Technology Portal (https://www.egsa-space-technology-portal.com), or in Satellite Image Processing and Geospatial Technology through the Remote Sensing Portal (https://remote-sensing-portal.com).

Who are we? Brilliant Remote Sensing Labs Company is a Global Online Education Developer and provider. We have established a world-class online Remote Sensing educational platform, "The Remote Sensing Portal" that offers Satellite Image Processing education to professionals in more than 100 countries. We've also earned the trust of the Egyptian Space Agency (EgSA) to build their Space Technology online educational platform: "EgSA Space Technology Portal". We are a "Developing Education Partner" of Hexagon's Geospatial Division and a sustaining member of the International Society of Photogrammetry and Remote Sensing. Our educational products include: Building Professional E-Learning websites for all professions, Certified Online Courses Developer certificate, and many others.

The Three Steps Of Your Future Career In Space And Satellites Industries

Step1

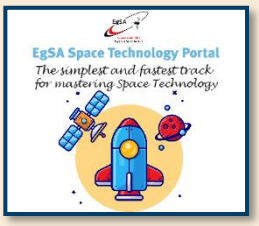
Join the courses of K12 space science and satellites Academy - K12-Space-

K12 Space Science & Satellites Academy
Study Online & Become A Junior Future Astronaut or A Satellite & Space Technology Junior Scientist

Step 2

Join the advanced studies portals shown on our homepage to increase your qualifications in the Space Career from **EgSA Space Technology Portal**, or in Geospatial Technology, Remote Sensing, and Satellite Image Processing Careers from the **Remote Sensing Portal**.

Become Certified in Advanced Satellite Image Processing & Remote Sensing
remote-sensing-portal.com



Become Certified in Advanced Space and Satellites Technologies
egsa-space-technology-portal.com

Step 3

Search for Real Job Opportunities currently announced in space career websites recommended
by us on our home page, understand their required qualifications, and then plan your future university study & career **right now**.

Search for Space Job Opportunities, then Plan Your Further Study and Career Right Now.

Search for Jobs in Remote Sensing, Satellite Image Processing and Geospatial career.

To Enroll, visit us at:

K12 Space Science & Satellites Academy
k12-space-academy.com
info@k12-space-academy.com

Course Description and Learning Outcomes of the K12 Space Science and Satellites Academy curriculum of Brilliant Remote Sensing Labs

Certified Junior Astronaut Certificate™

Can I one day get into the space career, or is it just a dream?!

Yes, you can by qualifying yourself with the needed interesting studies right now, and by preparing your CV for Space-related jobs.

Being an astronaut isn't the only job you can get in the field of space. You can find many job opportunities available in various fields of space on the Space Career Websites recommended by us (on our homepage). This certificate program aims to introduce Space Science and Satellite Technology in a simple and attractive way. It will form the base knowledge you need as a start. Then you will be able to plan for your future career and select further studies or the appropriate university program.

Our video lectures and tutorials explain the basic components of a satellite system: Ground Segment, Space Segment, and Launcher. You will explore how a satellite is launched and who can launch a satellite into space.

You will understand a group of overview topics in a gradual sequence that matches the lifetime of a satellite from its start to its end. By the end of this certification program, you will know more about satellites, why they were invented and how they move in their orbits. You will also know about satellite classifications, missions, orbit types and how they affect the satellite mission.

Finally, you will know about satellite lifetime, what the effects that control a satellite lifetime are, how it ends and what we do with dead satellites.

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Course No. 1

Certified Junior Astronaut Online Course & Tutorial

Put on your space suit and helmet and get ready to fly with satellites in space…

Explore why a communication satellite moves differently from an imaging satellite.

Tell your colleagues at the ground station what you feel when you experience the perturbations that affect a satellite's lifetime.

Finally, decide on how you will execute your space missions, and how a satellite's lifetime will end

Main topics (each topic has a separate online video tutorial):

- Is The Satellite Static or Does It Rotate in The Space?
- How Can a Satellite Fly or How Could It Rotate in Its Orbit Without Falling on The Ground?
- How Did the Idea of A satellite Originate, why?
- What Are the Different Roles of Satellites?
- What Are the Types of Satellites?
- What Is the Importance of The Accurate Design of a Satellite Orbit?
- What Are the Types of Orbits What Is-The Suitable Mission for Each of Them?
- How Can a Satellite Orbit Be-Designed?
- What Are the Components Of-Satellites System?
- What Are the Components of a Satellite?
- How Can Satellites Be Launched?
- What Are the Countries That Possess the Launching Capability?
- When Does the Lifetime of a Satellite End?
- What Are the Perturbations That Influence a Satellite's Lifetime?
- How Can a Satellite Be Disposed After Terminating Its Lifetime?
- How to become a future astronaut?

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Certified Junior Satellite Image Analyst & Interpreter Certificate™

This certificate program aims to teach you how to analyses and recognize the contents of satellite images, how you can perform visual interpretation of the objects on satellite images and how to conclude and distinguish several characteristics and features about an object from how it looks on an image. It is time to do smart analysis using your mind. You will learn to do so by applying the visual interpretation elements: shape, size, shadow, color, tone, texture, pattern, height and depth, site, situation, and association. Finally, you will become a “Certified Junior Satellite Image Analyst & Interpreter”. Also, you will be qualified to move forward confidently to the next certificate to apply practical satellite image processing steps using Remote Sensing tools.

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Course No. 2

Certified Junior Satellite Image Analyst & Interpreter Online Course & Tutorial

Put on your space suit and helmet and get ready to see how things look like from space. Learn how you analyze, recognize, and interpret satellite images…

Explore how shadows make you see what no one else can see.

Tell the difference between farms and forests – Natural and Manmade objects.

Distinguish how shallow water areas appear differently from deep water areas.

Learn how to identify places and activities based on how they are close to each other and how to differentiate between various urban area types in an image and identify the type of many of them.

Tell your colleagues at the ground station what you see, how you see it, and why you have recognized it this way.

Main topics (each topic has a separate online video tutorial):

- Introduction to Image Interpretation Elements
- Shape and Size
- Shadow
- Color and Tone
- Texture and Pattern
- Height and Depth
- Site, Situation and Association
- General Revision for Satellite Image Interpretation

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Certified Junior Satellite Image Processing & Remote Sensing Specialist Certificate™

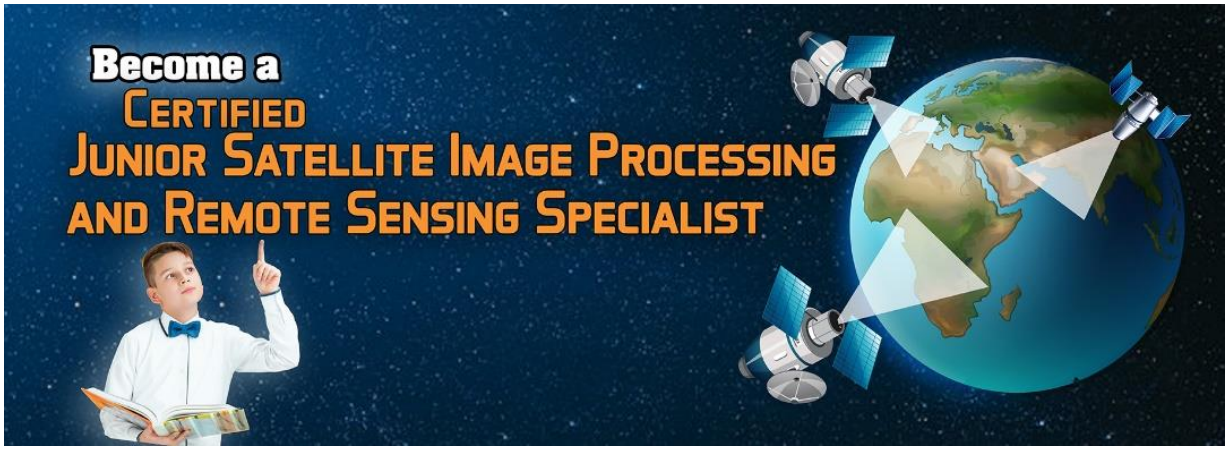
Now that you have reached this certificate program, you have seen enough. It is time to do something practical with your own hands. You will start dealing with various types of real satellite images using a professional remote sensing software (ERDAS IMAGINE®).

In this program, you will know how to perform many basic and essential image processing functions on satellite images, such as opening various satellite data types, taking measurements of features in the satellite images, linking images, controlling the scale, changing various raster options, analyzing pixel values and their signature, using different Remote Sensing tools for comparing satellite images, reading metadata, and dealing with various libraries of spectral profiles.

You will also learn how to draw and emphasize various types of features, such as roads, cities' names, rivers, railways, water areas, green areas, urban areas, and others. This is an essential skill for map production. You will also learn how to save information and description related to each drawn feature in the attribute table. This is vital for modeling and analysis.

Finally, you will learn how to gather information regarding the important features from external resources such as Google Earth and Open Street Maps by linking them with ERDAS IMAGINE®.

By the end of this program, you will have been ready to take further specialized studies to help you become a Remote Sensing Specialist who is able to offer valuable information, land studies, analysis, and recommendations that will support taking bright decisions to shape up a better future for the Earth and its sustainable development goals.



Your journey today is different…

Take off your space suit and join your colleagues at the ground station.

Step into the Image Processing Unit and take your place at your workstation.

Start processing the collected images. In part1 of the course (this part), you will learn the theoretical part, and in part 2 (the following course) you will learn and practice to apply the practical part by yourself on various satellite images, and by the end of the practical part you will be able to:

Identify features and take measurements.

Produce your initial informative data that supports decision-making and map production.

Other practical work.

The world is waiting for your educated recommendations to make informed decisions for a better life and future.

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Course No. 3

Introduction to Remote Sensing & Geospatial Technology Online Course (Level 1: Introductory)

Main topics (each topic has a separate online video tutorial):

- What are Satellite images and what are their benefits?
- What is the resolution of satellite images?
- What is the difference between satellite images and aerial images?
- What is the difference between Electro-optical images and RADAR images?
- What is the difference between the free Google earth images and the purchased satellite images?
- What is Remote Sensing?
- What is the Electromagnetic Spectrum?
- How Humans and Animals See Colors?
- What are the Similarities and differences between the Human Vision and Satellite Vision?
- What are the types of satellite images?
- What are the types of satellite data produced from satellite images?
- What is Spatial Resolution?
- What is Radiometric Resolution?
- What is Spectral Resolution?
- What is Temporal Resolution?
- How to purchase a satellite image?
- What are the steps to be followed before purchasing a satellite image?
- What are the procedures to be followed after purchasing a satellite image?
- What is meant by Satellite Image Processing Steps?
- How to determine the suitable sequence of applying Satellite Image Processing Steps?

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Course No. 4

Certified Junior Satellite Image Processing & Remote Sensing Specialist Online Course (Level 2: Practical)

Main topics (each topic has a separate online video tutorial):

- Introduction to Practical Remote Sensing
- Open and Close Layer Free
- Raster Options
- Add Views
- Contents Pane
- Shoe Box
- Link Views and View Scale
- Inquire Functions
- Zoom, Pan, and Inset view
- Measurement Tools
- Blend, Swipe and Flicker
- Metadata Examine
- Spectral Profile
- Surface Profile Free
- Spatial Profile
- Customizing My Workflow Tab
- Importing Data
- Create Annotation Layer

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Certified Junior Satellite Systems Engineer Certificate™

In this certificate, you will learn the different components of a satellite system. You will be introduced to different types of educational satellites.

You will explore the different stages of satellite subsystems assembly, integration and testing. Then you will experience in detail how these steps are applied on small satellites, such as EDUCAN CanSat educational satellite model of "Orion Space".

You will jump on a spectacular journey starting with unboxing the different components and subsystems of small satellites. Then you will enjoy the process of integrating those components. You will also explore how to set the ground station that will receive data from your satellite. Finally, you will taste the epic feeling of accomplishment when you launch your satellite in the air and start receiving measurements and data from it.

Now, put on your hair cap, face mask, and latex gloves and step into your own satellite assembly and integration laboratory!

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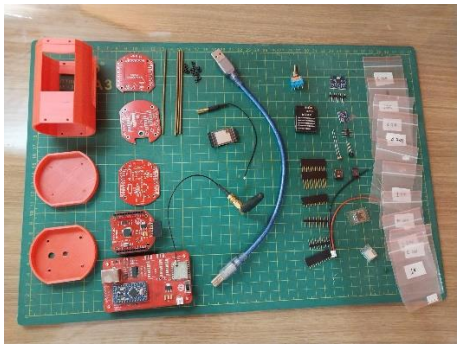
Course No. 5



Satellite Assembly, integration, and testing Course using the educational satellite (EDUCAN CanSat) from Orion Space

This time, your journey will be totally different. You will perform with your own hands the same tasks that space engineers and specialists do in the satellite design, integration, and test laboratories.

You will learn the different components of a satellite system. You will be introduced to different types of educational satellites.

You will explore the different stages of satellite subsystems assembly, integration and testing. Then you will experience in details how these steps are applied on the EDUCAN CanSat educational satellite model of "Orion Space".

You will jump on a spectacular journey starting with unboxing the different components and subsystems of EDUCAN subsystems of a satellite. Then you will enjoy the process of integrating those components. You will also explore how to set the ground station that will recieve data from your satellite. Finally, you will taste the epic feeling of accomplishment when you launch your satellite in the air and start receiving measurements and data from it.

Now, put on your hair cap, face mask and latex gloves and step into the insulated, environmentally controlled satellite assembly and integration laboratory.

Main topics (each topic has a separate online video tutorial):

- Satellite Systems Components and Tasks
- Satellite Systems Assembly, Integration and Testing
- EDUCAN Unboxing
- Educan Subsystem Assembly
- Educan Assembly And Integration
- Educan Ground Station Assembly And Set-Up
- Educan Launching And Data Reception & Analysis

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