

# K12 Education

## K12 Space Science & Satellites Academy



From 10 to 17 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]



**k12 space academy**  
[www.k12-space-academy.com](http://www.k12-space-academy.com)  
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# The Future is Yours...!!

FROM **10** TO **17** YEARS OLD, YOU CAN PREPARE FOR  
THE START OF YOUR CAREER IN  
SATELLITES AND SPACE TECHNOLOGY!

Become a  
**CERTIFIED**  
JUNIOR ASTRONAUT.



## 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 10 to 17 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 3 MAIN MILESTONES TO BECOME A ...



**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

## Step 1

Join the courses of K12 space science and satellites Academy - [K12Space-Academy.com](http://K12Space-Academy.com)

**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](http://remote-sensing-portal.com)  
[remote-sensing-portal.com](http://remote-sensing-portal.com)



[Become Certified in Advanced Space and Satellites Technologies](http://egsa-space-technology-portal.com)  
[egsa-space-technology-portal.com](http://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](http://k12-space-academy.com)  
[info@k12-space-academy.com](mailto: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.

## 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?

## Certified Junior Satellite Image Analyst & Interpreter Certificate™



This certificate program aims to teach you how to analyse 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.

## 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

## 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®).

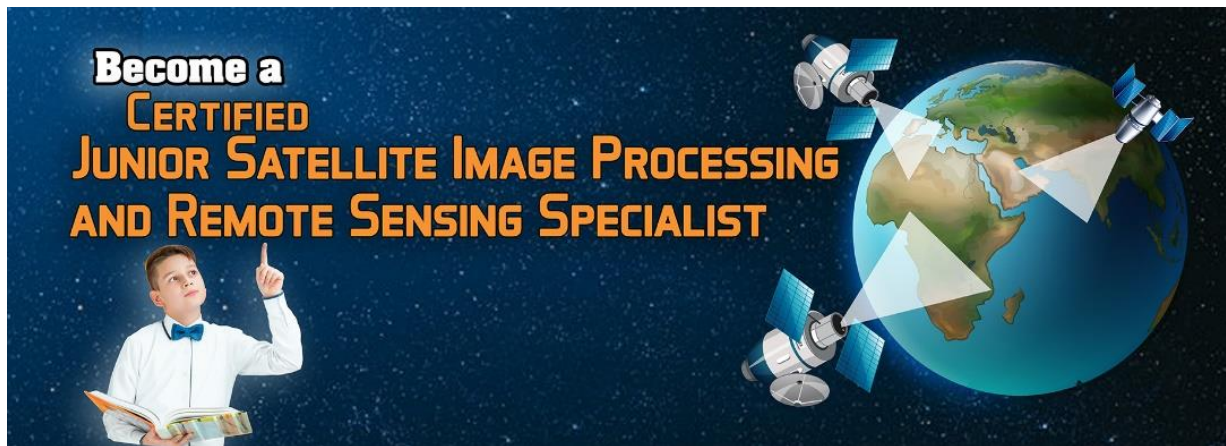
In this program, you will know how to perform many basic and essential image processing functions on satellite images, such as opening various satellite data types, taking measurements of features in the satellite images, linking images, controlling the scale, changing various raster options, analyzing 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.

## 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?

## 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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