

Stream 2 — Mechanical design and fabrication



Trainer brief — Erasmus+ vocational programme, Athens, November–December 2026

Read this together with the call. The binding text is the Greek Full terms (Πλήρης Πρόσκληση); this brief describes the content of the work.

1. About this brief

This brief is for people applying to lead one of the three streams in the EVEC Athens call for trainers: **Stream 1**, Automation, sensors and IoT; **Stream 2**, Mechanical design and fabrication; **Stream 3**, Transport economics and logistics. It explains what the programme is, what the learners will build, where and when the work happens, and exactly what your 10-day programme proposal must contain. All three stream briefs share this common part; each also has a part written for its own stream.

The fee, payment, eligibility, the legal conditions (invoicing, the permit for public-sector employees, the criminal record check, insurance) and your personal data are governed by the Full terms of the call; this brief does not go into them.

2. The programme at a glance

Programme	An Erasmus+ KA1 learner mobility in vocational education and training (KA122-VET). EVEC Athens is the hosting organisation.
Learners	21 secondary vocational (VET) learners from a partner vocational school abroad, most of them under 18. They come in 3 groups of 7, one group per vocational profile: electrical/automation learners (Stream 1), computer-control learners (Stream 2), transport and logistics learners (Stream 3).
Accompanying teachers	3 teachers from the learners' own school. They are present at every session and remain responsible for supervising the learners.
Stay in Athens	14 days, within a window between the beginning of November and mid-December 2026. The exact 14 days are not fixed yet. They will be announced to the selected trainers.
Your part	A 10-day programme for your group: 6–7 activity days at the venue and 3–4 days of educational visits to companies or laboratories. 40 hours of teaching in total, all of which you attend in person. Preparation is not part of the 40 hours and is not paid.
Venue	Museum of Experiments (Μουσείο Πειραμάτων Αγίου Δημητρίου), Thalias 3 (Θαλείας 3), Agios Dimitrios 173 43, Attica. Map: maps.app.goo.gl/iA7dvZkcYgEW2j7e9 Sessions at the venue: weekday afternoons, after 14:00.
Working language	English.
How the groups work	Some sessions bring all 21 learners together. Most run in the three groups in parallel, with all three trainers working at the same time.

3. The shared project: one production system

The three groups build one production system together: a working hydroponic microgreens growing rack, fully instrumented, that reports itself live through an app. Then they work out whether its produce can reach a customer

profitably. Streams 1 and 2 build the production. Stream 3 answers the question that follows: now that it produces, how does it reach a customer?

STREAM	WHAT IT BUILDS	WHAT IT HANDS TO THE OTHERS
Stream 1 Automation, sensors and IoT <i>The nervous system</i>	Sensor wiring and calibration (moisture, temperature, humidity, light, water level, pH, EC); automated watering and lighting logic; the controller (microcontroller or PLC); a live dashboard comparing soil against hydroponic growing.	To Stream 2: the sensor list with each sensor's dimensions, and its parts for the bill of materials. To Stream 3: the live production data. To Guide 1: the wiring, calibration and app.
Stream 2 Mechanical design and fabrication <i>The rack itself</i>	Frame and shelves; plumbing; pump and valve mounting; CAD and 3D-printed sensor mounts and brackets; the complete bill of materials with real Greek suppliers and prices. Not in scope: a robotic seeding arm.	To Stream 1: the sensor mounts and brackets, and a rack ready to wire. To Stream 3: real cost data from the bill of materials. To Guide 1: the frame, the plumbing, the CAD and print files, and the bill of materials.
Stream 3 Transport economics and logistics <i>The delivery operation</i>	Wholesale to a retailer versus running your own van; a real Athens delivery round; how often to deliver each week, given a shelf life of a few days; electric versus fuel vehicle costs, including the δακτύλιος (Athens traffic-ring) exemption; fresh product to island restaurants in summer within its shelf life; break-even.	To everyone: how the produce reaches a customer, with the numbers behind it. To Guide 2: the delivery calculator.

Stream 3 has its own deliverable, Guide 2. It is not a reviewing or commenting role.

The three programmes must fit together. Your proposal says what your stream needs from the other two, what it gives them, and when. The sessions with all 21 learners together are the natural moments for the pieces to meet. Which sessions are joint is agreed when the programmes are finalised.

◆ 4. What gets published

At the end, the work is published open source for microgreens growers, as two guides:

Guide 1	How to build an instrumented hydroponic rack: the bill of materials, the wiring, the calibration, and an app any grower can follow online. It comes mainly from Streams 1 and 2.
Guide 2	A calculator for how an entrepreneur should decide how to deliver microgreens in Athens, with the real numbers behind the decision. It is the deliverable of Stream 3.

- Documents are published under CC BY 4.0 and code under an OSI-approved open-source licence. You keep authorship (see section 10).
- EVEC will also use both guides for a microgreens growers' cooperative that it is establishing in Athens in 2027: microgreens.org.gr/cooperative
- The rack stays with EVEC permanently, and later groups will extend it. Build it to last, and document it so that someone who was not in the room can carry on.
- EVEC will confirm to the selected trainers where the guides will be published and who edits the final text.

◆ 5. The learners

Beyond what section 2 says, we know three things. The learners have been described to us as the best students of their school. They have done similar project work before. And all of them arrive with their own laptops. We know nothing more yet, so do not assume a particular level of English or of prior knowledge. EVEC will confirm to the selected trainers whether more can be shared about each group's previous project work before the programmes are finalised.

How to work with them

- **Show, then do.** Demonstrate each step once, then let the learners do it themselves, hands on. Keep the talking short and the practice long.
- **Short instructions.** One step at a time, in plain English, with a picture or a diagram wherever you can. Give each group a short written checklist of the key steps.
- **Check early.** Use the first session to find out what the group already knows, and adjust.
- **Give them real decisions.** Let them own a real part of the system and make real choices about it.
- **Use their laptops.** Prefer free software they can install on their own laptops and keep using afterwards.

The accompanying teachers supervise the learners. You are responsible for safe instruction and the safe use of equipment in your sessions.

6. Venue and schedule

The venue is the Museum of Experiments in Agios Dimitrios (address and map in section 2).

Times at the venue	Weekday afternoons, after 14:00. The space is in use until 14:00.
Latest finishing time	EVEC will confirm the latest finishing time to the selected trainers; plan your sessions so they fit an afternoon slot.
The 14 days	Not fixed yet; announced to the selected trainers. They may fall later in the window so that public-school teachers can obtain their permit.
Room layout and equipment	EVEC will confirm the room layout and the equipment available at the venue to the selected trainers.
Between sessions	EVEC will confirm to the selected trainers whether the rack and the equipment can stay at the venue between sessions.

Plan your venue days as weekday afternoon blocks. Your visit days follow the times agreed with each company or laboratory (see section 7). Because most sessions run in parallel, agree with the other two trainers what each group needs, and when. At the venue you follow the venue's induction and EVEC's safety protocol.

7. Company and laboratory visits

Three to four of your 10 days are educational visits to companies or laboratories connected to the project. They are learning hours and part of your 40 hours, not cultural outings. You attend them in person, as you do every session.

- **You propose them.** EVEC gives no company names. In your proposal, name each company or laboratory, say what the learners will see and do there and how it links to your stream and to the shared project, and say whether you have already contacted it. This tells the evaluators how realistic each visit is.
- **EVEC helps with the arrangements.**
- **Times are agreed with each company or laboratory,** and may include mornings.
- **Safety.** The accompanying teachers are with the group and remain responsible for supervising the learners. The host's own safety rules apply on its premises. Check them in advance, including whether the host accepts visitors under 18, and brief the group before you go in.
- EVEC will confirm to the selected trainers how the group travels to the visits, and who arranges and pays for the transport.

A good visit shows the learners the real-world version of what they are building or deciding.

8. Equipment

EVEC buys and owns the equipment, and you specify what your programme needs. In your proposal, list each item with its quantity, a supplier and an estimated cost. The equipment stays with EVEC after the activity, for future groups.

Specify only what your programme and the rack really need, priced from real suppliers that can deliver in Greece before the activity starts. Include the protective equipment your sessions need. If your stream needs little or no

equipment, say so.

9. Your 10-day programme proposal

Your proposal is the heart of your application. Write it on the proposal template, <https://evec.org.gr/wp-content/uploads/2026/09/Proposal-Template-10-day-programme.docx>, and save it as Word or PDF.

You apply in one step, through the application form:

<https://docs.google.com/forms/d/e/1FAIpQLSdtnNBQUq1QLfAyFEGJfMVof17N5J6cW9DAVDfDorRLWvOGQg/viewform>.

In the same form you answer the questions, make the declarations and upload the following documents: (a) your proposal, (b) your CV in English (stating your level of English) and (c) evidence of your experience in the stream (one or more files). The form asks you to sign in with a Google account (free), because it includes file uploads. If you do not have a Google account, write to vet@evec.org.gr by Thursday 24 September 2026, then send the same answers and the same documents (a)–(c) by email to the same address by the deadline below. Deadline: **Tuesday 29 September 2026, 23:59 (Athens time)**. EVEC confirms receipt by email, with your application reference number, within 2 working days.

You may apply for more than one stream: submit the form separately for each stream, with a separate proposal for each, and each submission receives its own reference number (TR26-001, TR26-002 and so on). You can be selected for one stream only; if you rank first in more than one stream, EVEC offers you the stream where it has the greater need, and the other position goes to the next applicant in that stream's ranking. Write your proposal in English, on the template, in no more than 6 A4 pages.

What it must contain

PART	WHAT TO INCLUDE
A. Overview	In a few sentences: what your group will learn, and what it will make.
B. Learning outcomes	What each learner will be able to do by the end, written so it can be checked in the end-of-stream assessment.
C. Day-by-day plan	All 10 days: 6–7 venue days (weekday afternoons after 14:00) and 3–4 visit days, adding up to 40 hours. For each day: venue or visit, the hours, the aims, what the learners do, and what they have produced by the end of it. Mark the sessions with all 21 learners together. One way to reach 40 hours: 7 venue afternoons of 4 hours and 3 visit days of 4 hours (EVEC will confirm the venue's latest finishing time; see section 6). Preparation is not part of the 40 hours.
D. The visits	The 3–4 companies or laboratories, named. For each: what the learners see and do, how it links to your stream and the shared project, and whether you have already contacted it.
E. Equipment list	Item, quantity, supplier, estimated cost (see section 8).
F. Assessment	How you will run the end-of-stream assessment: a practical demonstration against a short rubric. Outline the rubric; the final version is agreed in advance.
G. Cooperation	How your stream works with the other two: what you need from them and when, and what you give them and when.
H. Guide contribution	What your stream contributes to Guide 1 or Guide 2, and in what form (text, diagrams, code, spreadsheets).
I. Safety	The main risks in your sessions and on your visits, and how you control them. If you are selected, the safety annex requires a risk assessment for each workshop (see section 10).
J. Short bio	Your experience in the stream's field and in teaching teenagers or VET learners. Your full CV in English is uploaded separately.

How it is scored

The proposal is worth 40 of the 120 points in the evaluation (100 for the application documents and 20 for the online interview, held in English, to which every eligible applicant is invited). EVEC looks at its quality, its learning outcomes, realistic company or laboratory visits with the companies or laboratories named, and its fit with the shared project. The other 60 points for the application documents (professional experience in the stream, experience teaching teenagers or VET learners, and English) are explained in the call. Before you upload, check that your days add up to 40 hours, that every visit is named, and that the other two streams could plan around what you promise them.

10. After selection

If you are selected, this is what the work involves beyond the teaching itself. The documents needed for the contract are listed in the call.

- **Finalise the programme** with EVEC and the sending school.
- **Attendance.** Keep a daily attendance sheet for each session, signed by you and countersigned by an accompanying teacher.
- **End-of-stream assessment.** A practical demonstration against a short rubric agreed in advance.
- **Learning-outcome records.** Hand EVEC a record of learning outcomes for each learner, in simple English. Hand the signed attendance sheets and the learning-outcome records to EVEC within 5 working days after the activity ends.
- **Open licence.** Your teaching materials, templates and code, and the guides, are published under an open licence: CC BY 4.0 for documents and an OSI-approved licence for code. You keep authorship. Declare any material you already had before this engagement as background.
- **Code of conduct.** You sign EVEC's code of conduct: no one-to-one unsupervised contact with learners; no private messaging or social-media contact with learners; EVEC's photo rules; and reporting any incident to EVEC.
- **Safety annex.** You sign a safety annex: a risk assessment for each workshop; a safety briefing with a sign-in sheet; protective glasses, and gloves except at drills or other rotating tools; ventilation for 3D printers; no mains equipment near water without a residual-current device (πέλε διαφυγής); and incident reports.

11. Key dates

WHEN	WHAT
Tuesday 15 September 2026	The call is published, with the three stream briefs, the proposal template and the form.
Thursday 24 September 2026	If you do not have a Google account: the last day to write to vet@evec.org.gr (see section 9).
Tuesday 29 September 2026, 23:59	Applications close (Athens time): the application form, with your proposal and documents uploaded in it, or the email application if you cannot use a Google account (see section 9).
Thursday 1 to Monday 5 October 2026	Online interviews (indicative dates), to which every eligible applicant is invited by email.
By Tuesday 6 October 2026	Provisional results (indicative date). Objections until Friday 9 October 2026 (indicative; in any case within 3 working days from the day after the results are posted).
By Tuesday 13 October 2026	Final results (indicative date). Then permits for public-sector employees, contracts, and finalising the programmes.
November to mid-December 2026	The 14-day activity. The exact dates are announced to the selected trainers.
After the activity	Payment within 15 days after the activity ends and the invoice (Τιμολόγιο Παροχής Υπηρεσιών) is received, as set out in the call.

♦ Stream 2 — Mechanical design and fabrication

The rack itself: the frame, shelves and water circuit that the whole project stands on.

The three groups build one production system together: a working hydroponic microgreens growing rack, fully instrumented, that reports itself live through an app. Your group builds the rack. Stream 1 gives it a nervous system; Stream 3 works out how its produce can reach a customer profitably.

What this stream builds

- **Frame and shelves:** a stable rack for the growing trays, in materials you can justify on cost, safety next to water and ease of copying.
- **Plumbing:** the water circuit that feeds the hydroponic shelves.
- **Pump and valve mounting:** secure, reachable for maintenance, with their cables and connections kept above and away from the water.
- **CAD and 3D-printed parts:** sensor mounts and brackets, designed, printed and fitted.
- **The complete bill of materials:** every part, with quantity, a real Greek supplier and a real price.

Your work goes into **Guide 1**, published open source at the end: how to build an instrumented hydroponic rack, with the bill of materials, wiring, calibration and an app any grower can follow online. The rack stays with EVEC permanently and later groups extend it, so build it to be understood, repaired and added to. EVEC will confirm to the selected trainers where the rack will stand after the activity and any limits on its size or weight.

Who your learners are

You work with the computer-control group: seven secondary vocational (VET) learners from a partner vocational school abroad, most of them under 18. They are described to us as the best students of their school, and they have done similar project work before. Each arrives with their own laptop. EVEC will confirm to the selected trainers the laptops' operating systems and whether learners may install CAD software. Three accompanying teachers from their school are present at every session and remain responsible for supervising the learners. The working language is English. EVEC has no further information about the group, so plan a quick way to find out on the first day what they can already do.

What you hand to the others, and what you need from them

You give Stream 1	The sensor mounts and brackets, and a rack ready to wire, with a dry place for the controller and power supplies agreed with them.
You need from Stream 1	Their sensor list and the dimensions of each sensor, so the mounts fit first time, and the parts on their side (sensors, controller, cables) for the complete bill of materials. Their dashboard compares soil against hydroponic growing, so agree together whether the rack also holds the soil trays for that comparison.
You deliver for Guide 1	The frame, the plumbing, the CAD and print files, and the bill of materials.
You supply Stream 3	Real cost data from your bill of materials, which Stream 3 can use in its own deliverable, Guide 2.

Use the sessions with all 21 learners together for the handovers, and show in your proposal when each one happens. EVEC will confirm to the selected trainers whether it puts them in touch with one another before the activity.

What your programme should show

You propose and lead a 10-day programme for your group: 6–7 activity days at the venue, on weekday afternoons after 14:00, and 3–4 days of educational visits. Together that is 40 hours of in-person teaching, and you attend all of it. Preparation is not part of the 40 hours and is not paid. We want a realistic arc from CAD to an assembled, leak-tested rack. The order and the split of days are yours to propose, for example:

PHASE	WHAT THE LEARNERS DO	WHAT COMES OUT
1 · Start	The design challenge; safety briefing with sign-in sheet; design limits; sensor list agreed with Stream 1.	A shared list of requirements.

PHASE	WHAT THE LEARNERS DO	WHAT COMES OUT
2 · Design	Sketches, then CAD for the frame, shelves, mounts and brackets.	CAD files and a first bill of materials.
3 · Make	3D printing, frame assembly, plumbing, pump and valve mounting.	A first working shelf for Stream 1, then the assembled rack.
4 · Test	Leak test of the water circuit; fit check with Stream 1's sensors.	The whole rack leak-tested and handed over for wiring.
5 · Document	Final files, checked prices, photos and drawings of each step. The end-of-stream assessment: a practical demonstration against a short rubric agreed in advance.	CAD and print files ready to publish; a verified bill of materials.

For each day, show the learning outcomes, the activities, the hours and the place. Name the companies or laboratories you propose to visit, outline the assessment rubric, and list the equipment you need: item, quantity, supplier, estimated cost. EVEC buys and owns the equipment and keeps it for future groups. EVEC will confirm to the selected trainers the date by which the equipment list must reach EVEC so it can be ordered in time, and which fabrication work (3D printing, cutting, drilling) may be done at the venue.

Files go out under an open licence: CC BY 4.0 for documents, an OSI-approved licence for code. You keep authorship and declare any material you already had before this engagement as background.

Out of scope: the robotic seeding arm

A robotic seeding arm would take up the whole stream and would not appear in the published guide, which is about a rack any grower can build. Keep your group's ten days on the rack.

Suggested kinds of visits

Visits are learning hours, not cultural outings. You propose the companies or laboratories; EVEC helps with the arrangements. Times are agreed with each company and may include mornings. Kinds of visit that fit this stream:

- a fabrication or 3D-printing workshop;
- a hydroponics or irrigation supplier;
- a metal or plastics manufacturer;
- a supplier from your own bill of materials, to see how parts are specified, stocked and priced;
- a laboratory that works on fabrication or on controlled growing.

Ideal profile

Mechanical engineers, teachers of mechanical or CAD subjects, or fabrication professionals with documented experience, who can teach hands-on in English. You know, or can quickly find, Greek suppliers of frame materials, fittings, pumps and printing filament, and you design for reproduction: simple parts, standard sizes, clear drawings.

Safety points

The accompanying teachers supervise the learners. You are responsible for safe instruction and the safe use of equipment in your sessions. You follow EVEC's safety protocol and the venue's induction, and you sign EVEC's safety annex.

- **Every workshop:** a risk assessment, and a safety briefing with a sign-in sheet.
- **Tools:** protective glasses and gloves, but no gloves at a drill or any other rotating tool, where a glove can be caught. Show each tool before it is used, and choose tasks that suit learners who are mostly under 18.
- **3D printers:** the nozzle and bed are hot, so hands off while printing. Ventilate the room.
- **Water and electricity:** no mains equipment near water without a residual-current device (ρελέ διαφυγής). Leak-test the plumbing before Stream 1's controller and wiring go on the rack.
- **Weight:** a rack full of water is heavy. Design it so it cannot tip over.
- **Incidents:** report every one to EVEC.

Pitfalls

- **Over-engineering.** The best rack is one a grower can build from Guide 1 with ordinary tools and parts bought in Greece. If a part needs a special machine, rethink it.

- **Work nobody can reproduce.** Every part goes in the bill of materials, every printed part in the files, every step in a photo or drawing (following EVEC's photo rules).
- **Guessed prices.** Check each line with a real supplier, and note the date and whether the price includes VAT. Stream 3 builds on these numbers.
- **Designing alone.** Agree the sensor list and dimensions with Stream 1 before you print a single mount.
- **Handing over too late.** Stream 1 needs days of live growing data, so hand over a first working shelf early rather than the whole rack at the end.
- **Documents on the last day.** Document as you build.

◆ Contact

Questions about this stream, this brief, the shared project or your proposal: **vet@evec.org.gr**. EVEC replies within 2 working days, so if you have a question, write early.

The call page, with the application form, the Full terms and the three briefs: <https://evec.org.gr/call-workshop-trainers-athens-2026/>

The Full terms (Πλήρης Πρόσκληση) are the binding text: in Greek, <https://evec.org.gr/wp-content/uploads/2026/09/Plires-Prosklisi-Ekpaideftes-Ergastiriou-2026-EL.pdf>; English translation, for convenience, <https://evec.org.gr/wp-content/uploads/2026/09/Full-Terms-Call-for-Workshop-Trainers-2026-EN.pdf>. If the English differs from the Greek, the Greek Full terms prevail.

How EVEC handles your personal data is explained in the Full terms and at evec.org.gr/privacy/.

EVEC Athens — European Voluntary and Educational Center Athens (ΕΥΡΩΠΑΙΚΟ ΕΘΕΛΟΝΤΙΚΟ ΚΑΙ ΕΚΠΑΙΔΕΥΤΙΚΟ ΚΕΝΤΡΟ), non-profit association · ΑΦΜ 997127685 · Registered office: Kallistratous 89, 157 71 Zografou, Athens.



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