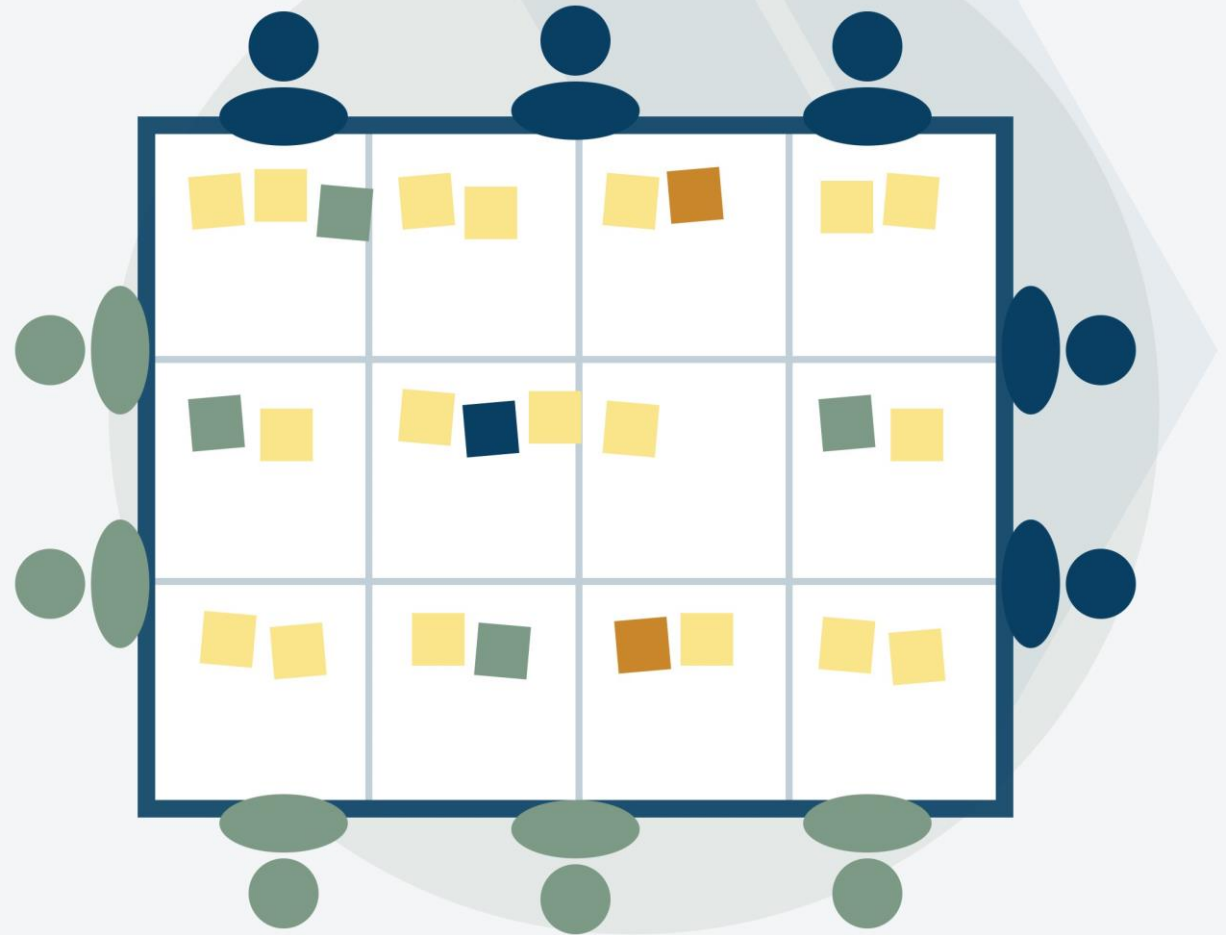




Ethical Engineer

Bootcamp Design Guide

How to design and run an interdisciplinary
bootcamp on responsible AI in engineering:
four canvases, one method, your context.



Co-funded by
the European Union

www.ethicalengineer.eu

About this guide

THE PROJECT

Ethical Engineer is an Erasmus+ Cooperation Partnership in higher education (2023–2026) that brings ethical, social and legal aspects of AI into engineering education.

This guide is the main result of Work Package 4, the Ethical Engineer Bootcamps. It systematises the bootcamp methodology so that other higher education institutions can replicate and adapt it.

www.ethicalengineer.eu

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CHAPTER 1

Introduction

What an Ethical Engineer Bootcamp is, who this guide is for, and how to read the pages that follow.

IN THIS CHAPTER

Purpose of the guide

5

How to use this guide

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What is an Ethical Engineer Bootcamp?

6

How this guide was made

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Who should use this guide

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Purpose of the guide

A practical method for teaching the ethics of AI the way engineers learn best: by building something.

Engineering students learn AI as a technical subject. Its ethical, social and legal consequences rarely get the same hands-on treatment, and lecturers who want to change that often have no format to reach for. This guide gives them one.

An Ethical Engineer Bootcamp is a short, intensive, hackathon-style event in which interdisciplinary student teams work on a real challenge brought by a company or another external partner, and are judged not only on what they build but on how responsibly they build it.

The guide does not prescribe one bootcamp. It gives you four canvases and a way of working through them, so that the bootcamp you design fits your students, your institution and your partners. Three pilot bootcamps in Prague, Riga and online were designed with exactly these canvases.



Four canvases

One canvas per design step, each broken into building blocks with guiding questions and examples.



One way of working

A design workshop, a bootcamp, a reflection: the loop that turns one event into a repeatable programme.



A toolbox

Printable canvases, sample agendas, a checklist for responsible AI, templates for briefs, rubrics and surveys.

What is an Ethical Engineer Bootcamp?

Six things that are true of every bootcamp designed with this guide, whatever else the host decides.

A short, intensive event in which interdisciplinary student teams work on a real AI challenge brought by an external partner, and are judged on how responsibly they solve it, not only on how well.



Hackathon-style

Compressed time, teams, a challenge, a pitch. The energy of a hackathon with the structure of a course.



Interdisciplinary

Engineers work with social and political science students, or take on their roles. Explaining yourself to another discipline is the method.



Real challenge

A company or another external partner brings the problem (and sits on the jury). The ethical questions are not hypothetical.



Responsible-AI checkpoint

Every team stops and checks its idea against the Ethical Diagnostic Checklist. Optimally with a mentor.



Ethics is assessed

The jury judges the ethical reasoning, not just the technology. The criteria are known at the start of the day.



Adapted to the host

Format, length, topic, level and venue are the host's choice. The canvases make the choices explicit.

Who should use this guide

Five people who will find something for themselves in it, and where each of them should start reading.



The lecturer

FOCUS

Wants to bring AI ethics into an engineering course without writing a new module from scratch.

START WITH

Step 3, the Design Canvas, then work backwards to Step 2.



The programme leader

FOCUS

Needs an event that counts towards the curriculum, can be assessed and repeated every year.

START WITH

Step 1, then the Alignment Check in Step 3.



The learning designer

FOCUS

Turns a good idea into a learning journey with objectives, activities and assessment that fit.

START WITH

The four steps at a glance, then Step 3.



The industry partner

FOCUS

Brings a real challenge and wants to know what the students will do with it and what they get back.

START WITH

Chapter 3, during the bootcamp, and block 3.5.



The student organiser

FOCUS

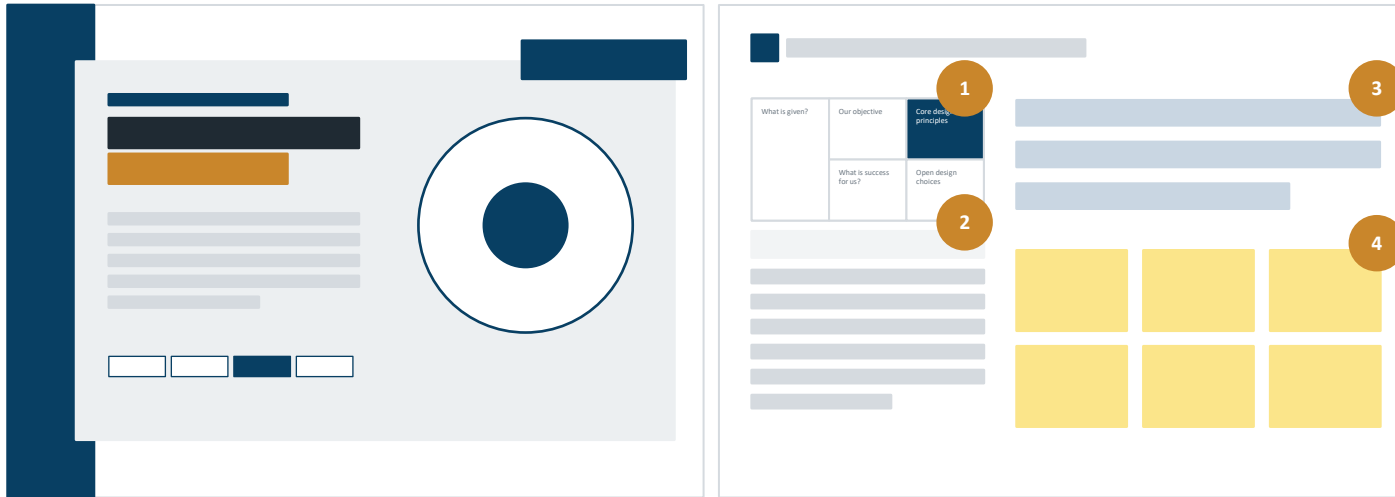
Runs the event on the day and needs the plan, the roles and the agenda to work.

START WITH

Step 4 and the countdown in Chapter 3.

How to use this guide

Every building block takes two facing pages: an introduction with a visual on the left, the working content on the right. This is how to read the right-hand page.



THE FOUR STEP COLOURS



Step 1 · Frame



Step 2 · Set up



Step 3 · Design

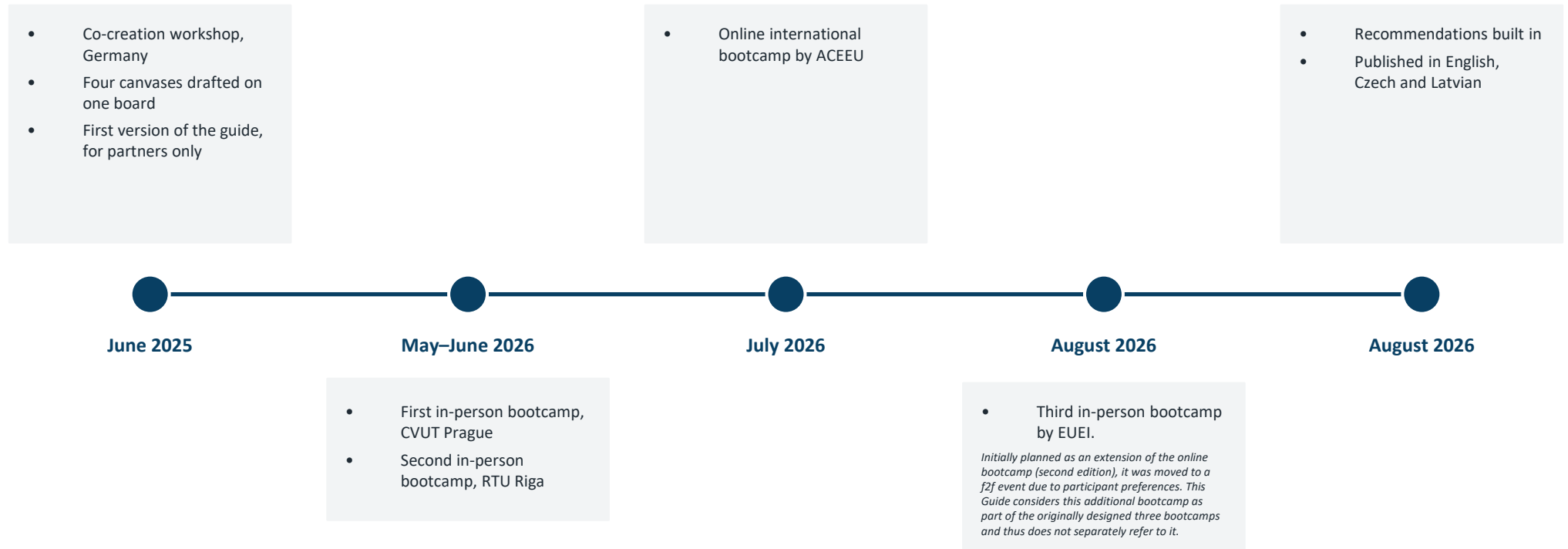


Step 4 · Plan

- 1 Miniature canvas with the block highlighted, so you always know where you are. The step colour tells you which canvas.
- 2 Series note, only where it applies: what changes when you run several bootcamps rather than one.
- 3 Guiding questions. Answer them on sticky notes; the answers are the content of the block.
- 4 Examples from the three Ethical Engineer bootcamps, as they appeared on the partners' co-creation board. Use them as prompts, not as answers.

How this guide was made

The method was designed by the seven Ethical Engineer partners and tested three times before it was written down.



2

CHAPTER 2

Bootcamp design methodology

Four questions asked in order, each with its own canvas. Fill them with sticky notes in a workshop, and bring them back to the table after every bootcamp.

IN THIS CHAPTER

Four canvases, one method	11	Step 2 Contexts and operational set-up	30
The four steps at a glance	12	Step 3 Pedagogical and organisational design	54
Step 1 Objectives and core design principles	14	Step 4 Implementation planning	80

Four canvases, one method

The methodology is four questions asked in order, each with its own canvas.

Why are we running this, and what is fixed? What does this particular bootcamp look like? How will participants learn, work and be assessed? Who does what, by when? Each question has a canvas, and each canvas is broken into building blocks that the following pages explain one by one.

The canvases are meant to be filled with sticky notes in a workshop, not typed into a form. Sticky notes can be moved, clustered and thrown away, which is exactly what a design conversation needs. The filled canvases are your design; the guide only supplies the structure.

Nothing you write is final. After every bootcamp the canvases come back onto the table, the notes that turned out to be wrong are replaced, and the next bootcamp starts from a better design than the last.

In this guide, we assume that the hackathon is organised collaboratively by a group of partners, referred to throughout as “partners”. These may include both external organisations and internal collaborators.



Work in order

Step 1 frames, Step 2 situates, Step 3 designs, Step 4 plans. Each step builds on the answers of the one before.



Sticky notes, not sentences

One thought per note. Short enough to move around, concrete enough to argue about.

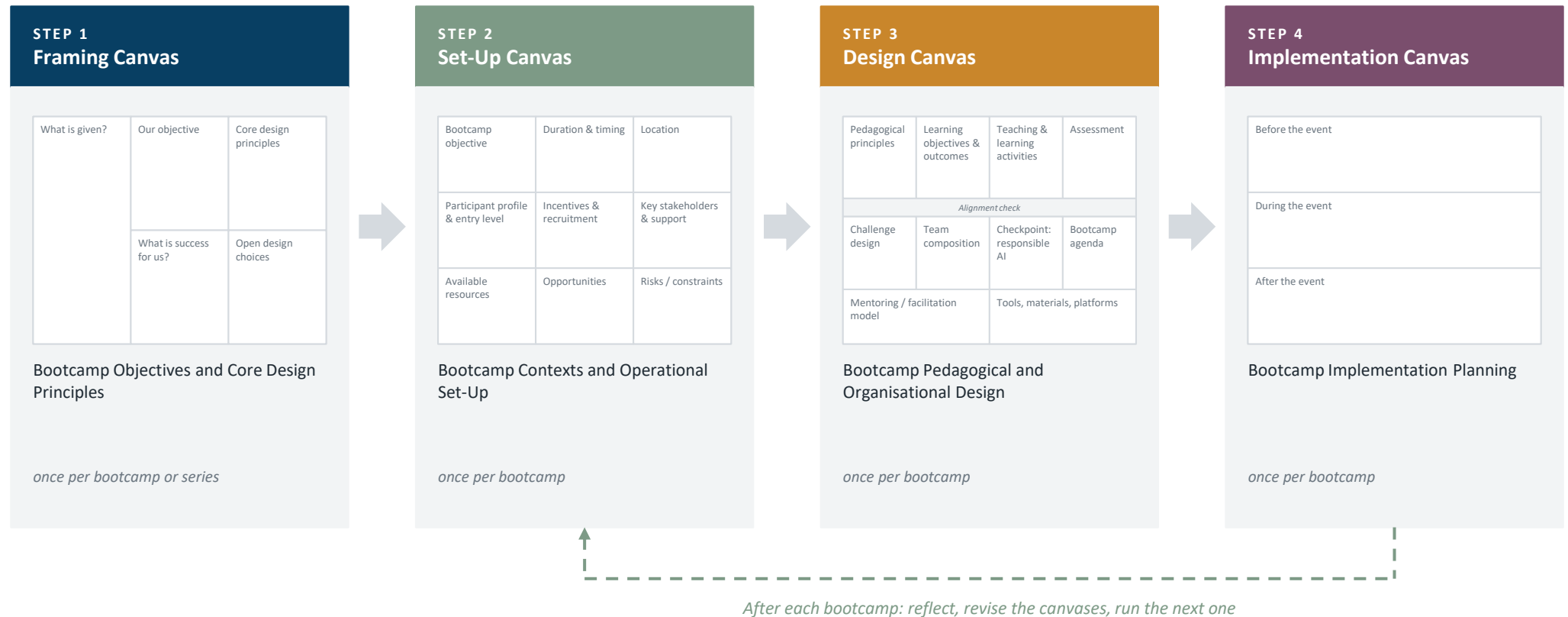


Revisit after every bootcamp

The canvases are living documents. Reflection after the event feeds straight back into them.

The four steps at a glance

One canvas per step. Step 1 is filled once; Steps 2 to 4 once for every bootcamp you run.



Who fills what, and when

A design workshop of one day covers all four canvases for one bootcamp. A series needs a shared Step 1 first.

	WHO FILLS IT IN	WHEN	TIME NEEDED	WHAT YOU GET
STEP 1 Framing Canvas	The organising team; in a series, all hosts together	At the start, before any event is planned	2-3 hours	Objective, success criteria, fixed principles, open choices
STEP 2 Set-Up Canvas	The local host team, with the faculty and partners	Once the date and venue are being decided	2-3 hours	A one-page picture of this bootcamp's context
STEP 3 Design Canvas	Host team with a learning designer, mentors and one industry partner	Six to eight weeks before the bootcamp	4-5 hours	Learning design, challenge, agenda, support and tools
STEP 4 Implementation Canvas	Host team and everyone with a task	Right after Step 3, updated weekly	2 hours, then ongoing	A task list before, during and after the event

1

STEP 1

Bootcamp objectives and core design principles

Framing Canvas

Why are we running this, what is fixed, and what do we leave open?

Filled once, for one bootcamp or for a whole series. Two to three hours with the organising team.

THE CANVAS

1.1 What is given?	1.2 Our objective	1.4 Core design principles
	1.3 What is success for us?	1.5 Open design choices

BUILDING BLOCKS IN THIS STEP

1.1	What is given?	16	1.4	Core design principles	22
1.2	Our objective	18	1.5	Open design choices	24
1.3	What is success for us?	20			

The Framing Canvas

Why are we running this, what is fixed, and what do we leave open?

1.1 What is given? <i>Constraints from funder, project, curriculum, faculty, calendar</i>	1.2 Our objective <i>Why we run it; what should be different afterwards</i>	1.4 Core design principles <i>What stays fixed, whatever the context</i>
	1.3 What is success for us? <i>How we will know: signs and numbers</i>	1.5 Open design choices <i>What may vary; decided in Steps 2 and 3</i>

Numbers show the recommended order of filling in.

FRAMING CANVAS • WHAT IS GIVEN?

Start with what you **cannot change**.

Before you argue about hackathon styles or team sizes, write down what is already decided.

Every host lives inside a box like that, drawn by a funder, a curriculum or a calendar. This block makes the box visible, so that the design can use its walls instead of walking into them.



CONNECTS TO

1.1 What is given?

1.2 Our objective

1.5 Open choices

2.9 Risks / constraints

Everything listed here narrows the open choices in 1.5 and reappears as a constraint in 2.9.

WHERE IT SITS ON THE CANVAS

1.1 What is given?	1.2 Our objective	1.4 Core design principles
	1.3 What is success for us?	1.5 Open design choices

Running several bootcamps? For example, in a funded project the givens come from the proposal. List them once for the whole series.

Every bootcamp starts inside a box someone else drew: a funder's targets, a university framework, a curriculum slot, a faculty calendar, a budget line, a partner who has already been promised something. Naming these givens first stops the team from designing a bootcamp that cannot happen.

Be concrete. "Limited budget" is not a given; "EUR 1,500 for catering and prizes" is. Dates, numbers, names and rules belong here; wishes do not.

The list is also your defence later on. When a stakeholder asks why the bootcamp is not longer, bigger or in another month, the answer is usually on this canvas.

GUIDING QUESTIONS

What has already been decided before we sat down?

Which numbers, dates and rules can we not move?

Who has been promised what, and by whom?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Hackathon-style format
written into the project
proposal

Students from engineering,
social and political sciences

Companies or external
stakeholders must be
involved

Three bootcamps, one of
them online

Ethical or responsible
solutions as the expected
outcome

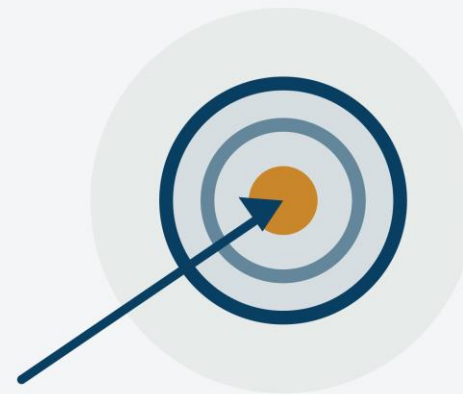
70+ participating students
across the series

FRAMING CANVAS · OUR OBJECTIVE

One sentence. **Everyone can repeat it.**

The partners' shared objective fitted on a single sticky note. Everything else you hope for goes elsewhere on the canvas.

That discipline is the point of this block. A bootcamp with two objectives has none, because every hard decision on the day will be made in favour of whichever one the loudest person remembers. The objective is also the sentence you will quote in the invitation, the mentor briefing and the report afterwards, so it is worth getting right early.



CONNECTS TO

1.1 What is given?

1.2 Our objective

1.3 Success

2.1 Bootcamp objective

Constrained by the givens; measured by 1.3; each host's event objective in 2.1 sits underneath it.

WHERE IT SITS ON THE CANVAS

1.1 What is given?	1.2 Our objective	1.4 Core design principles
	1.3 What is success for us?	1.5 Open design choices

Running several bootcamps? One shared objective for the series. Each host adds its own event objective in Step 2.

The objective is the sentence you would say to a dean in the lift: what the bootcamp is for and what should be different afterwards. If it takes a paragraph, it is not yet an objective.

Write it at the level of people, not activities. "Run a hackathon" is an activity. "Engineering students leave able to spot and argue an ethical problem in an AI system" is an objective.

One objective is enough. Everything else you hope for goes into the success criteria in the next block, where it can be measured rather than promised.

GUIDING QUESTIONS

What should be different for students, the faculty and partners afterwards?

Could we say it in one sentence to someone who has never heard of the project?

Is it about what people can do, or about what we organise?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Opening students' minds to new possibilities of responsible AI

Basic ethical principles applied in engineering thinking and reasoning

Students learn to implement AI in engineering disciplines ethically

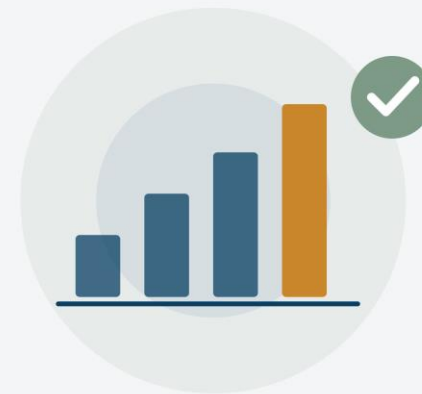
Idea owners learn to consider the ethical requirements of their idea

FRAMING CANVAS · WHAT IS SUCCESS FOR US?

Decide now what you will count and notice later.

Most bootcamps start with targets someone else has set: a funder's indicators, a faculty's participation numbers, a course's pass rate. Put those on the canvas first, word for word. Then add the signs no report ever asks for: teams still working until the last pitch, a company that wants to come back, an idea worth writing up.

Both kinds belong here. Numbers make the bootcamp reportable; signs make it worth repeating. Written down before the event, they also decide what the evaluation survey has to ask.



CONNECTS TO

1.2 Our objective

1.3 Success

3.4 Assessment

4.3 After the event

Turns the objective into evidence; shapes the assessment criteria in 3.4 and the evaluation in 4.3.

WHERE IT SITS ON THE CANVAS

1.1 What is given?	1.2 Our objective	1.4 Core design principles
	1.3 What is success for us?	1.5 Open design choices

Running several bootcamps? Agree the shared indicators here; hosts may add local ones in Step 2.

Success criteria turn the objective into things you can observe or count. Aim for a mix: numbers you have to report, and signs that tell you whether it actually worked.

Five to seven criteria are plenty. More than that and nobody will check them; fewer and you will only measure what was easy.

Write each one so that a stranger could tell whether it was met. "Good atmosphere" fails that test; "90 percent of participants say they would recommend the bootcamp" passes it. Where a funder already sets targets, copy them here word for word.

GUIDING QUESTIONS

What would we accept as evidence that the bootcamp worked?

Which numbers do we have to report anyway, and to whom?

What would make us proud that no report will ever ask for?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

90 % of participants would recommend the bootcamp

At least 4 of 5 teams still working at the final pitch

Every team can name who its system might harm

Two partner companies ask to bring a challenge next year

One team idea continues after the bootcamp

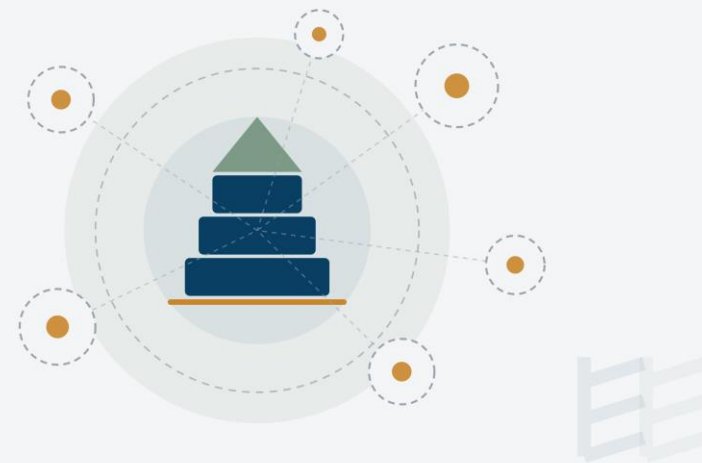
All three bootcamps run by the end of June

FRAMING CANVAS · CORE DESIGN PRINCIPLES

One fixed core. **Everything else** may move.

A bootcamp can take many shapes: four hours or two days, on campus or online, for first-year students or for people who already run a project. None of that has to be the same twice. What has to hold every time is a small set of principles that make it an Ethical Engineer Bootcamp rather than just another hackathon.

This block holds the fixed part: the few principles a bootcamp keeps whatever the room, the host or the students look like. The next block holds the open part.



CONNECTS TO

1.2 Our objective

1.3 Success

1.4 Core principles

1.5 Open choices

Draws on the objective and the success criteria; sets the boundary for 1.5 and for every Set-Up Canvas in Step 2.

WHERE IT SITS ON THE CANVAS

1.1 What is given?	1.2 Our objective	1.4 Core design principles
	1.3 What is success for us?	1.5 Open design choices

Running several bootcamps? Agree these once, together with all hosts. They are what makes your bootcamps comparable.

Every bootcamp has a handful of non-negotiables: the things that make it an Ethical Engineer Bootcamp rather than just another hackathon. Naming them early protects the concept when time, budget or a host's habits push in another direction.

Keep the list short. Three to six principles are enough; everything else is an open choice you will settle in Step 2 and Step 3.

Write each principle as something you could defend in one sentence. If you cannot say why it matters, it is probably a preference, not a principle.

GUIDING QUESTIONS

What makes this an Ethical Engineer Bootcamp and not just a hackathon?

Which elements would we defend even if a host asked to drop them?

What has to be the same everywhere for our results to be comparable?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Hackathon-style, challenge-based format

Interdisciplinary teams: engineering + social and political sciences

Companies or external stakeholders bring the challenge

Ethical or responsible solutions are the expected outcome

A responsible-AI checkpoint built into the process

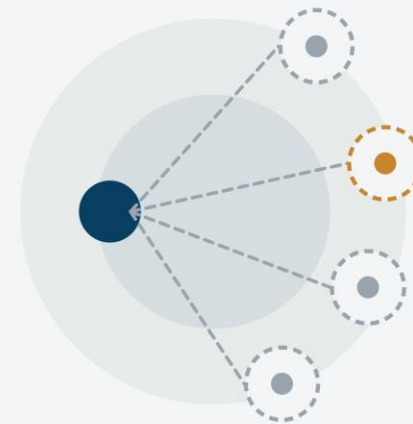
Flexible design: the format adapts to the host

FRAMING CANVAS · OPEN DESIGN CHOICES

Leave room **on purpose**.

A bootcamp can be a four-hour workshop for Master students, a whole day open to anyone, or two half-days online for people who already have an idea. Each is an Ethical Engineer Bootcamp, as long as it was agreed in advance which choices belong to the people running it and which do not.

An open choice is not an undecided one. It is a decision handed, deliberately, to whoever knows the context best, with the fixed principles as its limits. This block lists those hand-overs, and it completes the Framing Canvas.



CONNECTS TO

1.4 Core principles

1.5 Open choices

2.2 Duration & timing

3.5 Challenge design

Bounded by 1.4; every item here is answered by a block on the Set-Up or Design Canvas.

WHERE IT SITS ON THE CANVAS

1.1 What is given?	1.2 Our objective	1.4 Core design principles
	1.3 What is success for us?	1.5 Open design choices

Running several bootcamps? In a series, every host answers these for itself on its own Set-Up and Design Canvases.

Open choices are not things you forgot to decide. They are decisions you are handing to the people who know the context: the host, the faculty, the partner, the students who turn up.

Listing them explicitly matters for two reasons. It tells a host what it is free to change without breaking the concept, and it gives Steps 2 and 3 their agenda, because every open choice here becomes a block to fill there.

If an item keeps sliding between fixed and open, decide it now. Ambiguity at this stage returns as an argument on the day of the bootcamp.

GUIDING QUESTIONS

Which decisions depend on the host, the venue or the participants?

What do we want different hosts to be free to do differently?

Which open choices will Step 2 and Step 3 have to settle?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Hackathon style: classic
hackathon or workshop-
driven

Topic or challenge

Overall duration: hours, a
day, two half-days

Single event or multiple
sessions

Face-to-face, online or
hybrid

Student level, and whether
non-students may join

WORKING WITH THE FRAMING CANVAS

**The blocks are for thinking.
The canvas is for deciding.**

Fill in the Framing Canvas in one sitting, with everyone who will have to live with the answers.

Write

Cluster

Decide

How to fill in the Framing Canvas

Work through the blocks in order. Write on sticky notes, one thought per note, so you can move and regroup them.

1.1 What is given? 1	1.2 Our objective 2	1.4 Core design principles 4
	1.3 What is success for us? 3	1.5 Open design choices 5

DONE WHEN

- ☐ The objective fits in one sentence and everyone can repeat it.
- ☐ Every success criterion has a way of being observed or counted.
- ☐ The list of fixed principles is short enough to print on a badge.
- ☐ Nothing on the open list contradicts a fixed principle.

- 1 1.1 What is given?** 15 min
List everything you cannot change: funder rules, curriculum slots, faculty calendar, budget, partner commitments. Be concrete.
- 2 1.2 Our objective** 20 min
One sentence on why you run it and what should be different afterwards, for students, for the faculty, for partners.
- 3 1.3 What is success for us?** 20 min
Signs and numbers you would accept as proof: participation, feedback, outputs, follow-up. Aim for five to seven.
- 4 1.4 Core design principles** 25 min
Your non-negotiables. Three to six. Test each one: would we defend it if a host asked to drop it?
- 5 1.5 Open design choices** 15 min
Everything you deliberately leave to context: format, duration, topic, level, partners. These feed Steps 2 and 3.

FACILITATION TIPS

- Fill 1.1 silently first, each person on their own notes, then cluster. It surfaces constraints people assume others know.
- For 1.4 and 1.5, sort the sticky notes physically into two columns: fixed and open. Argue about the ones in the middle.
- In a series, invite every host to this session. Principles agreed in absence get renegotiated later.

Filled in: the Ethical Engineer series

The Framing Canvas as the partners completed it at the co-creation workshop in June 2025, before the first pilot bootcamp.

1.1 What is given? Hackathon style Students from engineering, social and political sciences Companies / external stakeholder integration 3 bootcamps, 1 of which online Ethical / responsible solutions and strategies Interdisciplinary	1.2 Our objective Opening students' minds to new possibilities of responsible AI	1.4 Core design principles Interdisciplinary teams Hackathon-style process Flexible approaches to bootcamp design Responsible AI as the outcome
	1.3 What is success for us? 90 % of participants would recommend the bootcamp At least 4 of 5 teams still working at the final pitch Every team can name who its system might harm Two partner companies ask to bring a challenge next year One team idea continues after the bootcamp All three bootcamps run by the end of June	1.5 Open design choices Hackathon style: classic vs. workshop-driven Topic / challenge Overall duration Single event vs. multiple Face-to-face, online or hybrid Student level: Bachelor, Master Non-HE participants welcome

Reading the example

Four things to notice in the canvas, and what they tell you about your own.

1.1 What is given? 1	1.2 Our objective 2	1.4 Core design principles
	1.3 What is success for us? 3	1.5 Open design choices 4

1 In the Ethical Engineer project, the givens came from the proposal

A funded project fixes a lot: three bootcamps, one online, interdisciplinary teams. Your givens will come from a curriculum, a faculty calendar or a partner agreement. Write them down all the same.

2 One objective, one sentence

Reproducibility was the whole point of the series, so it is the only note in the block. Resist adding a second objective; put it under success criteria instead.

3 Success mixes signs and numbers

Positive feedback and active participation sit next to a hard deadline. Both kinds are needed: the numbers to report, the signs to know whether it worked.

4 The open choices became Step 2

Format, duration, topic and student level were left open on purpose. Each host then answered them on its own Set-Up Canvas, which is how a series stays comparable and local at the same time.

2

STEP 2

Bootcamp contexts and operational set-up

Set-Up Canvas

What does this bootcamp look like: where, when, with whom, with what?

Filled once per bootcamp by the local host team, with the faculty and partners. Two to three hours.

THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

BUILDING BLOCKS IN THIS STEP

2.1	Bootcamp objective	32	2.6	Key stakeholders & support	42
2.2	Duration & timing	34	2.7	Available resources	44
2.3	Location	36	2.8	Opportunities	46
2.4	Participant profile & entry level	38	2.9	Risks / constraints	48
2.5	Incentives & recruitment	40			

The Set-Up Canvas

What does this bootcamp look like: where, when, with whom, with what?

2.1 Bootcamp objective <i>What this particular bootcamp should achieve</i>	2.2 Duration & timing <i>How long, when in the year, one day or several</i>	2.3 Location <i>Campus, company, online: where it happens</i>
2.4 Participant profile & entry level <i>Who takes part: level, disciplines, language</i>	2.5 Incentives & recruitment <i>Why they come, and how you find them</i>	2.6 Key stakeholders & support <i>Faculty, organisers, mentors, companies, associations</i>
2.7 Available resources <i>Rooms, platforms, budget, catering, networks</i>	2.8 Opportunities <i>What this bootcamp could open up</i>	2.9 Risks / constraints <i>What could go wrong, what limits you</i>

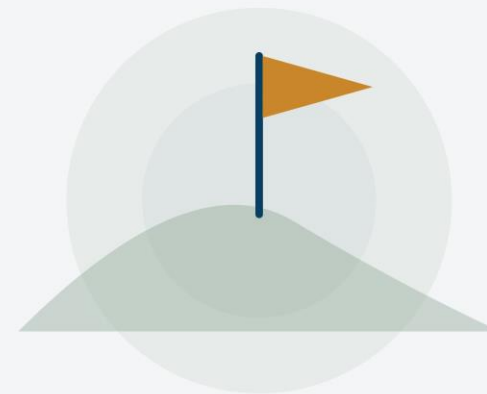
Numbers show the recommended order of filling in.

SET-UP CANVAS • BOOTCAMP OBJECTIVE

The same idea, **in this room.**

The Framing Canvas says why the bootcamp exists. The Set-Up Canvas begins by asking what this one event, in this building, with these people, is for. One host may want ethical reasoning to become part of how its engineers think; another may want students to meet the ethical requirements of their own projects; a third may want idea owners to look at their ideas differently.

Each of these is an event objective under a shared one. The difference between them is scope, and naming it honestly is the first act of setting up a bootcamp.



CONNECTS TO

1.2 Our objective

2.1 Bootcamp objective

2.4 Participants

3.2 Learning objectives

Sits under the shared objective in 1.2; decides who should be in the room (2.4) and what they should learn (3.2).

WHERE IT SITS ON THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

Running several bootcamps? Each host writes its own. It must fit under the shared objective from Step 1, not replace it.

Step 1 said why the series exists. This block says what this one event, in this place, with these people, is for. The two are related but not the same: a series may aim at educating students across an entire university while a single bootcamp aims at twenty Master students who leave able to argue an ethical case.

Keep it to one or two sentences, and keep it honest about scope. A four-hour workshop will not produce market-ready products; it can produce a well-argued idea.

Write it for the host's own stakeholders. The dean, the partner company and the students should all recognise something for themselves in it.

GUIDING QUESTIONS

What should participants be able to do when they leave this bootcamp?

What does the host institution get out of it?

How does it serve the shared objective from Step 1 without repeating it?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Basic ethical principles applied in engineering thinking and reasoning

Empower students to fulfil project requirements ethically

Help existing idea owners consider ethical requirements

Teach students to implement AI in engineering disciplines ethically

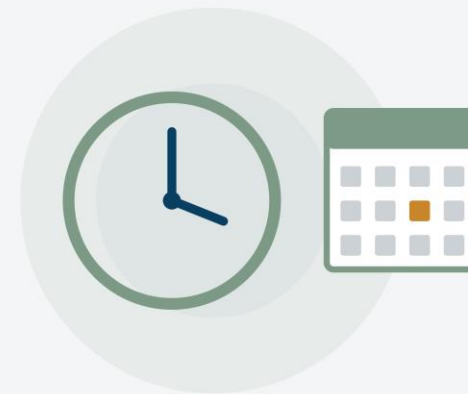
Open students' minds to new possibilities

SET-UP CANVAS · DURATION & TIMING

Time is the **first design material**.

Four hours, one day or two half-days: whichever you choose, every other decision follows from it. How deep a challenge can go, how many mentoring rounds fit, whether teams can prototype or only sketch, all of it is a function of the hours available.

Timing is the second half of the question. The academic calendar has weeks when no student will come and weeks when every room is taken. This block fixes the clock before the pedagogy, so that the design fits the time rather than the other way round.



CONNECTS TO

1.5 Open choices

2.2 Duration & timing

3.8 Agenda

4.1 Before the event

An open choice from 1.5; sets the frame for the agenda in 3.8 and the countdown in 4.1.

WHERE IT SITS ON THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

Duration decides almost everything downstream: how deep the challenge can go, how many mentoring rounds fit, whether teams can prototype or only sketch. Decide it here, before the pedagogy, and design to it rather than around it.

Timing is about the academic calendar and about energy. A bootcamp in exam weeks will be empty; one in the first weeks of term has no teams yet. Mid-semester, on a weekday students already spend on campus, is usually safest.

If the format is online, think in half-days. Screen attention does not survive a full day, and two shorter sessions with a gap allow teams to work in between.

GUIDING QUESTIONS

How many hours of real working time do we have, once welcome and pitches are taken out?

Which weeks are impossible for students, mentors or rooms?

One long day, two half-days, or a series of sessions?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

One whole day, 10:00 to 16:00

Four-hour workshops, April to June

Two online half-days, 11:00 to 16:00, one week apart

Avoid exam periods and the first two weeks of term

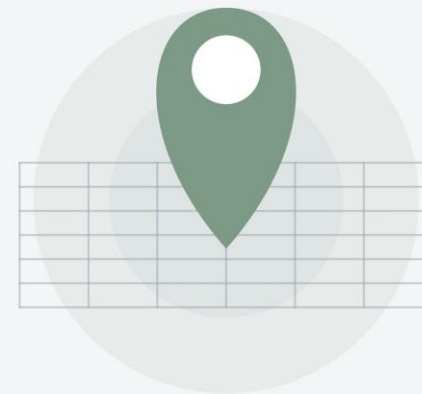
A weekday students are on campus anyway

Build in a break: fatigue shows after 90 minutes

SET-UP CANVAS • LOCATION

Rooms teach. Choose one that lets people move.

A tiered lecture theatre produces an audience; a flat room with tables you can push together produces teams. A faculty room with wifi and wall space, a campus hall with a video link for remote mentors, or an online room built out of breakout spaces and a shared whiteboard: none of these is better than the others, but each shapes what people will do in it. This block treats the venue, physical or virtual, as part of the learning design rather than a booking.



CONNECTS TO

2.2 Duration & timing

2.3 Location

2.7 Resources

3.10 Tools & platforms

Depends on the format chosen in 2.2; determines what resources (2.7) and tools (3.10) are available.

WHERE IT SITS ON THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

The room shapes the behaviour. Lecture theatres produce audiences; flat rooms with movable tables produce teams. If the only room available is tiered, plan to use the corridor and the foyer for team work.

A company venue signals seriousness and gives the challenge a face, at the cost of travel and access rules. A campus venue is easier, and familiarity helps first-time participants.

Online is a location too, with its own layout: a main room, breakout rooms per team, a shared whiteboard that everyone can reach, and one channel where mentors can be found.

GUIDING QUESTIONS

Can teams sit together, stand up, and stick things on walls?

Who can get there easily, and who cannot?

If online: which platform, which breakout structure, which shared board?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMP

Faculty building on campus,
flat room with movable
tables

Campus rooms plus Zoom
for remote mentors

Online on Zoom, breakout
rooms per team, shared
whiteboard

A company site for the
challenge briefing and the
pitch

Wall space for canvases and
sticky notes

Reliable wifi and power for
every table

SET-UP CANVAS · PARTICIPANT PROFILE & ENTRY LEVEL

Who is in the room **decides** **what happens** in it.

Master students from informatics, engineering and management with teachers as a separate group; Bachelor students of any discipline with no AI knowledge required; participants who already have an idea to work on: each profile changes the challenge, the pace and the language of the day.

The interdisciplinary principle from Step 1 becomes concrete here: which disciplines, at which level, in which proportion, and what a participant must already know, or explicitly need not.



CONNECTS TO

1.4 Core principles

2.4 Participants

2.5 Recruitment

3.6 Team composition

Applies the interdisciplinary principle; drives recruitment (2.5) and team composition (3.6).

WHERE IT SITS ON THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

Running several bootcamps? The shared principle is interdisciplinary teams. What that means locally is decided here.

Decide who the bootcamp is for before you decide how to attract them. Level matters less than mix: a room of first-year computer scientists and a room of Master students in management need different challenges, but a room with both needs a better one.

Be explicit about entry requirements and equally explicit about what is not required. "No prior AI knowledge needed" opens the door to the social science students the principles ask for.

Language is a design decision, not an afterthought. If the working language is English at B1 or B2, mentors and materials must work at that level too.

GUIDING QUESTIONS

Which disciplines and levels do we want in the room, and in what proportion?

What must participants already know, and what must they not need to know?

Which language, at which level, for materials, mentors and pitches?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Master students, first year,
mixed AI proficiency, English
B1–B2

Bachelor level,
multidisciplinary, no prior AI
knowledge required

Idea owners who already
bring a project

Computer science, electrical
and biomedical engineering,
management, teacher
training

Teachers of engineering and
management courses as a
separate group

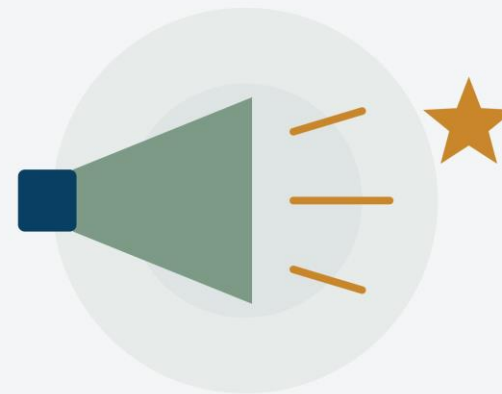
Students from higher
education and vocational
institutions alike

SET-UP CANVAS · INCENTIVES & RECRUITMENT

Nobody comes for the **good** of their education.

Students come because a lecturer they respect asked them to, because it counts for something, because a friend is going, or because there is a prize. Use all four: a certificate of competence, a topic that promises something employers ask about, follow-up opportunities for the best teams, or simply the chance to work in a team on an idea one cares about.

This block joins two questions that are usually kept apart, why someone would come and how they will hear about it, because an incentive nobody hears of recruits nobody.



CONNECTS TO

2.4 Participants

2.5 Recruitment

2.6 Stakeholders

4.1 Before the event

Aimed at the profile in 2.4; runs through the multipliers in 2.6; becomes tasks in 4.1.

WHERE IT SITS ON THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

Students do not come just because a bootcamp is good for them. They come because a lecturer they trust asked, because it counts for something, because a friend is going, or because there is a prize. Plan for all four.

Recognition is the cheapest incentive and the most durable: a certificate of competence, credit within a course, a line on the CV, a photo with the jury. Money and prizes work, but make the event about the prize.

Recruit through people, not posters. One announcement in a course by a lecturer beats a week of social media. Ask student associations to bring a team, and give early registrants a reason to confirm.

GUIDING QUESTIONS

What does a participant get that they could not get elsewhere?

Who will personally ask students to come?

How will we know six weeks ahead whether enough people are coming?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Certificate of participation
or competence

Improved skills in linking
ethics to the legal
framework: AI Act, MDR,
NIS2

Winner prize and one or two
follow-up opportunities

Recruitment through a hot-
topic course that pushes
ideas forward

Broad invitation through
partner universities and
multipliers

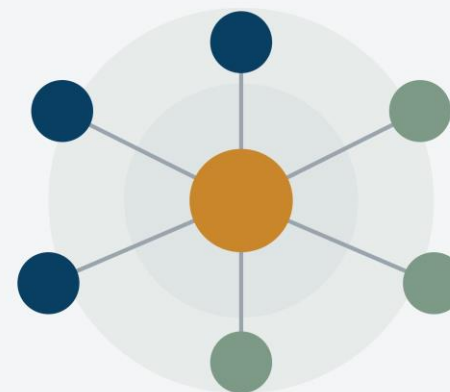
New team building for idea
owners looking for co-
founders

SET-UP CANVAS · KEY STAKEHOLDERS & SUPPORT

Write **names**, not categories.

A faculty dean, a research institute, a national AI centre, a professional society, a partner university, the companies that will sit on the jury: list them by name, not by category. Nobody writes "industry" or "the university" on this block. A stakeholder is someone who can be called on a Tuesday afternoon.

This block maps three kinds of support a bootcamp cannot do without: institutional cover, hands on the day, and the partners who make the challenge real, plus the multipliers who carry the invitation further than the host can.



CONNECTS TO

1.4 Core principles

2.6 Stakeholders

3.5 Challenge design

3.9 Mentoring

Realises the industry principle; the partners named here bring the challenge (3.5) and staff the mentoring (3.9).

WHERE IT SITS ON THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

Running several bootcamps? Industry involvement is a shared principle; who exactly is involved is decided here.

A bootcamp needs three kinds of support: institutional cover (a faculty or department that owns it), operational hands (people who book rooms, send emails and stand at the door), and content partners (companies, experts and mentors who make the challenge real).

Map them by name, not by category. "Industry" is not a stakeholder; a named contact at a named company who has agreed to bring a challenge is.

Include the multipliers: student associations, professional societies, national centres. They cost nothing, they recruit, and they are your route to running the bootcamp again.

GUIDING QUESTIONS

Which faculty or department owns this bootcamp, formally?

Which companies or experts will bring challenges and sit on the jury?

Who recruits, and who can spread the word beyond our own institution?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Faculty of Biomedical Engineering and the Masaryk Institute of Advanced Studies

Czech Society for Biomedical Engineering and Medical Informatics

Czech Institute of Informatics, Robotics and Cybernetics; National Centre of Industry 4.0

Project staff and institutional multipliers, RSU as partner university

Industry partners on the jury, entrepreneurship coaches with the teams

Partner universities as multipliers for an international group

SET-UP CANVAS · AVAILABLE RESOURCES

Count what you **actually have**.

Rooms, wifi and a project team as mentors; rooms, a video link and an event budget; a video platform, digital whiteboards and an AI tool set up for the day. Most bootcamps run on modest lists, and modest lists honestly made are enough.

The resource most often missing from such lists is mentors, and it is the one that decides whether teams work or wait. This block asks for an inventory of what is confirmed rather than hoped for, including the hours of the organising team, which the countdown in Chapter 3 will consume faster than anyone expects.



CONNECTS TO

2.3 Location

2.7 Resources

3.9 Mentoring

3.10 Tools & platforms

Follows from the location in 2.3; sets the limits for the mentoring model (3.9) and the tools (3.10).

WHERE IT SITS ON THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

List what you actually have, not what you would like. Rooms with wifi and power, a video platform with breakout rooms, a budget for lunch and prizes, printing, a team of mentors who have said yes.

Mentors are the scarcest resource and the one most often forgotten. Count them, and divide by the number of teams; fewer than one mentor for two teams means teams will wait.

Do the same for time. The organising team's hours before the event are a resource like any other, and the countdown in Chapter 3 will consume most of them.

GUIDING QUESTIONS

Which rooms, platforms and equipment are confirmed, not just possible?

How many mentors, for how many teams, for how long?

What budget is there for catering, prizes, printing and travel?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Rooms provided by the faculty, LAN and wifi

The project team as mentors

Lecture rooms plus Zoom for remote participation

Event budget for catering and prizes

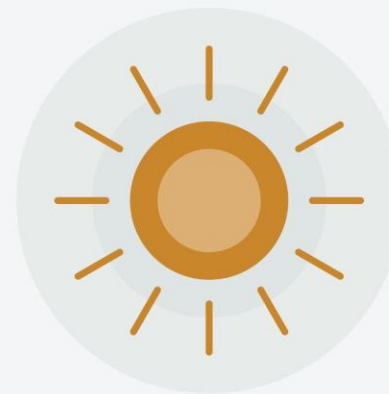
Zoom, digital whiteboards, a custom GPT and NotebookLM

The Ethical Engineer case studies and open educational resources

SET-UP CANVAS · OPPORTUNITIES

What could this **set in motion**?

Beyond the objective, every host hopes for something more: future-ready competences, more collaboration across faculties, real solutions that a company would take further, ideas built fair from the start. Opportunities are not promises. They are the reasons to design a follow-up slot, invite the company to the dinner, or keep the teams' contact details. Written down, they also carry the organising team through week eight of the countdown, when the reasons for all the work are easy to forget.



CONNECTS TO

2.1 Bootcamp objective

2.6 Stakeholders

2.8 Opportunities

4.3 After the event

Extends the event objective; gives partners in 2.6 a reason; becomes follow-up tasks in 4.3.

WHERE IT SITS ON THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

Opportunities are the reasons beyond the objective: what the bootcamp might set in motion if it goes well. A new course, a partnership with a company, a student project that continues, a story the faculty can tell.

Write them down so that you design for them. If continuation of the best ideas is an opportunity, plan a follow-up slot now; if a new partnership is, invite the company to the pitch and the dinner.

Opportunities also keep the team going through the countdown. They are the answer to "why are we doing all this?" on week eight.

GUIDING QUESTIONS

What could this bootcamp start that would outlive it?

Which relationships could it create or deepen?

What would we do differently if we knew it would succeed?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Future-ready competences:
critical thinking and ethical
reflection

Better preparation for real-
world AI deployment

Increased interdisciplinary
collaboration across
faculties

Real-life solutions for
companies, with follow-up

Empowering students to
take an idea further

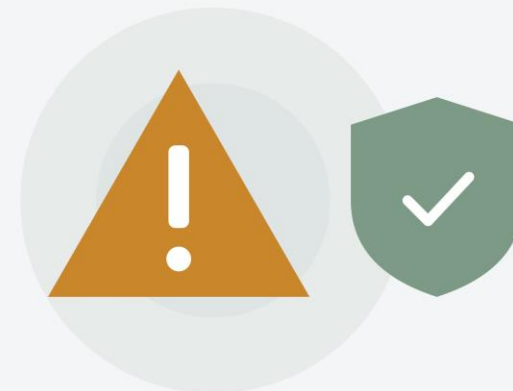
Building fairness into an
idea from the start

SET-UP CANVAS · RISKS / CONSTRAINTS

Name the **three ways it fails**.

Not enough people, not enough engagement, not enough time: almost every host names the same three risks in different words. Behind them sit subtler ones: a challenge too abstract, complex problems oversimplified, no-shows and wishful numbers, technical failures, unfairness between newcomers and established teams.

A risk written next to what you will do about it is a plan. The constraints are the givens from Step 1, seen from the host's side of the table.



CONNECTS TO

1.1 What is given?

2.5 Recruitment

2.9 Risks / constraints

3.5 Challenge design

Inherits the givens from 1.1; most risks turn out to be recruitment (2.5) or challenge design (3.5) in disguise.

WHERE IT SITS ON THE CANVAS

2.1 Bootcamp objective	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry level	2.5 Incentives & recruitment	2.6 Key stakeholders & support
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints

Every bootcamp has at least three risks: not enough people, not enough engagement, not enough time. Name the ones that apply to you and write next to each what you will do about it.

The subtler risks are pedagogical. A challenge too abstract produces essays; one too narrow produces one obvious answer. Ethics done in a hurry becomes a checklist ticked without thought, which is the opposite of the point.

Constraints are the givens from Step 1 seen from the host's side: the rules, dates and limits this event has to live with.

GUIDING QUESTIONS

What is most likely to go wrong, and what would we do that morning?

How could the ethical content be trivialised, and how do we prevent it?

Which constraints from Step 1 bite hardest here?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Too abstract or theoretical a course

Low engagement, or no-shows and people leaving early

Oversimplifying complex socio-technical problems

Too little time to explore the relevant topics

Few registrations, wishful thinking about numbers

Technical problems online; fairness between new and established teams

WORKING WITH THE SET-UP CANVAS

One bootcamp, one page.

The Set-Up Canvas is a portrait of this event: where, when, with whom, with what. Fill it with the people who will run it.

Name

Date

Confirm

How to fill in the Set-Up Canvas

Work through the blocks in order. One thought per sticky note.

2.1 Bootcamp objective	1	2.2 Duration & timing	2	2.3 Location	3
2.4 Participant profile & entry level	4	2.5 Incentives & recruitment	5	2.6 Key stakeholders & support	6
2.7 Available resources	7	2.8 Opportunities	8	2.9 Risks / constraints	9

DONE WHEN

- ☐ Date, duration and venue are fixed and written down.
- ☐ Every stakeholder note carries a name and a contact.
- ☐ There is at least one mentor for every two teams.

FACILITATION TIPS

- Fill this canvas with the local host team; bring one partner and one student if you can.
- Put names on the stakeholder notes. Categories do not book rooms or bring challenges.
- Read 2.9 against 2.4 and 2.5: most risks are recruitment risks in disguise.

- 1 **2.1 Bootcamp objective** 10 min
One or two sentences for this event, under the shared objective from Step 1.
- 2 **2.2 Duration & timing** 10 min
Hours of real working time, the week, the day, one session or several.
- 3 **2.3 Location** 5 min
Room or platform; can teams work, stand and stick things on walls?
- 4 **2.4 Participant profile & entry level** 15 min
Disciplines, level, proportions, language; what is required and what is not.
- 5 **2.5 Incentives & recruitment** 10 min
Why they come and who asks them personally; how you track numbers.
- 6 **2.6 Key stakeholders & support** 15 min
Named owners, hands and content partners; multipliers.
- 7 **2.7 Available resources** 10 min
What is confirmed: rooms, platforms, budget, mentors per team.
- 8 **2.8 Opportunities** 10 min
What the bootcamp could start beyond its objective.
- 9 **2.9 Risks / constraints** 15 min
What could go wrong and what you will do; the constraints that bite.

Filled in: the CVUT bootcamp, Prague

The Set-Up Canvas as the Czech Technical University team completed it at the co-creation workshop, June 2025.

2.1 Bootcamp objective Basic ethical principles implemented in engineering thinking and reasoning Help existing idea owners consider ethical requirements	2.2 Duration & timing April to June 2026 Each workshop 4 hours	2.3 Location Online via Zoom Faculty rooms
2.4 Participant profile & entry level Master students, 1st year: computer science, electrical and biomedical engineering, management, teacher training; English B1–B2 Teachers of engineering and management courses, various AI proficiency; separate groups	2.5 Incentives & recruitment Improvement of skills and competences, students and teachers New information linking ethics with the legal framework: EU AI Act, MDR, NIS2 Contribution to knowledge of responsible and robust AI implementation	2.6 Key stakeholders & support Faculty of Biomedical Engineering Masaryk Institute of Advanced Studies Czech Society for Biomedical Engineering and Medical Informatics CTU Czech Institute of Informatics, Robotics and Cybernetics National Centre of Industry 4.0
2.7 Available resources Rooms provided by CTU, LAN and wifi Mentors = the CTU team of Ethical Engineer	2.8 Opportunities Future-ready competences Stronger critical thinking and ethical reflection Better preparation for real-world AI deployment Increased interdisciplinary collaboration	2.9 Risks / constraints Too abstract or theoretical course Risk of low engagement Oversimplifying complex socio-technical problems Limited time preventing deeper exploration

Reading the example

What the Prague set-up shows about turning a shared frame into one concrete event.

2.1 Bootcamp objective 1	2.2 Duration & timing	2.3 Location
2.4 Participant profile & entry 2	2.5 Incentives & recruitment	2.6 Key stakeholders & support 3
2.7 Available resources	2.8 Opportunities	2.9 Risks / constraints 4

1 The event objective is narrower than the series objective

The series was more general; CVUT specifically wants ethical reasoning in engineering thinking. One sits under the other. Both are needed, and neither replaces the other.

2 Two audiences, two groups

Students and teachers were both in scope but not in the same room. Separate groups for different audiences are a legitimate answer to the interdisciplinary principle, as long as each group is itself mixed.

3 Stakeholders have names

Faculties, institutes and a national centre are listed, not "industry" or "the university". Each note is someone who can be called. That is what makes the block useful in week eight of the countdown.

4 The risks are pedagogical, not logistical

CVUT worried about abstraction, oversimplification and time, not about rooms. That focus shaped its Design Canvas: realistic problems from case studies and a defined central line with distributed mentoring.

3

STEP 3

Bootcamp pedagogical and organisational design

Design Canvas

How will participants learn, work and be assessed?

Filled once per bootcamp, six to eight weeks ahead, with a learning designer, a mentor and one partner at the table. Half a day.

THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

BUILDING BLOCKS IN THIS STEP

3.1 Pedagogical principles	56	3.6 Team composition	66
3.2 Learning objectives & outcomes	58	3.7 Checkpoint: responsible AI integration	68
3.3 Teaching & learning activities	60	3.8 Bootcamp agenda	70
3.4 Assessment	62	3.9 Mentoring / facilitation model	72
3.5 Challenge design	64	3.10 Tools, materials, platforms	74

The Design Canvas

How will participants learn, work and be assessed?

3.1 Pedagogical principles <i>How people learn here</i> 1	3.2 Learning objectives & outcomes <i>What participants can do afterwards</i> 2	3.3 Teaching & learning activities <i>What happens, in which order</i> 3	3.4 Assessment <i>By whom, on what criteria, team or individual</i> 4
ALIGNMENT CHECK · do objectives, activities and assessment fit together?			
3.5 Challenge design <i>What kind of challenge teams work on</i> 5	3.6 Team composition <i>Sign-up, size, disciplinary mix, roles</i> 6	3.7 Checkpoint: responsible AI <i>Is responsible AI really built in? Review and revise</i> 7	3.8 Bootcamp agenda <i>The programme, block by block</i> 8
3.9 Mentoring / facilitation model <i>Who supports whom, when and how</i> 9		3.10 Tools, materials, platforms <i>Collaboration, AI tools, templates, canvases</i> 10	

Numbers show the recommended order of filling in.

DESIGN CANVAS · PEDAGOGICAL PRINCIPLES

Say how people **learn here** before you plan the day.

Project-based learning, scenario-based learning, debating past failures, working across disciplines: hosts choose different words for the same family of ideas. What matters is that the principles come first and the agenda later. A day designed the other way round ends up as a sequence of talks with a pitch at the end, and everyone in the room feels that something is missing without being able to say what.

This block asks for three or four beliefs, each visible somewhere in the agenda.



CONNECTS TO

[1.4 Core principles](#)[3.1 Pedagogical principles](#)[3.3 Activities](#)[3.8 Agenda](#)

Applies the challenge-based principle from 1.4; every principle should show in the activities (3.3) and the agenda (3.8).

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

Running several bootcamps? Challenge-based, interdisciplinary and reflective are shared principles. The rest is the host's choice.

Principles are the reasons behind every other choice on this canvas. Say them out loud before you design the agenda, because an agenda that contradicts them will feel wrong on the day without anyone knowing why.

Three usually carry a bootcamp: learning by working on a real challenge, learning across disciplines by having to explain yourself to someone who thinks differently, and learning by reflecting on what you did. Add scenario thinking if ethics is the point: what happens when the system works perfectly, and when it fails.

Keep the list to three or four. Principles that are not visible in the activities are decoration.

GUIDING QUESTIONS

What kind of learning do we believe in for this topic, and why?

Which principle would be violated by a lecture-heavy day?

Where in the agenda would a visitor see each principle at work?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Project-based learning on a realistic problem

Discussing dilemmas and debating decision choices, including past failures

Interdisciplinary team work: explaining your reasoning to another discipline

Scenario-based learning: no limits versus extreme limits

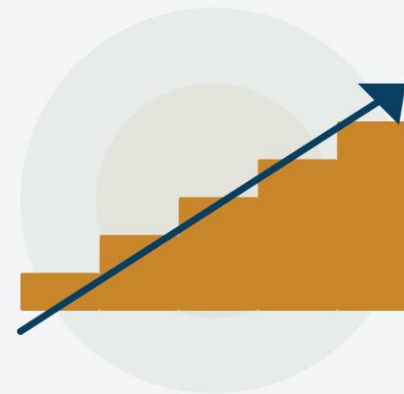
Experiential learning: build, test, argue, revise

Reflective practice: a debrief that is part of the programme, not an add-on

DESIGN CANVAS · LEARNING OBJECTIVES & OUTCOMES

Verbs, not awareness.

Write the objectives as a journey: understand the ethical limitations, analyse your own idea against them, create scenarios, weigh benefits and sacrifices, improve the idea. Five verbs like these can later become the stages of the day and the frames on the whiteboard. An objective written as something a participant can do at the end is teachable and assessable; one written as awareness is neither. This block sets the verbs.



CONNECTS TO

2.1 Bootcamp objective

3.2 Learning objectives

3.3 Activities

3.4 Assessment

Derived from the event objective in 2.1; the alignment check ties each verb to an activity (3.3) and a criterion (3.4).

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

Objectives describe what a participant can do at the end that they could not do in the morning. Write them as verbs: spot, analyse, argue, create, decide. "Awareness of AI ethics" is not an outcome; "can identify who benefits and who is harmed by a given AI system" is.

The Ethical Engineer bootcamps settled on a five-step ethical reasoning journey: understand the ethical limitations in general, analyse your own idea against them, create scenarios with no limits and with extreme limits, weigh the benefits and sacrifices, and improve the idea to reach the benefits. It doubles as the backbone of the agenda.

Three to five objectives are enough for one day. Each one needs a place in the assessment, or it will not be taken seriously.

GUIDING QUESTIONS

What should a participant be able to do afterwards that they could not do before?

Which of these can we see or hear in the final pitch?

Do the objectives cover both the ethical reasoning and the engineering work?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Deeper understanding of the ethical problems of AI

Critical awareness of AI risks in one's own field

A mental map of the principles of AI ethics

Analyse one's own idea in the light of ethical limitations

Create scenarios and weigh benefits against sacrifices

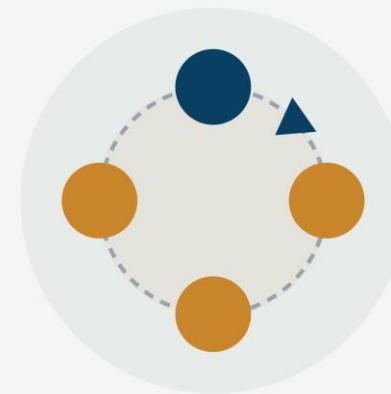
Improve an idea so that it reaches the benefits responsibly

DESIGN CANVAS · TEACHING & LEARNING ACTIVITIES

Input, work, feedback, **reflection.** In that order.

Most bootcamp days are built from the same handful of activities: a short expert input, a challenge briefing, blocks of team work with mentors within reach, a moment of review, pitches, and a debrief. The differences are in order and dose. Some hosts open with an AI-based ethics quiz to wake the room up; some make the check-in mandatory; others keep the introductory presentation short and the work blocks long.

This block is about sequencing those pieces so that feedback arrives while teams can still act on it.



CONNECTS TO

[3.1 Pedagogical principles](#)[3.2 Learning objectives](#)[3.3 Activities](#)[3.8 Agenda](#)

Carries the principles and the objectives into the day; the agenda in 3.8 gives each activity its minutes.

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

Activities are the building blocks of the day: the short expert input that gives vocabulary, the challenge briefing that gives the problem, team work in stages, mentoring rounds, a mid-point review, the pitch, and a debrief.

Order matters. Input before work, or teams will reinvent the basics; a review before the second work block, or the pitch will show what could have been fixed; reflection after the pitch, when people can still feel what happened.

Keep inputs short. Twenty minutes of a good expert beats an hour of a lecture, and the expert stays for the mentoring round.

GUIDING QUESTIONS

Which activities carry which learning objective?

Where does input stop and team work begin, and how often do we switch?

When do teams get feedback they can still act on?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Introductory presentation, then task formulation and team work

Expert input, team discussions, reflection, pitch, coaching

Peer and mentor feedback before the final pitch

A self-paced work block with mentors available on request

A mandatory check-in in the middle of the day

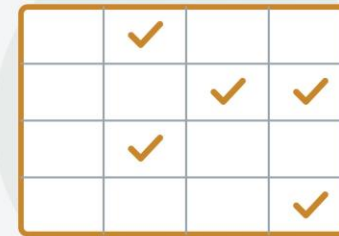
A GPT-based ethics self-tutor or quiz as a warm-up

DESIGN CANVAS · ASSESSMENT

What the jury asks is **what the day was about.**

If the jury only asks about the technology, the ethics was decoration, whatever the agenda said. Judge teams on their advancement in understanding the ethical limitations of their own idea, at team level, with a documented presentation mandatory and the oral one optional, or combine a jury score with final comments from the mentors who watched the teams work.

This block decides who judges, on what, and whether anything has to count for credit. It is where the ethical reasoning gets its weight.



CONNECTS TO

1.3 Success

3.2 Learning objectives

3.4 Assessment

3.7 Checkpoint

Turns the success criteria (1.3) and the objectives (3.2) into a score; the checkpoint in 3.7 is its rehearsal.

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

Running several bootcamps? The shared principle: responsible AI is assessed, not just the product. The criteria are local.

Assessment tells participants what the bootcamp values. If the jury only asks about the technology, the ethics was decoration. Put the ethical reasoning into the criteria, weighted, and say so at the start of the day.

Decide who assesses: a jury of experts and partners, the mentors, the peers, the lecturers, or a mix. A jury brings seriousness; peers bring attention to other teams' work; mentors know what each team went through.

Team-level assessment fits a one-day event. If the bootcamp counts towards a course, add an individual reflection afterwards, so that credit is tied to a person.

GUIDING QUESTIONS

What exactly will be judged: the idea, the process, the ethical reasoning, the pitch?

Who judges, and do they know the criteria before the day?

Team or individual, and does anything have to count for credit?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Team-based assessment plus final comments from mentors

Jury-based, at team level, with partners on the jury

Oral presentation optional, documented presentation mandatory

Criterion: advancement in understanding the ethical limitations of the idea

Peer evaluation alongside expert evaluation

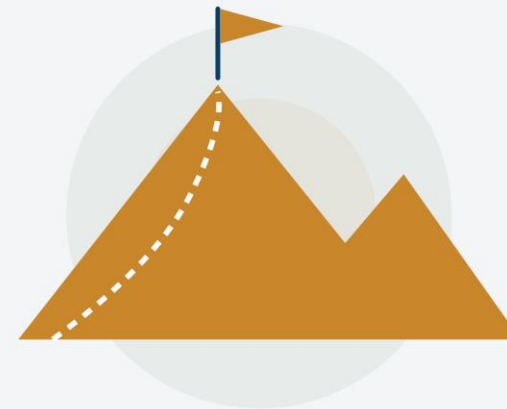
Pitches in parallel for new ideas and established teams

DESIGN CANVAS · CHALLENGE DESIGN

Real enough to matter, **small enough to move.**

Draw realistic problems from published case studies, ask companies for domain scenario cards, or have participants bring their own ideas for ethical improvement. Three answers to the same problem: a challenge has to carry a real ethical tension, give an engineer, a social scientist and a business student each a way in, and still allow progress in a few hours.

The industry principle from Step 1 lands here, in a one-page brief that a mentor can read in five minutes.



CONNECTS TO

1.4 Core principles

2.6 Stakeholders

3.5 Challenge design

3.7 Checkpoint

Delivers the real-world principle through the partners in 2.6; the checkpoint (3.7) tests every team's answer to it.

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

Running several bootcamps? Real-world challenges from external partners are a shared principle. The form is the host's choice.

The challenge is the engine of the bootcamp. It has to be real enough that the ethical questions are not hypothetical, open enough that different disciplines find a way in, and small enough that a team can make progress in a few hours.

Three forms have worked: a realistic problem drawn from a case study, a domain scenario card written by a company, or the participants' own start-up ideas brought in for ethical improvement. Each needs a brief on one page: context, the system, the people affected, what the team should deliver.

Test the challenge on one mentor before the day. If they cannot name an ethical tension in it within five minutes, neither will the teams.

GUIDING QUESTIONS

Is the ethical tension in the challenge real, and can a team find it quickly?

Can an engineer, a social scientist and a business student all contribute?

What exactly does a team hand in at the end?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMP

Realistic problems based on the Ethical Engineer case studies

Domain scenario cards provided by companies

Improving a participant's own idea from an ethical standpoint

One challenge for all teams, judged by who handles it best

A choice of three challenges, one per domain

A prompt template per domain: generate a plan, diagnose it with the checklist, revise

DESIGN CANVAS · TEAM COMPOSITION

Four or five people, at least two ways of thinking.

Set a maximum of five members and assign roles where disciplines are missing; form teams of four or five on the day after a warm-up; or let teams form themselves, at least two people, interdisciplinary in role rather than background, with a coach attached. The principle behind all three is the same: someone in the team has to think differently from the engineer.

This block decides how that difference gets into every team, by sign-up, assignment or role card.



CONNECTS TO

2.4 Participants

3.3 Activities

3.6 Team composition

3.9 Mentoring

Works with the profile recruited in 2.4; shapes the team-work activities (3.3) and how mentors relate to teams (3.9).

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

Running several bootcamps? Interdisciplinarity is a shared principle. Whether it comes from backgrounds or from assigned roles is decided here.

Four to five people per team is the sweet spot: enough perspectives, few enough that everyone speaks. Beyond five, someone watches; below three, one person carries the team.

Decide whether teams form themselves or are assigned. Self-formed teams start faster and are more homogeneous; assigned teams are more interdisciplinary and need a longer warm-up. A middle way is to let people sign up individually and then compose teams by discipline.

If the room is not interdisciplinary, make the roles so: the engineer, the user advocate, the regulator, the business owner. A role card is a cheap way to force a second perspective.

GUIDING QUESTIONS

Individual sign-up or pre-formed teams?

How do we get a mix of disciplines into every team, and what do we do if we cannot?

How large, and who decides?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Maximum five members, interdisciplinary if possible, otherwise assigned roles

Four to five per team, formed on the day after a warm-up

Self-formed teams of at least two, recommended four to five

Interdisciplinary roles rather than interdisciplinary backgrounds

An entrepreneurship coach as part of the team

An elevator pitch per team right after formation

DESIGN CANVAS · CHECKPOINT: RESPONSIBLE AI INTEGRATION

Stop building. Check the idea.

Half-way through the day, every team stops and asks whether responsible AI is actually inside its idea or only in the slide about it. Run the mid-point check with a diagnostic checklist, make it a mandatory fifteen minutes before the second work block, or build it into mentoring. It is the moment that separates an Ethical Engineer Bootcamp from a hackathon with an ethics talk.

This block places that moment in the day and, before the day, asks the same question of the design itself.



CONNECTS TO

1.4 Core principles

3.4 Assessment

3.7 Checkpoint

3.8 Agenda

The checkpoint principle from 1.4 made concrete; rehearses the assessment (3.4) and anchors the agenda (3.8).

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

Running several bootcamps? The checkpoint is a shared principle. When and how it is run is the host's choice.

This block is different from the others: it is a moment, not a decision. Half-way through the day, every team stops building and answers, with a mentor, whether responsible AI is actually inside their idea or only in the slide about it.

The Ethical Diagnostic Checklist in the toolbox gives the questions: who benefits and who is harmed, is the data inclusive, what happens on error, how is privacy handled, is there documentation, what does it cost the planet. Fifteen minutes, one page, a mentor's signature.

It is also a checkpoint for the design itself. Before the day, read the whole canvas and ask the same question of the bootcamp: is responsible AI built in, or bolted on?

GUIDING QUESTIONS

When in the day does every team stop and check its idea against the checklist?

Who runs the check, and what happens if a team fails it?

Does the design as a whole put ethics in the middle or at the end?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Mandatory check-in of 15 minutes between the two work blocks

Mid-point facilitator check-in with the Ethical Diagnostic Checklist

Improving new and existing ideas from an ethical standpoint

The jury may ask any checklist question at the pitch

A signed checklist as a condition for pitching

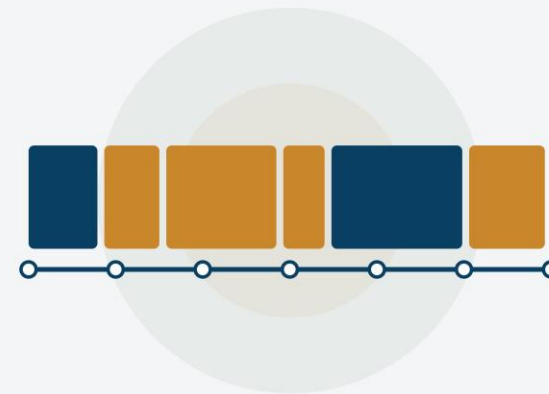
Reviewing the design canvas itself against the checkpoint before the day

DESIGN CANVAS · BOOTCAMP AGENDA

Blocks with **minutes**, not topics with hopes.

Seven numbered blocks from welcome to feedback; a warm-up and an AI-assisted reading before the core challenge; minutes written next to every block and the day split in two after the check-in. Agendas differ in their opening, but a good one always protects the last hour for pitches and reflection.

The agenda is where every other block on this canvas becomes a clock, and it is the last one to draft.



CONNECTS TO

2.2 Duration & timing

3.3 Activities

3.8 Agenda

4.2 During the event

Fits the hours fixed in 2.2; sequences the activities of 3.3; becomes the running order in 4.2.

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

The agenda is where the principles, objectives, activities and assessment become a clock. Write it in blocks with minutes, not in topics with hopes.

Some blocks recur in every Ethical Engineer bootcamp: welcome and team building, challenge briefing, expert input, a first work block with coaching, the responsible-AI check-in, a second work block, pitches, reflection and evaluation, and potentially awards.

Protect the last hour. Pitches always run over, and reflection is the first thing cut. Put the evaluation before the pitches if you have to, but do not skip it.

GUIDING QUESTIONS

Does every learning objective have a block with minutes attached?

Where are the breaks, and where does energy usually collapse?

What is the one block we will not cut when we run late?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Welcome, presentation, tasks, groups, work, pitch, feedback

Opening warm-up, AI-assisted reading, core challenge, work, check-in, pitch

Two half-days: welcome, challenge, input, work 45, check-in 15, work 80, pitches 40, reflection 30, awards

Seven-minute pitch plus three minutes of questions per team

Reflection and evaluation before the awards, thirty minutes

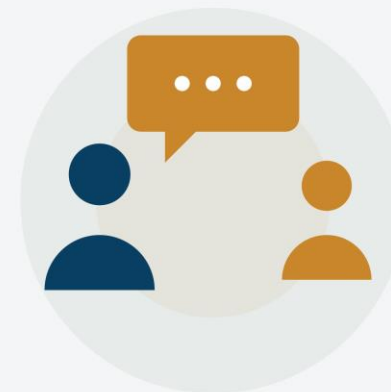
Idea formation and team building as an optional hour before the first day

DESIGN CANVAS · MENTORING / FACILITATION MODEL

A team stuck for forty minutes **has lost the day.**

The organising team as mentors, holding a defined central line while supporting case by case; a coach embedded in each team; consultation slots in every stage, a facilitator watching the breakout rooms, and an AI assistant for first questions. The model differs; the need does not. Teams need someone within reach who can answer a content question, a process question and, above all, the responsible-AI question.

This block decides who that is and when they appear.



CONNECTS TO

2.6 Stakeholders

2.7 Resources

3.7 Checkpoint

3.9 Mentoring

Staffed by the stakeholders in 2.6 within the resources of 2.7; mentors run the checkpoint in 3.7.

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

Mentoring is the difference between a workshop and a hackathon. Teams stuck for forty minutes lose the day; a mentor who drops by at the right moment saves it. Decide where mentors are, when, and for what.

Three questions settle the model: whether mentors circulate or wait to be called, whether one person holds the central line while others support case by case, and who answers the questions about responsible AI as opposed to the technology.

Online, mentoring needs a schedule: consultation slots per team, a visible channel to reach a mentor, and a facilitator who watches the breakout rooms. A custom GPT trained on the project's materials can take the first questions.

GUIDING QUESTIONS

When do mentors interact with teams, and who decides?

Who supports content, who supports process, and who supports the ethics questions?

Is facilitation central, distributed, or both?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMP

The project team as mentors, support case by case; a defined central line, distributed work

An entrepreneurship coach embedded in each team

Consultation slots in each main stage

An internal facilitator watching the breakout rooms

A custom GPT as first-line mentor for the ethics questions

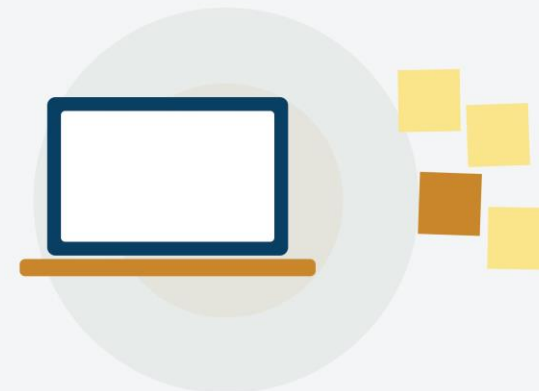
A mandatory check-in as the one moment every team meets a mentor

DESIGN CANVAS · TOOLS, MATERIALS, PLATFORMS

Tools should disappear into the work.

Whiteboards, markers and printed case studies; paper, stickers and an AI-use log template; one canvas per stage on a shared digital whiteboard, a research notebook and a custom GPT. Whatever the mix, write an AI policy alongside it: which tools are allowed for preparation, that every argument must be defended by the team, and a log of what was used. That policy turns out to be a piece of ethics education in itself.

This block lists what is on the table or on screen at each stage, and what the rules are.



CONNECTS TO

2.3 Location

2.7 Resources

3.3 Activities

3.10 Tools & platforms

Constrained by location (2.3) and resources (2.7); each activity in 3.3 needs its tools listed here.

WHERE IT SITS ON THE CANVAS

3.1 Pedagogical principles	3.2 Learning objectives & outcomes	3.3 Teaching & learning activities	3.4 Assessment
Alignment check			
3.5 Challenge design	3.6 Team composition	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda
3.9 Mentoring / facilitation model	3.10 Tools, materials, platforms		

Tools should disappear into the work. A canvas per stage, sticky notes, markers, a wall; online, a shared whiteboard with one frame per team and one per stage. Anything that needs a login on the day is a risk.

AI tools deserve an explicit policy, written down and read out at the start. The Ethical Engineer bootcamps allowed AI for preparation and research, required the team to be able to explain and defend every argument, and asked each team to keep an AI-use log. That log is itself a piece of ethics education.

Give teams the project's case studies and open educational resources as reference material, and a prompt template for their domain if the challenge calls for one.

GUIDING QUESTIONS

What does a team need on the table or on screen at each stage?

What may AI tools be used for, what not, and how do we know?

Which materials do participants get before the day, and which on the day?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Ethical Engineer case studies and OERs as reference material

AI tools allowed for preparation; the team must be able to argue and explain

AI-use log template per team

One worksheet or canvas per stage

Whiteboards, markers, stickers, paper for the pitch

Zoom, NotebookLM, ChatGPT or Copilot, a custom GPT

WORKING WITH THE DESIGN CANVAS

Objectives, activities, assessment. If one moves, the others move.

The Design Canvas takes a day. Draft the agenda last; it is the sum of everything else.

Draft

Align

Time

How to fill in the Design Canvas

Work through the blocks in order. One thought per sticky note.

3.1 Pedagogical principles	1	3.2 Learning objectives & outcomes	2	3.3 Teaching & learning activities	3	3.4 Assessment	4
Alignment check							
3.5 Challenge design	5	3.6 Team composition	6	3.7 Checkpoint: responsible AI	7	3.8 Bootcamp agenda	8
3.9 Mentoring / facilitation model	9			3.10 Tools, materials, platforms	10		

DONE WHEN

- ☐ Every objective has an activity and an assessment criterion.
- ☐ The challenge brief fits on one page and names who is affected.
- ☐ The agenda has minutes, breaks and a protected reflection block.

FACILITATION TIPS

- Bring a learning designer, one mentor and one industry partner. The canvas needs all three views.
- Do the alignment check aloud: read each objective and point at its activity and its criterion.
- Draft the agenda last. It is the sum of the other blocks, not a starting point.

- 1 **3.1 Pedagogical principles** 10 min
Three or four beliefs about how people learn here. Visible in the agenda or not principles.
- 2 **3.2 Learning objectives & outcomes** 15 min
Verbs: spot, analyse, argue, create. Three to five, each with a place in the assessment.
- 3 **3.3 Teaching & learning activities** 15 min
Input, briefing, work blocks, mentoring, review, pitch, debrief; in order.
- 4 **3.4 Assessment** 15 min
Who judges what, on which criteria, team or individual. Ethics in the criteria.
- 5 **Alignment check** 10 min
Read 3.2, 3.3 and 3.4 together. Every objective needs an activity and a criterion.
- 6 **3.5 Challenge design** 20 min
Case study, company scenario or own idea. One-page brief with the people affected.
- 7 **3.6 Team composition** 10 min
Size, formation, disciplinary mix or roles.
- 8 **3.7 Checkpoint: responsible AI** 10 min
When every team stops and checks; who runs it; what a fail means.
- 9 **3.8 Bootcamp agenda** 20 min
Blocks with minutes. Protect reflection.
- 10 **3.9 Mentoring / facilitation model** 10 min
Circulating or on call; central line and distributed support; ethics questions.
- 11 **3.10 Tools, materials, platforms** 10 min
Canvases, whiteboards, AI-use policy and log, reference material.

Filled in: the online international bootcamp

The Design Canvas for the two-half-day online bootcamp, as drafted by ACEEU, AI Heroes and EAEEIE at the co-creation workshop.

3.1 Pedagogical principles - Project-based learning - Interdisciplinary team work - Scenario-based learning	3.2 Learning objectives & outcomes - Understand ethical limitations - Analyse own idea against them - Create scenarios; weigh benefits and sacrifices - Improve the idea	3.3 Teaching & learning activities - Expert input - Team discussions - Reflection - Coaching / mentoring - Pitch	3.4 Assessment - Jury based, team level - Documented presentation mandatory - Criterion: advancement on ethical limitations
3.5 Challenge design Idea improvement based on ethical evaluation	3.6 Team composition - Self-formed teams - Interdisciplinary roles, not necessarily backgrounds - At least 2, recommended max 4–5	3.7 Checkpoint: responsible AI Improving new and existing ideas from an ethical standpoint	3.8 Bootcamp agenda - Welcome 30 - Challenge + expert input - Work 45 + coaching - Check-in 15 - Work 80 - Pitches 40, reflection 30, awards
3.9 Mentoring / facilitation model - Consultation slots in each stage - Custom GPT as mentor		3.10 Tools, materials, platforms - One canvas per stage - NotebookLM, AI-use log - Zoom, whiteboards	

Reading the example

What the online design shows about aligning objectives, activities and assessment.

3.1 Pedagogical principles	3.2 Learning objectives & outcomes 1	3.3 Teaching & learning activities	3.4 Assessment 2
Alignment check			
3.5 Challenge design	3.6 Team composition 3	3.7 Checkpoint: responsible AI	3.8 Bootcamp agenda 4
3.9 Mentoring / facilitation model		3.10 Tools, materials, platforms	

1 The objectives are a journey

Understand, analyse, create, weigh, improve: five verbs in sequence. They became the stages of the day and the frames on the shared whiteboard. Objectives written as a path are easier to teach and to assess.

2 The criterion matches the objective

Teams are judged on their advancement in understanding the ethical limitations of their own idea, not on polish. A documented presentation is mandatory, an oral one optional: the reasoning counts, not the performance.

3 Roles replace backgrounds

An online, international group cannot guarantee a social scientist in every team. Assigning interdisciplinary roles keeps the principle alive when the room cannot deliver it.

4 The check-in splits the day

Two half-days, one week apart, with the responsible-AI check-in as the hinge. Teams leave day one with a diagnosed idea and come back to improve it, which is the learning journey in the calendar.

4

STEP 4

Bootcamp implementation planning

Implementation Canvas

Who does what, by when?

Filled right after Step 3 and updated every week until the day. Two hours to start.

THE CANVAS

4.1
Before the event

4.2
During the event

4.3
After the event

BUILDING BLOCKS IN THIS STEP

4.1

Before the event

82

4.3

After the event

86

4.2

During the event

84

The Implementation Canvas

Who does what, by when?

4.1 Before the event Everything before the day: tasks, owners, dates WHATWHOBY WHENDEPENDENCIESPRIORITY	1
4.2 During the event Everything on the day itself WHATWHOBY WHENDEPENDENCIESPRIORITY	2
4.3 After the event Everything after: evaluation, follow-up, revision WHATWHOBY WHENDEPENDENCIESPRIORITY	3

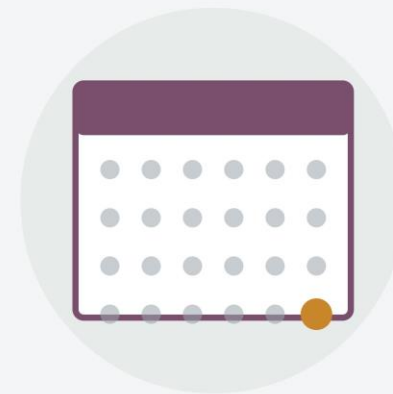
Numbers show the recommended order of filling in.

IMPLEMENTATION CANVAS · BEFORE THE EVENT

Verbs, owners, **dates.**

The Design Canvas describes a bootcamp; this canvas makes it happen. Before the event is the longest list and the one that decides the rest: partners briefed, mentors found, students recruited into mixed teams, rooms and materials ready. The pilots planned it in the weeks after their design workshop, counting backwards from the day.

Every row on this block has a verb, one name and a date, and the few that cannot slip are marked. The countdown in Chapter 3 is the template; this block is where it gets names.



CONNECTS TO

2.5 Recruitment

3.8 Agenda

4.1 Before the event

4.2 During the event

Executes the design; recruitment (2.5) is its largest task; hands over to the running order in 4.2.

WHERE IT SITS ON THE CANVAS

4.1

Before the event

4.2

During the event

4.3

After the event

Running several bootcamps? Hosts plan their own event. Shared tasks, such as the evaluation instruments, are planned once by the coordinator.

The Design Canvas says what the bootcamp is; this canvas says who does what by when so that it happens. Before the event is the longest list and the one that decides everything: recruitment, challenge briefs, mentors, rooms, materials.

Write tasks as verbs with an owner and a date. "Recruitment" is a topic; "Send the call to all third-year courses, Anna, by 14 March" is a task. Add dependencies where one task cannot start before another has finished, and mark the few that are critical.

The countdown in Chapter 3 is a template for this block. Copy it, then delete what does not apply and add what is yours.

GUIDING QUESTIONS

Which tasks have to be done for the day to happen at all?

Who owns each one, and by when?

Which tasks depend on others, and which are on the critical path?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Run the design workshop and fix date, venue and platform (12 weeks)

Draft challenge briefs with partners; invite mentors and jury (8 weeks)

Open recruitment; review registrations and sketch teams (8 to 4 weeks)

Finalise agenda, materials and the AI-use policy (4 weeks)

Brief mentors and jury; send pre-reading (2 weeks)

Confirm teams, rehearse the opening, print everything (1 week)

IMPLEMENTATION CANVAS · DURING THE EVENT

On the day, **a name on every block.**

The agenda says what happens at 10:30; this block says who makes it happen. Who opens, who briefs the challenge, who keeps time, who runs the check-in with each team, who collects the evaluation before people leave, who photographs the pitches.

Plan also the invisible work: watching for a team that has gone quiet, telling the expert that their twenty minutes are up. When the day drifts, and it will, the plan on the wall is what the facilitator returns to.



CONNECTS TO

3.8 Agenda

4.1 Before the event

4.2 During the event

4.3 After the event

The agenda (3.8) with owners; what is collected here feeds the evaluation in 4.3.

WHERE IT SITS ON THE CANVAS

4.1
Before the event

4.2
During the event

4.3
After the event

On the day, the plan is a running order with names: who opens, who briefs the challenge, who keeps time, who runs the check-in, who collects the evaluation, who takes the photographs. If a task has no name, it will not be done.

Plan the invisible work too. Someone welcomes latecomers, someone watches for a team that has gone quiet, someone tells the expert that their twenty minutes are up.

Keep a copy of the plan on the wall and one in the facilitator's hand. When the day drifts, and it will, the plan is what you return to.

GUIDING QUESTIONS

Who does what at each block of the agenda?

What has to be collected during the day that cannot be collected afterwards?

Who has the authority to change the plan when we run late?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Set up rooms and tables one hour early; test the platform

Open, brief the challenge, keep time; one owner per block

Run the responsible-AI check-in with every team

Collect the evaluation before people leave

Photographs, outputs and quotes for the story page

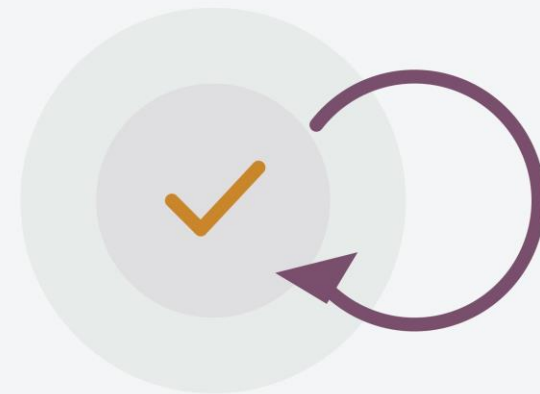
A named person watches for teams that have gone quiet

IMPLEMENTATION CANVAS · AFTER THE EVENT

The event ends when the follow-up is done.

Thank-yous and certificates, outputs back to the partners, the survey read against the success criteria, a debrief with mentors, three lessons written down, the canvases revised: Plan these with dates before the bootcamp, because afterwards the next semester takes over.

For the Ethical Engineer series, this block also carried the task that made this guide possible: revising the shared method after each event. It closes the loop that the four canvases describe.



CONNECTS TO

1.3 Success

2.8 Opportunities

4.2 During the event

4.3 After the event

Measures against 1.3; turns the opportunities of 2.8 into follow-up; uses what 4.2 collected.

WHERE IT SITS ON THE CANVAS

4.1
Before the event

4.2
During the event

4.3
After the event

Running several bootcamps? Revising the shared guide after each bootcamp is a series task. Local follow-up stays with the host.

The event is over when the follow-up is done, not when the room is empty. Thank people by name, send the certificates, share the photographs and outputs, and tell participants what happens to the ideas.

Evaluate while memories are fresh: the survey results, a debrief with mentors and partners within a week, the three lessons you would pass on. Then bring the canvases back to the table and revise them.

Plan the follow-up before the event, not after. Dates for the debrief and the revision workshop go into this block during the design phase, otherwise they slip.

GUIDING QUESTIONS

What do participants, mentors and partners receive, and when?

When do we evaluate, and who reads the results?

When do the canvases get revised, and who owns the next bootcamp?

EXAMPLES FROM THE ETHICAL ENGINEER BOOTCAMPS

Thank-you and certificates
within one week

Survey analysis and mentor
debrief within two weeks

Follow-up for the best ideas
with partners

Three lessons learned
written for the story page

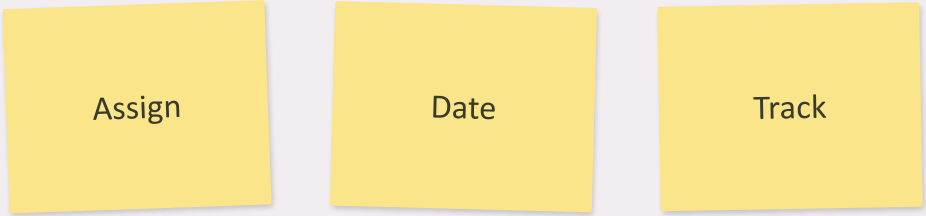
Revision workshop:
canvases updated for the
next bootcamp

Reporting to the faculty and
the funder

WORKING WITH THE IMPLEMENTATION CANVAS

A plan is a list of names and dates.

The Implementation Canvas is filled right after the design and updated every week until the day.



Assign

Date

Track

How to fill in the Implementation Canvas

Work through the blocks in order. Write on sticky notes, one thought per note, so you can move and regroup them.

4.1 Before the event	1
4.2 During the event	2
4.3 After the event	3

- | | | |
|--|-----------------------------|--------|
| 1 | 4.1 Before the event | 60 min |
| Copy the countdown, then add owners, dates and dependencies. Mark the critical path. | | |
| 2 | 4.2 During the event | 30 min |
| Running order with a name on every block, including the invisible work. | | |
| 3 | 4.3 After the event | 20 min |
| Thanks, certificates, evaluation, debrief, revision workshop; with dates now. | | |

DONE WHEN

- ☐ Every task has one owner and a date.
- ☐ The critical path is marked and has slack.
- ☐ Debrief and revision dates are in the calendar.

FACILITATION TIPS

- Fill this canvas right after Step 3, while the design is fresh, and update it weekly.
- One owner per task. Two owners means no owner.
- Use the priority column honestly: not everything is high, or nothing is.

Filled in: a one-day campus bootcamp

A worked example of the Implementation Canvas, based on one pilot set-up and the countdown in Chapter 3.

4.1 Before the event				
WHAT	WHO	BY WHEN	DEPENDENCIES	PRIORITY
Design workshop: fill canvases 1 to 3	Host lead	T–12 weeks	Framing Canvas agreed	High
Fix date and rooms; confirm industry partner	Host lead	T–12 weeks	Design workshop	High
Draft challenge briefs with partners	Partner liaison	T–8 weeks	Partner confirmed	High
Invite mentors and jury; open recruitment	Coordinator	T–8 weeks	Briefs drafted	High
Finalise agenda, materials, AI-use policy	Learning designer	T–4 weeks	Registrations reviewed	Medium
Brief mentors and jury; send pre-reading; print	Coordinator	T–2 to T–1 week	Materials final	Medium
4.2 During the event				
WHAT	WHO	BY WHEN	DEPENDENCIES	PRIORITY
Set up rooms, test wifi and platform	Student organiser	Day, 09:00		High
Welcome, challenge briefing, timekeeping	Facilitator	Day, 10:00		High
Responsible-AI check-in with every team	Mentors	Day, 13:00	First work block	High
Collect evaluation; photographs and quotes	Coordinator	Day, 15:30		Medium
4.3 After the event				
WHAT	WHO	BY WHEN	DEPENDENCIES	PRIORITY
Thank-you, certificates, photographs	Coordinator	T+1 week	Evaluation collected	Medium
Survey analysis and mentor debrief	Host lead	T+2 weeks		High
Three lessons learned; revise canvases	Host lead	T+4 weeks	Debrief	High

Reading the example

What a filled Implementation Canvas shows, and where plans usually go wrong.

4.1 Before the event	2
4.2 During the event	3
4.3 After the event	4

1 Dates count backwards

Every task before the event is dated relative to the day: T minus twelve weeks, T minus four. It keeps the plan valid when the date moves, and it makes the countdown reusable for the next bootcamp.

2 Dependencies show the critical path

Briefs need a confirmed partner; recruitment needs briefs to promise something; the agenda needs registrations to size the teams. The three high-priority rows at the top are the ones that cannot slip.

3 The day has owners, not just times

Set-up, welcome, check-in and evaluation each have one name. The check-in is marked high because it is the one block that makes the bootcamp an ethics event rather than a hackathon.

4 After is planned before

Debrief and revision have dates before the bootcamp has taken place. Plans that leave the after-phase open lose it to the next semester.

3

CHAPTER 3

Using the methodology

From canvases to a bootcamp: the twelve weeks before, the day itself, and the four weeks after.

IN THIS CHAPTER

Before, during, after

93

During the bootcamp

98

Before the bootcamp

94

After the bootcamp

102



Before, during, after

The canvases tell you what to decide. This chapter is about doing it: the weeks before, the day itself, and what happens afterwards.

A bootcamp is won or lost in the weeks before it. Challenges have to be briefed with partners, mentors found and prepared, students recruited into teams that actually mix disciplines. The countdown on the next page puts all of that on one timeline.

On the day, the flow matters more than the agenda. Every Ethical Engineer bootcamp passes through the same nine blocks, and the responsible-AI check-in half-way through is what makes it an ethics event rather than a build-anything hackathon.

Afterwards comes the part most events skip: evaluation, recognition, and the honest revision of the canvases before the next bootcamp starts from them.



Before

Twelve weeks of preparation on one timeline, from the design workshop to the day itself.



During

Nine blocks, four roles, one checkpoint. What the facilitator, mentors, experts and jury do in each.

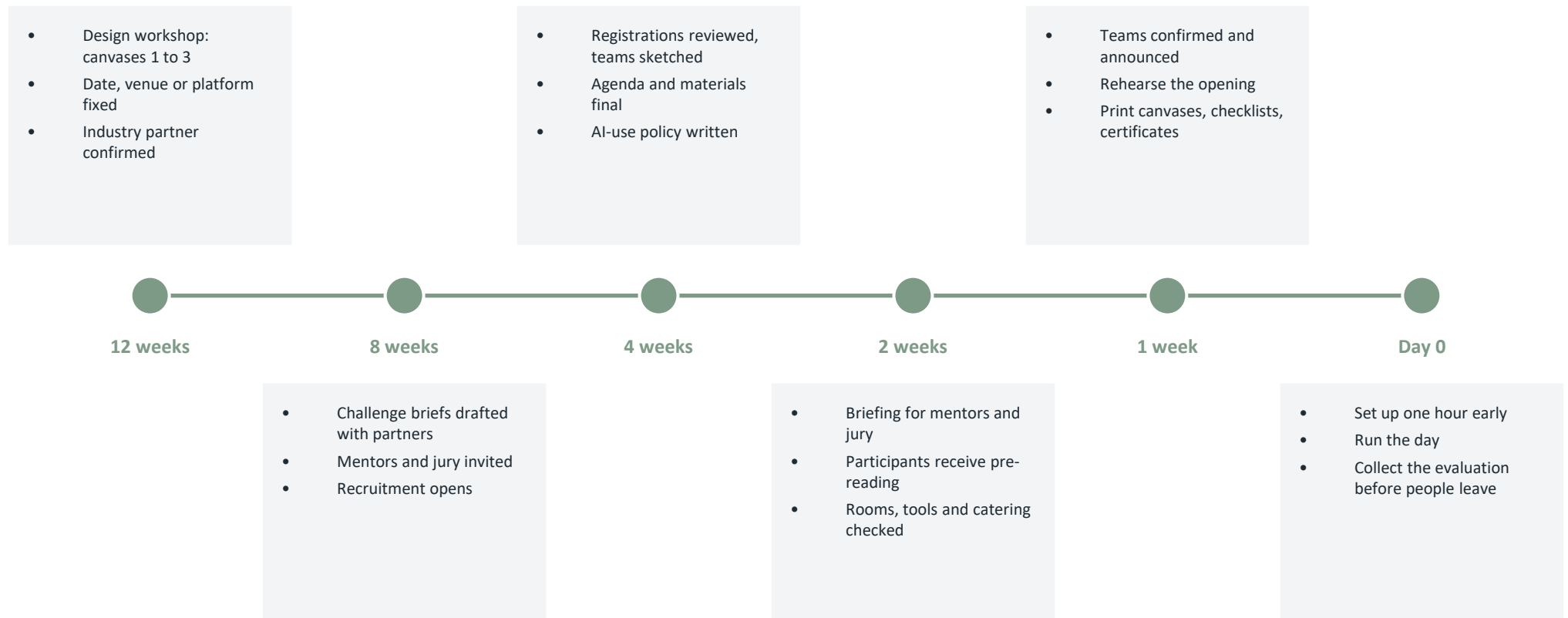


After

Evaluate, recognise, revise. Feeding the lessons back into the canvases for the next round.

Before the bootcamp: the countdown

What has to happen when, counted back from the day itself. Twelve weeks is comfortable; eight is the minimum we would recommend.



Recruiting participants and forming teams

The two tasks that decide whether the room is full and whether the teams are worth being in.

Recruit through people. A lecturer announcing the bootcamp in a course they teach, with a date and a reason, fills more seats than any poster. Ask three lecturers in three faculties, and ask a student association to bring a team. Give every announcement a link and a deadline.

Watch the numbers weekly from eight weeks out. If registrations are behind, act at four weeks, not at one: a second announcement, a personal email to the students who opened the link, a partner company inviting its interns.

Form teams before the day if you can, from individual sign-ups sorted by discipline. If teams form on the day, run a warm-up that mixes people first, then let them choose. Either way, aim for four or five per team and at least two disciplines, or assign roles that force a second perspective.



Announce through lecturers

Three faculties, three courses, one student association. A link and a deadline in every announcement.



Track weekly

Registrations against target from week eight. Intervene at week four, not week one.



Mix by design

Sort sign-ups by discipline; four to five per team; role cards where the mix is missing.

Briefing partners, mentors and the jury

Three groups of people who make the bootcamp real, and what each of them needs from you before the day.

Partners bring the challenge. Meet them eight weeks out, agree the brief on one page (context, the system, the people affected, what a team should deliver), and ask them to name the ethical tension they see in it. If they cannot, the brief is not ready. Invite them to the pitch and to the jury; tell them what they get back: ideas, a report, students who know their company.

Mentors carry the day. Brief them two weeks out: the agenda, their role in each block, the mentoring model (circulate or on call), and the Ethical Diagnostic Checklist, which they will run with every team at the check-in. Agree who answers the responsible-AI questions and who answers the technical ones.

The jury judges. Send the criteria and the scoring sheet a week ahead, remind them that the ethical reasoning is weighted, and ask each juror to prepare one question from the checklist.



Partners, 8 weeks out

One-page brief, the ethical tension named, a seat on the jury, a promise of what they get back.



Mentors, 2 weeks out

Agenda, role per block, mentoring model, the checklist, who answers what.



Jury, 1 week out

Criteria and scoring sheet, ethics weighted, one checklist question each.

The AI-use policy

Six rules to write down and read out at the start of the day. They make the use of AI tools part of the ethics education rather than a threat to it.



AI is allowed for preparation and research

Summarising the brief, exploring the domain, drafting options. Say so explicitly; a ban is unenforceable and teaches nothing.



The team must be able to explain every argument

Anything the team cannot defend in its own words at the check-in or the pitch does not count. Mentors and jury may ask.



Every team keeps an AI-use log

Which tool, for what, and what the team changed. The template is in the toolbox. It is handed in with the pitch.



No personal or confidential data goes into a tool

Partner material stays with the team. If the brief contains real data, say what may and may not be uploaded.



Bias and errors are the team's responsibility

An output is a suggestion, not an answer. Checking it against the Ethical Diagnostic Checklist is part of the work.



The bootcamp's own AI tools are declared

If a custom GPT or a research assistant is provided, say what it was trained on and what it is for. Practise what you teach.

WHEN TO USE IT

Read out at the welcome, printed on every table, and referred to at the check-in.

Adapt the first rule to the challenge: a brief with real data may need a stricter line.

The online bootcamp used a custom GPT as a first-line mentor; its rules were the same.

The bootcamp flow at a glance

Nine blocks that every Ethical Engineer bootcamp shares, whether it runs in one day on campus or over two half-days online.



Keep ethics at the centre

The mandatory check-in sits between the two team-work blocks. Teams run their idea through the Ethical Diagnostic Checklist with a mentor before they are allowed to continue building.

In person: one day

10:00 to 16:00 works with a short lunch. Put the expert input before the first team-work block, so teams start with vocabulary and a real example.

Online: two half-days

Split after the check-in. Teams keep their own canvas sheet per stage and get consultation slots with a mentor. Pitch and awards on day two, 11:00 to 16:00.

Roles in action

Who does what in each block of the day. One person can hold two roles; no role can be held by nobody.

BLOCK	FACILITATOR	MENTORS	EXPERTS AND PARTNERS	JURY
Welcome & team building	Opens, sets the rules and the AI policy, runs the warm-up	Meet their teams, learn names	Introduced, one sentence each	Not present
Challenge briefing	Keeps time	Listen; note where teams may get stuck	Present the brief and the ethical tension they see	Not present
Expert input	Keeps time, collects questions	Listen	Twenty minutes, one real example, then stay	Not present
Team work 1	Watches the room, spots quiet teams	Circulate or on call; content and process	Available for domain questions	Not present
Check-in	Announces, keeps to fifteen minutes	Run the checklist with each team, sign it	May join a team's check-in	Not present
Team work 2	Warns at thirty and ten minutes	On call; push towards the deliverable	Available	Arrive, read the criteria
Pitches	Chairs, seven plus three minutes	Do not intervene	Ask questions	Score on the sheet
Reflection & evaluation	Runs the debrief, hands out the survey	Join the debrief	Give one observation each	Deliberate
Awards & close	Closes, says what happens next	Thank their teams	Hand over prizes	Announce, explain the decision

Keeping ethics at the centre

How the responsible-AI checkpoint runs on the day, and what to do when a team fails it.

At the check-in, every team meets a mentor for fifteen minutes with its current idea and the Ethical Diagnostic Checklist. The mentor asks the seven questions; the team answers for its own idea, not in general. Where an answer is missing, the team writes the gap on the sheet. The mentor signs it, and the team may only pitch with a signed sheet.

Failing the check-in is normal and useful. A team that cannot say who might be harmed by its system has found its most important task for the second work block. The mentor's job is not to supply the answer but to make sure the question is taken seriously.

The jury closes the loop. Each juror asks at least one checklist question at the pitch, and the scoring sheet weights the ethical reasoning. Teams that treated the check-in as a formality discover this in the last hour of the day, which is late but not too late for the next bootcamp.



The sheet

Seven questions, one page per team, signed by a mentor. In the toolbox.



Fifteen minutes

Long enough to find the gap, too short to solve it there. Solving is what the second block is for.



The jury asks

One checklist question per juror at the pitch. Ethics is in the score, not beside it.

Face-to-face and online: what changes

The same blocks, a different set of habits. What the two pilot formats taught the partners.

	FACE-TO-FACE, ONE DAY	ONLINE, TWO HALF-DAYS
Duration	10:00 to 16:00 with a short lunch; energy dips after 90 minutes, so move people	Two sessions of 11:00 to 16:00 one week apart; teams work between sessions
Team formation	Warm-up in the room, then self-selection or assignment by discipline	Self-formed teams before day one, an optional hour for idea and team building
Materials	Printed canvases on the wall, sticky notes, markers, one table per team	One shared whiteboard, one frame per team and per stage; a worksheet per stage
Mentoring	Mentors circulate; a quiet table is visible	Consultation slots per team; a facilitator watches breakout rooms; a custom GPT for first questions
Check-in	Mentor sits down with the team for fifteen minutes	Mandatory fifteen-minute check-in in the team's breakout room at the end of day one
Pitches	Seven minutes plus three, in front of everyone	Pitches in parallel rooms, new ideas and established teams separately; recordings optional
Evaluation	Online survey before people leave the room	Online survey in the last thirty minutes, before the awards, while everyone is still connected
Risks	No-shows, teams leaving early, the room too small	Technical problems, camera fatigue, fairness between newcomers and existing teams

Capturing evidence on the day

What to collect while it is happening, because it cannot be collected afterwards.

The story page for your bootcamp, the report to the faculty and the numbers for the funder all depend on things that exist only on the day: the filled canvases, the checklists, the pitches, the faces, the sentences people say in the debrief.

Give one person the job and a list. Photographs of every team at work and at the pitch, the filled canvases and worksheets, the signed checklists, the AI-use logs, the scoring sheets, three quotes written down verbatim with the speaker's consent, and the survey before anyone leaves.

Ask for consent at the welcome, in one sentence, with a way to opt out of photographs. Store everything in one folder the same evening; a week later half of it will be gone.



Images

Every team at work and at the pitch; the wall of canvases; the jury. Consent at the welcome.



Artefacts

Canvases, worksheets, signed checklists, AI-use logs, scoring sheets, pitch slides.



Voices

Three quotes written down verbatim; the survey before the room empties.

Evaluation and feedback

What to measure, whom to ask, and how to read the answers against the success criteria from Step 1.

Evaluate against the criteria you wrote in block 1.3, not against a generic satisfaction scale. The survey templates in the toolbox cover the indicators the Ethical Engineer project reports on: new knowledge of AI, better critical thinking, the relevance of ethically used AI for engineering, willingness to recommend, intention to use more of the resources.

Ask three groups: participants at the end of the day, mentors and partners in a debrief within a week, and yourselves in a short written reflection. Read them side by side; the interesting findings are where they disagree.

Write down three lessons and nothing more. Long evaluation reports are not read; three sentences on the story page are, and they are what the next host needs.



Participants, on the day

The survey in the toolbox: knowledge, critical thinking, relevance, recommendation, intention.



Mentors and partners, within a week

A one-hour debrief on the challenge, the teams, the check-in and the pitch.



Three lessons

Written by the host lead, dated, put on the story page and into the revision workshop.

Recognition and follow-up

The week after: what participants, mentors and partners receive, and what happens to the ideas.

Within a week, everyone who took part receives something by name: participants a certificate of participation or competence and the photographs, mentors and jurors a thank-you that says what their contribution changed, partners the outputs of the teams that worked on their challenge and an invitation to the next round.

Decide before the day what happens to the best ideas. A follow-up meeting with the partner, a slot in an entrepreneurship programme, a place in a course project: a concrete next step is worth more than a prize.

If the bootcamp counts towards a course, close the credit loop now: the individual reflection, the grade, the entry in the transcript. Students remember whether it counted.



Certificates

Participation or competence, by name, within a week. The template is in the toolbox.



Next steps for ideas

A partner meeting, a programme, a course project. Agreed before the day, announced at the awards.



Credit

Reflection, grade, transcript. Close the loop within the semester.

Reflect and revise

Bringing the canvases back to the table: the step that turns one bootcamp into a programme.

Four weeks after the bootcamp, with the survey results, the debrief notes and the three lessons in hand, the host team meets for two hours with the four canvases on the wall. Every sticky note gets one of three fates: it stays, it changes, or it goes.

Most changes land on the Design Canvas: a challenge that was too broad, a check-in that came too late, a mentoring model that left teams waiting. Some land on the Set-Up Canvas: a date that collided with exams, a recruitment channel that did not deliver. Very few should land on the Framing Canvas, and if they do, tell the other hosts.

The revised canvases are the starting point of the next bootcamp. Date the revision, keep the old notes in a photograph, and hand the canvases to whoever runs the next one.



Four weeks after

Two hours, the host team, the four canvases, the evidence from the day.



Stay, change, go

Every note is decided. Most changes are on the Design Canvas; changes to the frame are shared with all hosts.



Date and hand over

Photograph the old version, date the new one, give it to the next host.

Embedding and sustaining

How a bootcamp becomes part of the curriculum, and how it survives the people who started it.

A bootcamp that happens once is an event; one that happens every year is a course. The difference is made in three places: the curriculum, where the bootcamp is written into a module description with credits and an assessment; the partnerships, where companies know that every spring they will be asked for a challenge; and the team, where the roles are documented well enough for someone new to take over.

Use the canvases as the documentation. A filled set of four canvases, the story page and the toolbox are everything a successor needs. Add the names of partners and mentors who said they would come back.

Tell the story outside the faculty. A page on the website, a talk at a network meeting, a line in the annual report: the bootcamp is also how the institution shows what it thinks engineering education should be.



In the curriculum

A module description with credits, an assessment and a fixed place in the year.



With partners

Companies that expect the call every year; a jury that comes back.



For successors

The four canvases, the story page and the toolbox, with names attached.

The four weeks after: checklist

Start the clock on the evening of the bootcamp. Everything on this list has a date in block 4.3 of your Implementation Canvas.



Thank-you and certificates, week 1

By name, to participants, mentors, jurors and partners. Photographs attached, consent respected.



Three lessons, week 3

Written by the host lead, dated, on the story page. Three sentences, not a report.



Outputs to partners, week 1

The documented presentations and AI-use logs of the teams that worked on their challenge; an invitation to the next round.



Revision workshop, week 4

Two hours, the four canvases on the wall: every note stays, changes or goes. Photograph the old version first.



Survey analysis, week 2

Participant and educator surveys read against the success criteria in block 1.3. Numbers and quotes.



Report and hand-over, week 6

To the faculty and the funder; the revised canvases and the story page to whoever runs the next bootcamp.



Mentor and partner debrief, week 2

One hour: the challenge, the teams, the check-in, the pitch. What surprised you.

WHEN TO USE IT

The list is the after-phase of the Implementation Canvas in checklist form.

In a series, the coordinator adds one item: send the revised canvases and the lessons to the other hosts before their bootcamp.

4

CHAPTER 5

Toolbox

Everything to print, copy or adapt: canvases, agendas, checklists, templates and surveys.

IN THIS CHAPTER

What is in the toolbox	117	Brief, scenario card, jury and peer sheets	126
Blank canvases	118	Evaluation surveys	130
Sample agendas	122	Glossary and references	132
Checklist and AI-use log	124		

What is in the toolbox

Everything in this chapter is meant to be printed, copied or adapted. Nothing in it needs the rest of the guide to be useful.

The canvases come first, blank and at a size that works on a wall. Then the material for the day: sample agendas for the one-day and the two-half-day format, the Ethical Diagnostic Checklist, the AI-use log every team keeps, the challenge brief and scenario card for partners, the jury sheet and the peer evaluation.

The evaluation surveys match the indicators the Ethical Engineer project reports on, so a host that uses them can compare its results with the three pilot bootcamps.

A glossary and the references close the guide. Everything here is published under the same open licence as the guide itself; adapt freely and credit the project.



Canvases

All four canvases, blank, for A3 or A0 printing, plus the online board template on the project website.



Templates

Agendas, checklist, AI-use log, challenge brief, scenario card, jury sheet, peer evaluation.



Surveys and reference

Participant and educator surveys aligned with the project indicators; glossary; references.

Framing Canvas

Print on A3 or larger. Use sticky notes; one thought per note.

1.1 What is given? <i>Constraints from funder, project, curriculum, faculty, calendar</i>	1.2 Our objective <i>Why we run it; what should be different afterwards</i>	1.4 Core design principles <i>What stays fixed, whatever the context</i>
	1.3 What is success for us? <i>How we will know: signs and numbers</i>	1.5 Open design choices <i>What may vary; decided in Steps 2 and 3</i>

Set-Up Canvas

Print on A3 or larger. Use sticky notes; one thought per note.

2.1 Bootcamp objective <i>What this particular bootcamp should achieve</i>	2.2 Duration & timing <i>How long, when in the year, one day or several</i>	2.3 Location <i>Campus, company, online: where it happens</i>
2.4 Participant profile & entry level <i>Who takes part: level, disciplines, language</i>	2.5 Incentives & recruitment <i>Why they come, and how you find them</i>	2.6 Key stakeholders & support <i>Faculty, organisers, mentors, companies, associations</i>
2.7 Available resources <i>Rooms, platforms, budget, catering, networks</i>	2.8 Opportunities <i>What this bootcamp could open up</i>	2.9 Risks / constraints <i>What could go wrong, what limits you</i>

Design Canvas

Print on A3 or larger. Use sticky notes; one thought per note.

3.1 Pedagogical principles <i>How people learn here</i>	3.2 Learning objectives & outcomes <i>What participants can do afterwards</i>	3.3 Teaching & learning activities <i>What happens, in which order</i>	3.4 Assessment <i>By whom, on what criteria, team or individual</i>
ALIGNMENT CHECK · do objectives, activities and assessment fit together?			
3.5 Challenge design <i>What kind of challenge teams work on</i>	3.6 Team composition <i>Sign-up, size, disciplinary mix, roles</i>	3.7 Checkpoint: responsible AI <i>Is responsible AI really built in? Review and revise</i>	3.8 Bootcamp agenda <i>The programme, block by block</i>
3.9 Mentoring / facilitation model <i>Who supports whom, when and how</i>		3.10 Tools, materials, platforms <i>Collaboration, AI tools, templates, canvases</i>	

Implementation Canvas

Print on A3 or larger. Use sticky notes; one thought per note.

4.1

Before the event

Everything before the day: tasks, owners, dates

WHAT

WHO

BY WHEN

DEPENDENCIES

PRIORITY

4.2

During the event

Everything on the day itself

WHAT

WHO

BY WHEN

DEPENDENCIES

PRIORITY

4.3

After the event

Everything after: evaluation, follow-up, revision

WHAT

WHO

BY WHEN

DEPENDENCIES

PRIORITY

Sample agenda: one day on campus

Six hours with a short lunch. Adjust the work blocks to your challenge; keep the check-in and the reflection.

TIME	BLOCK	WHAT HAPPENS	WHO LEADS
09:00	Set-up	Rooms, tables, canvases on the wall, wifi and projector tested, coffee	Student organisers
10:00	Welcome and team building	Rules, AI-use policy, warm-up, team formation, elevator pitch per team	Facilitator
10:30	Challenge briefing	Partners present the briefs and the ethical tension they see; questions	Partners, facilitator
10:50	Expert input	One real example of an AI system and its consequences; vocabulary for the day	Expert
11:10	Team work 1	Understand the challenge, map who is affected, first idea; mentors circulate	Teams, mentors
12:10	Lunch	Thirty minutes; mentors eat with their teams	All
12:40	Responsible-AI check-in	Fifteen minutes per team with a mentor on the Ethical Diagnostic Checklist; sheet signed	Mentors
13:00	Team work 2	Improve the idea to close the gaps; prepare the documented presentation; warnings at 30 and 10 minutes	Teams, mentors on call
14:20	Pitches	Seven minutes plus three of questions per team; jury scores on the sheet	Jury, facilitator
15:10	Reflection and evaluation	Debrief in the room; participant survey completed before anyone leaves	Facilitator
15:40	Awards and close	Jury explains its decision; prizes; what happens next for the ideas	Jury, host lead

Sample agenda: two half-days online

Two sessions of five hours, one week apart, based on the online international bootcamp. The check-in closes day one; teams work in between.

TIME	DAY ONE	DAY TWO
10:00	Optional hour: idea formation and team building for newcomers	Rooms open; teams check in with their facilitator
11:00	Welcome, rules, AI-use policy, team check-in (30 min)	Recap and second challenge input: what changed since day one (20 min)
11:30	Challenge and expert input (30 min)	Self-paced team work with consultation slots (80 min)
12:00	Self-paced team work with internal and project coaching (45 min)	
12:45	Break (15 min)	Break (15 min)
13:00	Self-paced team work continued; custom GPT available as first-line mentor (60 min)	Pitches in parallel rooms: new ideas and established teams separately (40 min)
14:00	Mandatory responsible-AI check-in per team in its breakout room (15 min)	Bootcamp reflection and evaluation; survey completed (30 min)
14:30	Homework briefing: what to bring to day two (15 min)	Awards and close (30 min)
15:00	Open consultation slots until 16:00	Open follow-up conversations with partners until 16:00

Ethical Diagnostic Checklist

Seven questions every team answers about its own idea before it is allowed to keep building.

☐

Who benefits, who might be harmed?

Name the groups on both sides. If you cannot name anyone who might be harmed, look again.

☐

How are privacy and data handled?

What is collected, where it goes, who can see it, how long it is kept.

☐

Does the data include everyone?

Minority languages, ages, abilities, regions: are they in the dataset the system learns from?

☐

Is there documentation for accountability?

Data sources, model limits, decisions taken: written down so someone else can check.

☐

Are success criteria inclusive?

Does the system count as working only when it works for all the groups you named?

☐

Are sustainability costs considered?

Energy, hardware, environmental footprint of training and running the system.

☐

What happens on error?

Is there a human override, and does the person affected know how to reach it?

WHEN TO USE IT

At the responsible-AI check-in, half-way through the bootcamp: every team walks a mentor through the seven questions for its own idea.

Again before the final pitch: the jury may ask any of the seven.

As a self-check for challenge providers when they write their briefs.

Developed at the Ethical Engineer co-creation workshop (RTU, 2025). Print one per team; the mentor signs it.

AI-use log

One sheet per team, handed in with the pitch. It records what AI tools were used for and what the team did with the results.

TEAM AND CHALLENGE	TOOLS USED
Team name, members, challenge title	e.g. custom GPT, NotebookLM, ChatGPT, Copilot
USE 1: WHAT WE ASKED, WHAT WE GOT, WHAT WE CHANGED	
Purpose · prompt or question · result · how the team checked and changed it	
USE 2: WHAT WE ASKED, WHAT WE GOT, WHAT WE CHANGED	
USE 3: WHAT WE ASKED, WHAT WE GOT, WHAT WE CHANGED	
WHERE THE TOOL WAS WRONG OR BIASED, AND HOW WE NOTICED	
SIGNED BY THE TEAM	SEEN BY THE MENTOR AT THE CHECK-IN
All members	Name and signature

Rules: AI may be used for preparation and research; the team must be able to explain every argument; no personal or confidential data goes into a tool.

Challenge brief

One page written by the partner with the host, eight weeks before the bootcamp. If the ethical tension cannot be named, the brief is not ready.

CHALLENGE TITLE	PARTNER AND CONTACT
	<i>Organisation, name, role, who will be on the jury</i>
CONTEXT: THE ORGANISATION, THE DOMAIN, WHY THIS MATTERS NOW	
THE SYSTEM: WHAT THE AI DOES OR SHOULD DO, WITH WHAT DATA	
THE PEOPLE: WHO USES IT, WHO IS AFFECTED, WHO DECIDES	
<i>Users, subjects, operators, regulators, the public</i>	
THE ETHICAL TENSION WE SEE	WHAT A TEAM SHOULD DELIVER
<i>One or two sentences; the checklist helps</i>	<i>Documented presentation, seven minutes, one page</i>
MATERIAL PROVIDED, AND WHAT MAY NOT BE UPLOADED TO AI TOOLS	

Test the brief on one mentor: can they name the ethical tension within five minutes?

Scenario card

A shorter form of the challenge: one card per domain, handed to a team with a prompt template. Teams generate a plan, diagnose it with the checklist, and revise.

DOMAIN	PROVIDED BY
<i>e.g. healthcare, mobility, hiring, energy</i>	<i>Company or expert</i>
THE SITUATION IN THREE SENTENCES	
<i>A real setting, a decision the AI supports, the stakes</i>	
THE AI SYSTEM, IN ONE SENTENCE	
THREE PEOPLE IN THE SCENARIO	
<i>Name, role, what they want, what they fear</i>	
PROMPT TEMPLATE FOR THE TEAM	
<i>"Generate a plan for ... that ..." — then diagnose the plan with the Ethical Diagnostic Checklist and revise it</i>	
SCENARIO A: NO LIMITS	SCENARIO B: EXTREME LIMITS
<i>What happens if the system is deployed without constraints?</i>	<i>What happens if every risk is regulated away?</i>

Jury sheet

One sheet per team per juror. The ethical reasoning carries half the score; say so at the start of the day.

CRITERION	WHAT TO LOOK FOR	WEIGHT	SCORE 1–5
Understanding of the ethical limitations	Who benefits and who is harmed is named; data, error, privacy and accountability were considered; gaps found at the check-in were addressed	25 %	
Advancement of the idea	The idea after the bootcamp is measurably better than before: risks reduced, benefits kept, sacrifices made explicit	25 %	
Quality of the solution	Technically plausible, fits the challenge, could be built with the partner's data and resources	20 %	
Interdisciplinary reasoning	Perspectives from more than one discipline or role are visible in the argument, not just in the team list	15 %	
Documentation and pitch	The documented presentation stands on its own; the pitch is clear; questions from the checklist are answered	15 %	
Total		100 %	

Peer evaluation

Every team scores every other team's pitch on three questions. Peer scores are shown next to the jury's; they rarely disagree, and when they do, that is the debrief.

QUESTION	TEAM A	TEAM B	TEAM C	TEAM D	TEAM E
Did the team clearly say who might be harmed by its system, and what it did about it? (1–5)					
Is the idea better after the bootcamp than the version we heard at the elevator pitch? (1–5)					
Would we want to work on this idea with them? (1–5)					
One thing we learned from this team					
One question we would ask them					

Participant survey

Completed on the day before anyone leaves. The items match the Ethical Engineer project's indicators, so results can be compared across bootcamps.

Please rate each statement: 1 = strongly disagree, 5 = strongly agree.

	1	2	3	4	5
1. I gained new knowledge about the use of AI in my field.	☐	☐	☐	☐	☐
2. My critical thinking about AI systems has improved.	☐	☐	☐	☐	☐
3. I can now identify who benefits and who might be harmed by an AI system.	☐	☐	☐	☐	☐
4. Working with people from other disciplines improved our idea.	☐	☐	☐	☐	☐
5. The responsible-AI check-in changed what our team did.	☐	☐	☐	☐	☐
6. AI used ethically is useful and relevant for engineering.	☐	☐	☐	☐	☐
7. I would recommend this bootcamp to a fellow student.	☐	☐	☐	☐	☐
8. I intend to use more of the Ethical Engineer resources.	☐	☐	☐	☐	☐

What was the most valuable moment of the day?

What should we change next time?

Educator and stakeholder survey

For lecturers, mentors, jurors and partners, within a week of the bootcamp.

Please rate each statement: 1 = strongly disagree, 5 = strongly agree.

	1	2	3	4	5
1. AI is useful and relevant for engineering when it is used ethically.	☐	☐	☐	☐	☐
2. The bootcamp format is suitable for teaching AI ethics to engineering students.	☐	☐	☐	☐	☐
3. The challenge gave students a real ethical tension to work on.	☐	☐	☐	☐	☐
4. The check-in and the jury criteria put ethics at the centre, not at the end.	☐	☐	☐	☐	☐
5. I feel more confident integrating AI ethics into my own teaching.	☐	☐	☐	☐	☐
6. I would recommend or share the bootcamp resources with a colleague.	☐	☐	☐	☐	☐
7. I intend to access further resources from the Ethical Engineer project.	☐	☐	☐	☐	☐
8. I would take part in the bootcamp again.	☐	☐	☐	☐	☐

What would you keep, and what would you change?

What would you need to run a bootcamp yourself?

Glossary

The terms this guide uses in a particular sense.

TERM	MEANING IN THIS GUIDE
Bootcamp	A short, intensive, hackathon-style learning event in which teams work on a real challenge and pitch a result. One day on campus or two half-days online in the Ethical Engineer pilots.
Canvas	A one-page structure of building blocks, filled with sticky notes in a workshop. The guide has four: Framing, Set-Up, Design, Implementation.
Building block	One field of a canvas, with guiding questions and examples. Twenty-seven in total.
Fixed and open choices	Design decisions that stay the same in every bootcamp (fixed) and those left to the host and the context (open). Blocks 1.4 and 1.5.
Series	Several bootcamps run under one shared Framing Canvas, such as the three Ethical Engineer pilots.
Challenge	The real-world problem a team works on, brought by a company or another external partner as a brief or a scenario card.
Responsible-AI check-in	The mandatory mid-point moment when every team checks its idea against the Ethical Diagnostic Checklist with a mentor.
Ethical Diagnostic Checklist	Seven questions on benefit and harm, data, success criteria, error, privacy, accountability and sustainability.
Alignment check	The test that every learning objective has an activity and an assessment criterion. The bar across the Design Canvas.
AI-use log	The sheet on which a team records what it used AI tools for and what it did with the results.
Trustworthy AI	AI that is lawful, ethical and robust, as defined by the EU High-Level Expert Group's Ethics Guidelines (2019) and its seven requirements.

References and further reading

The sources the method draws on, and where to find the project's other results.

European Commission, High-Level Expert Group on Artificial Intelligence (2019). Ethics Guidelines for Trustworthy AI. The seven requirements behind the Ethical Diagnostic Checklist.

European Parliament and Council (2024). Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence (AI Act). The legal frame the CVUT bootcamp linked to its ethics content, with the Medical Device Regulation and NIS2.

Osterwalder, A. and Pigneur, Y. (2010). Business Model Generation. Wiley. The model for this guide's canvases and page design.

European Commission (2022). DigComp 2.2 and the Digital Competence Framework for Educators (DigCompEdu). The competence frames the Ethical Engineer resources are aligned with.

Ethical Engineer project (2024). Ethical AI Case Studies and Starter Kit. The case studies that CVUT used as bootcamp challenges. www.ethicalengineer.eu

Ethical Engineer project (2025). Problem-Based Learning Open Educational Resources on AI and Robotics Ethics, with Teacher Guide. The reference material for participants. www.ethicalengineer.eu

Ethical Engineer project (2026). Ethical Engineer Bootcamp Guide, this document, in English, Czech and Latvian, with the online canvas templates. www.ethicalengineer.eu



www.ethicalengineer.eu

All project results, the canvas templates and the survey forms, free to download under open licences.



Contact

ACEEU (www.aceeu.org) for questions about the bootcamp methodology and translations.



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