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Strive for Distinctiveness
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REAL-LIFE PROJECT STUDIO: DESIGN, BUILD AND DEFEND A PROJECT THAT SOLVES A REAL PROBLEM

OIST Online · Engineering & Applied Sciences · course outline
Issued 22 November 2026

Level	**Intermediate**
Duration	**3 months**
Weekly effort	**About 6 hours a week (75 hours, 5 credit units)**
Content	**3 modules · 54 lessons · 50 h 5 min**
Format	**Online, self-paced**
Fee	**Free**
Certificate	**Certificate of Completion**
Instructor	**OIST Real-Life Project Faculty, Oyam Institute of Sciences and Technology**

A 12-week, step-by-step studio where you find a real client with a real need, design and build a working solution, test it, write a UVTAB-style real-life project report and defend it — then earn your OIST certificate.

WHAT YOU WILL LEARN

- Find a genuine community, client or workplace need and agree a project with a real client
- Use human-centred design (inspiration, ideation, implementation) to understand the people you serve
- Carry out interviews, observation and a site investigation, and turn findings into a clear problem statement and SMART objectives
- Write a project proposal with background, problem statement, objectives, scope and a short literature review
- Generate, compare and select design ideas, then produce technical drawings or 3D models with free digital tools
- Build and test a low-cost prototype with users and improve it from their feedback
- Prepare a bill of quantities, budget, Gantt chart and risk assessment before you start work
- Implement the project safely, keep a daily evidence log and test, commission and hand it over
- Write a complete real-life project report in the format used for UVTAB and UBTEB assessment
- Present and defend your project with confidence in a short video and a live viva

REQUIREMENTS

- Enrolled OIST student in any programme (Biomedical Engineering, Electrical Installation, Human Nutrition and Dietetics, Mortuary Science) — or a graduate who wants to complete a real project

- A smartphone with a camera (for interviews, photos and videos of your work)
- Internet access of about 1–2 GB a month to watch videos and upload evidence
- A notebook to use as your project logbook
- Access to your department workshop or laboratory and a supervisor for the practical work
- Willingness to go out and talk to real people in the community

ABOUT THIS COURSE

Why this course exists

Every semester, OIST students carry out a Real-Life Project that is assessed by UVTAB. Too often, projects are copied from old reports, chosen in the last week, or built without ever speaking to the people who will use them. This course changes that. In 12 weeks you will move from an empty page to a working, tested and well-documented solution for a real person or organisation in your community — and you will be able to explain every decision you made.

How it works

The course follows the human-centred design process taught by IDEO.org and Acumen Academy — Inspiration, Ideation and Implementation — and joins it to the step-by-step project and report structure used in Uganda's technical and vocational institutions.

- Month 1 — Discover: learn the mindset, find a real client, do fieldwork, and define the problem. You submit a project proposal.
- Month 2 — Design: generate ideas, design with digital and 3D tools, build a quick prototype, test it with users and plan the build (BOQ, budget, Gantt chart, risk assessment).
- Month 3 — Deliver: build the real thing safely, test and hand it over, write your report, and defend it.

What makes it different

- A real client, every time. A household, clinic, school, farm group, mortuary, health centre or small business — with a signed client agreement.
- Your Project Passport. A one-page living summary of your project that you update every week, so you, your supervisor and your client always know where the project stands.
- Studio crews. You work in a crew of 3–5 classmates who give each other feedback every week, but each learner owns and reports on their own project (or their clearly defined part of a crew project).
- Evidence as you go. Photos, short videos and logbook entries every week mean your report almost writes itself in Month 3.
- Current tools. Free 3D and circuit design (Tinkercad), smartphone surveys, spreadsheets for BOQs and Gantt charts, and interactive 3D models — plus clear rules for using AI tools honestly.
- Project tracks for Electrical, Biomedical, Nutrition and Mortuary Science learners, with examples from each.

Assessment and certificate

You will complete 11 weekly quizzes, 7 assignments (including your proposal, prototype video, implementation evidence, final report and video defence) and three timed exams. To earn the OIST Certificate of Completion, complete every lesson, pass each quiz and exam, and score at least 50% on every assignment. Your report and evidence are also ready for your UVTAB real-life project assessment.

Cover image: "Double Diamond design process" by Olga Carreras Montoto, CC BY 4.0, via Wikimedia Commons.

COURSE CONTENT

Module 1 · RLP-M1 · Month 1 — Discover: Find a Real Need and Define Your Project (1 credit units)

Weeks 1–4 (Inspiration). Learners adopt the human-centred design mindset, choose a real client and need, carry out interviews, observation and a site investigation, synthesise findings into a problem statement, objectives and scope, and submit a project proposal with a short literature review. Ends with the Month 1 exam.

#	LESSON	TYPE	MINUTES
1	Week 1 · Welcome to the Real-Life Project Studio (reading)	Reading	20
2	Week 1 · The Deep Dive: watch a team design in five days (video)	Video	25
3	Week 1 · Human-centred design: mindsets and a 60-minute mini challenge (reading)	Reading	45
4	Week 1 · Check your understanding: the HCD mindset (quiz)	Quiz	10
5	Week 2 · Seeing with fresh eyes: observation (video)	Video	10
6	Week 2 · Finding a real need, a real client and a project you can finish (reading)	Reading	40
7	Week 2 · Check your understanding: choosing a project (quiz)	Quiz	10
8	Week 2 · Assignment 1: Project Passport and signed client agreement	Assignment / exam	120
9	Week 3 · Discovery and empathy in the field (video)	Video	10
10	Week 3 · An empathy interview in action (video)	Video	5
11	Week 3 · Fieldwork toolkit: interviews, observation and site investigation (reading)	Reading	50
12	Week 3 · Check your understanding: fieldwork (quiz)	Quiz	10
13	Week 4 · Find the root cause with a problem tree (video)	Video	10
14	Week 4 · How to write a short literature review (video)	Video	5
15	Week 4 · From findings to a problem statement, objectives and proposal (reading)	Reading	50
16	Week 4 · Check your understanding: defining the problem (quiz)	Quiz	10
17	Week 4 · Assignment 2: Project proposal (Chapters One and Two)	Assignment / exam	300
18	Week 4 · Month 1 exam: Discover (timed)	Quiz	30

Module 2 · RLP-M2 · Month 2 — Design: Ideate, Prototype and Plan the Build (2 credit units)

Weeks 5–8 (Ideation). Learners generate and select ideas, produce technical designs with digital and 3D tools, build and test a quick prototype with users, then prepare the bill of quantities, budget, Gantt chart and risk assessment, and obtain client approval. Ends with the Month 2 exam.

#	LESSON	TYPE	MINUTES
1	Week 5 · What is design thinking? A quick refresher (video)	Video	5
2	Week 5 · An ideation session in action (video)	Video	5
3	Week 5 · Generate many ideas, then choose the right one (reading)	Reading	45
4	Week 5 · Check your understanding: ideation (quiz)	Quiz	10
5	Week 6 · Design in 3D with Tinkercad (video)	Video	10
6	Week 6 · Explore a 3D floor plan: how models communicate a design (3D)	3D model	15
7	Week 6 · Turn your concept into a technical design (reading)	Reading	50
8	Week 6 · Check your understanding: technical design (quiz)	Quiz	10
9	Week 7 · Rapid prototyping: Google Glass in a day (video)	Video	10
10	Week 7 · Build a quick prototype and test it with real users (reading)	Reading	45
11	Week 7 · Check your understanding: prototyping and testing (quiz)	Quiz	10
12	Week 7 · Assignment 3: Prototype and user-testing video	Assignment / exam	180
13	Week 8 · Plan your build with a Gantt chart (video)	Video	10
14	Week 8 · Safety first: explore a worker in full PPE (3D)	3D model	10
15	Week 8 · Bill of quantities, budget, work plan and risk assessment (reading)	Reading	55
16	Week 8 · Check your understanding: planning the build (quiz)	Quiz	10
17	Week 8 · Assignment 4: Design and Implementation Plan pack	Assignment / exam	300
18	Week 8 · Month 2 exam: Design (timed)	Quiz	30

Module 3 · RLP-M3 · Month 3 — Deliver: Build, Test, Report and Defend (2 credit units)

Weeks 9–12 (Implementation). Learners implement the project safely with a daily evidence log, test, commission and hand it over, write the full real-life project report in UVTAB/UBTEB format, and present and defend it in a video and viva. Ends with the final exam and certificate.

#	LESSON	TYPE	MINUTES
1	Week 9 · Build it right: safe implementation and your evidence log (reading)	Reading	45
2	Week 9 · See how a system fits together: a small solar power package (3D)	3D model	10
3	Week 9 · Explore a consumer unit: protection you can see (3D)	3D model	10
4	Week 9 · Check your understanding: implementation (quiz)	Quiz	10

#	LESSON	TYPE	MINUTES
5	Week 10 · Fast learning cycles: rapid prototyping for real impact (video)	Video	20
6	Week 10 · Explore a multimeter: your testing companion (3D)	3D model	10
7	Week 10 · Test, commission, improve and hand over (reading)	Reading	50
8	Week 10 · Check your understanding: testing and handover (quiz)	Quiz	10
9	Week 10 · Assignment 5: Implementation, testing and handover evidence portfolio	Assignment / exam	240
10	Week 11 · Report writing format: 7 tips for an effective report (video)	Video	15
11	Week 11 · Writing your real-life project report, chapter by chapter (reading)	Reading	60
12	Week 11 · Check your understanding: report writing (quiz)	Quiz	10
13	Week 11 · Assignment 6: Final real-life project report	Assignment / exam	600
14	Week 12 · TED's secret to great public speaking (video)	Video	10
15	Week 12 · Present, defend and showcase your project (reading)	Reading	40
16	Week 12 · Assignment 7: Video defence (5–7 minutes)	Assignment / exam	240
17	Week 12 · Final exam: the complete real-life project (timed)	Quiz	45
18	Week 12 · Congratulations: your certificate and what comes next (reading)	Reading	10

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