CLIL Module Plan

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School Grade	○ Primary		○ Middle		◉ High
School Year	○ 1	○ 2	○ 3	◉ 4	○ 5
Subject	Altro - Electrotechnics	**Topic**		Electrical Technology and Design	
CLIL Language	◉ English		○ Deutsch		

Personal and social-cultural preconditions of all people involved	Students of this class mostly come from Trentino with a few exceptions from East Europe and north Africa, both perfectly integrated. Students' disciplinary skills level is fairly homogeneous and their motivation is positive, although lacking inclination toward homework. The Electrical Technology and Design course is intended to develop technical and professional skills, practical abilities and designing expertise in the electric plant field. Reading English datasheets is part of their job. Module objectives: a) to give students the basic knowledge in terms of parameter units and technologies adopted in Lighting Design techniques; b) to enable students how to interpret technical data sheet used in Lighting Design; c) to activate students' competences in choosing materials (light bulbs) with regard to different technologies, performances, costs and environmental impact. Teacher's role: to introduce the topics to monitor activities, to support students during class tasks, to provide further explanations, to check the assigned exercises, to encourage the use of spoken English and to assess students' learning. The average CFR language level of students is B1. They have experienced CLIL activities. The teacher's CFR language level is C2.

Students' prior knowledge, skills, competencies	Subject	Language
	Students should have the following knowledge: -the notion of light as a wave; -how a waveform is described in terms of frequency and wavelength; -the notions of electrical impedance, current and voltage; -what is a diode/LED. Skills students should be able to: -read a Cartesian graph in linear or logarithmical scale; -read and understand the technical characteristics of electric components. Competences students learn how: to form a technical decision by comparing technical parameters.	Students should have the following knowledge: -comparatives and superlatives; -passive form; -relative clauses; -physics measurement unit; -scientific vocabulary pertaining physics electric subjects (they have previously been exposed to written materials in English, either in the English course or CLIL activities) Skills students should be able to: -watch and understand both the general meaning and the detailed information of videos contents; -Read and understand both the general meaning and the detailed information of short and at times also long written texts; -orally interact with classmates in pairs and group work, and with the teacher to ask for help and further explanations when necessary; -answer questionnaires on covered topics; -use both monolingual and bilingual dictionaries to look up and check specific vocabulary. Competences students can: -orally communicate in FL with a sufficient level reciprocal comprehension; -infer and distinguish relevant from specific information in the presented materials; -well structured short texts to express their thoughts.

Timetable fit	◉ Module	Length 20 hours

Description of teaching and learning strategies	Students are introduced to the topics by means of a variety of activities, mostly task-based, presented throughout the whole module. In addition, the improvement of the reading comprehension of technical texts and data sheets is a significant aim of the module, as a part of further professional work and university education. Excerpts of various length and relevant activities have been purposely included, trying not to burden the lessons flow. The course timetable allows back to back 100 minute-lessons, which ease the fully development of topics presentation. Students carry out their activities both in the regular classroom not designed for group work, and provided with one computer station and an interactive board, and in the laboratory. A booklet containing the materials used throughout the module will be handed out in the first lesson, and it is meant to provide the students with an overview of the contents presented and to present a clear reference for the activities introduced in the lessons. The module is intended for a fairly homogeneous disciplinary and English language level of the students and the language input is However, tasks are constructed to allocate the necessary space to go deeper in areas the cleverest students may be interested in either with some task expansions or with additional references. The employment of videos in this module facilitates the delivery of theoretical and descriptive contents helping the display of lighting components, of their application and of the physical phenomena involved. Videos with non British accent will not be avoided. In fact, it is assumed that students may come in touch with non English mother-tongue speakers during their working or future academic career. Use of a dictionary is recommended since the beginning of the module, even though occasional footnotes are included as a scaffolding. Lessons format consists of the following steps: -an introduction often recalling either previous knowledges or ou

Overall Module Plan

Unit: 1 Light, Vision and Photometry **Unit length:** Four Academic Hours (50 min)	**Lesson 1** What is Light?
	Lesson 2 Photometry

Unit: 2 Artificial Light Sources **Unit length:** seven academic hours (50 min)	**Lesson 1** Types of Artificial Light Sources
	Lesson 2 Technology of Artificial Light Sources
	Lesson 3 Technical Parameters
	Lesson 4 Choosing a Lamp

Unit: 3 Luminaires **Unit length:** seven academic hours (50 min)	**Lesson 1** Types of Luminaires
	Lesson 2 Controlling Light
	Lesson 3 Photometric Distribution Curves

Unit: 4 Conclusion **Unit length:** Three academic lessons	**Lesson 1** Crossword Contest
	Lesson 2 Final Assessment

CLIL Lesson Plan

Unit number	1	**Lesson number**	1	**Title**	What is Light?

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	12 min	Students become aware of module goals and procedures.	Teacher introduces module objectives, materials and procedures, and makes sure about students' comprehension of module aims by asking questions.	**Skills** L S R W **Key vocabulary** **Communicative structures** Instructions verbs and imperative mood.	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work	At the end of the introduction teacher hands out the whole booklet (or single lesson material)	

2	10 min	Students recall general terms related to light.	Brainstorming: Teacher writes the word “light” on the board, and asks students to suggest related terms. Students provide terms coming to their mind related to the suggested word and write them on to the board. Teacher asks students reasons for the words provided, explanations in case of unusual suggestions, and check spelling.	**Skills** L S R W **Key vocabulary** Spectrum, photon, wavelength, frequency, vision, electromagnetic radiation, nanometers. **Communicative structures** Can you write any word that comes to your mind related to …? If I say the word … what words can you think of? What’s the correct spelling for …?	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Blackboard or interactive board.	

3	15 min	Students understand of the basics of light physics, visible spectrum and visible curves as a statistic result.	Direct instruction Teacher presents a file on the interactive board containing images illustrating the lesson contents, and explains the topic. (Booklet page 1) Teacher checks students comprehension of the topic by eliciting questions. Then he has them fill in the file text with the missing words.	**Skills** L S R W **Key vocabulary** Spectrum, photon, wavelength, frequency, vision, electromagnetic radiation, nanometers. **Communicative structures** On the board you can see … While … On the contrary… On one hand … on the other hand. To sum up …	▣ Whole class ☐ Group work ☐ Pair work ▣ Individual work	Handouts (booklet), projected materials (pg. 1)	Ongoing assessment: monitoring of students' understanding
4	25 min	Students add further elements in their understanding of the presented contents.	Listening comprehension video-based Teacher projects a video on light physics and instructs students to fill-in a cloze text during the second screening. (Booklet page 2) Students complete the text first individually, then compare their answers in pairs. Teacher shows the correct answers during the third screening. Task 1_1	**Skills** L S R W **Key vocabulary** Spectrum, photon, wavelength, frequency, vision, electromagnetic radiation, duality, pico/nanometers. **Communicative structures** How did you fill numbered blanks … This word is more suitable than …	▣ Whole class ☐ Group work ▣ Pair work ▣ Individual work	Handouts (booklet), video: link Task 1_1	Formative assessment: final checking and relevant questions allow the comprehension of the lerning outcomes.

5	30 min	Students Consolidate their understanding of the subject and promote self assessment.	Teacher divides class into groups of three students each and asks them to work on a questionnaire in the booklet. Task 1_2 Student first answer individually, then compare their work and build up together the most suitable answers for the questions. Teacher monitors the activity by supporting the students' work, promotes the use of English, and leads the final students expositions of their answers.	**Skills** L **S** R **W** **Key vocabulary** Spectrum, photon, wavelength, frequency, vision, electromagnetic radiation, nanometers. **Communicative structures** What do you think? We haven't heard from you yet. ____'s idea. Do you agree? What answer did you get?	▣ Whole class ▣ Group work ☐ Pair work ▣ Individual work	Booklet Task 1_2	Self assessment about the whole lesson.
6	6 min	Consolidate and sort the understanding.	Teacher recaps what has been done, highlights some key words assigns homework (review and build up personal glossary).	**Skills** **L** S R W **Key vocabulary** Visible light spectrum, sensitivity curve, wavelength. **Communicative structures**	▣ Whole class ☐ Group work ☐ Pair work ☐ Individual work		

CLIL Lesson Plan

Unit number	1	**Lesson number**	2	**Title**	Photometry

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	30 min	Students understand the meaning of the photometry, the object of its study, and how it differs from radiometry. They also understand the definition of the photometry parametres.	Teacher introduces the relevance of photometry in the study of light as an instrument of its quantitative representation and the differences between photometry and radiometry. Teacher presents the topic explaining photometry basic concepts illustrated by a file on the interactive board. Then, he alternates direct instruction, short videos and filling-in exercises on the definition of the introduced concepts. Students answer individually then chek in pair. (Booklet, page 4)	**Skills** L S R W **Key vocabulary** Photometry, Luminous flux, Intensity, solid angle, Illuminance, steradiant, Luminance, efficiency, units of measure. **Communicative structures** P. deals with .... whereas ... The unit of maesure is .... per/on/upon	☒ Whole class ☐ Group work ☒ Pair work ☒ Individual work	Booklet, projected material and videos: link link link link	Ongoing: Teacher observes students' response to lesson and activities.

2	15 min	Students check what has been introduced in the previous step and get familiar with new vocabulary.	Matching Students carry out a matching activity first individually, then in pairs to check and compare their answers. Task 1_3 Teacher guides and monitors final checking of the activity, provides explanations for new vocabulary emerged in the activity and reviews the acquired concepts.	**Skills** L S **R** W **Key vocabulary** **Communicative structures**	☒ Whole class ☐ Group work ☐ Pair work ☒ Individual work	Task 1_3 (handout/booklet)	Ongoing: Teacher evaluates the understandig from task results
3	15 min	Students consolidate the understanding of the difference between photometry and radiometry.	Reading comprehension Students carry out a reading comprehension on the difference between photometric and radiometric units, in which they are asked to put in logical order several sections presented randomly. Task 1_4 Teacher guides the final checking of the activity and points out the difference emerged between photometry and radiometry.	**Skills** L **S** **R** W **Key vocabulary** light bulb, Photometry, radiometry Luminous flux, Intensity, Illuminance, Luminance, efficiency. **Communicative structures** referred to ...	☐ Whole class ☐ Group work ☐ Pair work ☒ Individual work	Task 1_4	Ongoing assessment: Teacher evaluates the understandig from task results

4	15 min	Test about the subject of the lesson	Students carry out a self-assessment activity on the acquired contents. Test 1 Teacher provides correct answers for the test.	**Skills** L S **R** W **Key vocabulary** **Communicative structures**	▣ Whole class ☐ Group work ☐ Pair work ▣ Individual work	Test 1	Self Assesment

5	10 min	Students become aware of information acquired and of the necessary specific vocabulary.	Teacher recaps the lesson contents, assigns homework and suggests further references.	**Skills** **L** S R W **Key vocabulary** **Communicative structures**	▣ Whole class ☐ Group work ☐ Pair work ☐ Individual work		

CLIL Lesson Plan

Unit number	2	**Lesson number**	1	**Title**	Types of Artificial Light Sources

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	3 min	Students verify their understanding.	Teacher ask students the solutions to homework, then check for the correct answers.	**Skills** L S R W **Key vocabulary** radiated, measurement, flux, illuminance, brightness, reflection. **Communicative structures**	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work		

2	18 min	Start using the specific vocabulary, relevant to the unit.	Teacher briefly introduces the topic through a picture showing several different types of lamp and focuses on the different substances and physics involved. Grid fill-in Students fill in a grid focusing on the different categories emerged in the teacher explanation. Task 2_1 Teacher checks students activity and provides further explanations if necessary.	**Skills** L S R W **Key vocabulary** Sodium, glow, bulb gallium, filament, oxygen, mercury incandescent, LED, fluorescent, tungsten, electrode, ultraviolet, tube. **Communicative structures**	☑ Whole class ☐ Group work ☑ Pair work ☑ Individual work	Booklet: projected material. Task 2_1	Students self assess their comprehension.

3	25 min	Students understand basic difference in physics of the main families of lamps	Teacher divides class into groups of three students each and presets through a video different types of lamps. Task 2_2 After the second screening, students work out together the answers for a questionnaire on the video contents. Teacher monitors the exposition of students' work to the class, checks the answers and leads a follow-up discussion.	**Skills** L S R W **Key vocabulary** Sodium, glow, bulb gallium, filament, Oxygen, mercury incandescent, LED, fluorescent, tungsten, electrode, ultraviolet, tube. **Communicative structures** used to be, keep from	☒ Whole class ☒ Group work ☐ Pair work ☐ Individual work	Projected video link , booklet. Task 2_2	Ongoing assesment: Teacher evaluate the actual understanding from task results.

4	40 min	Students, by a peer lerning practice, understand the different features and physics of main types of lamps, consolidate the vocabulary.	Peer learning based on reading comprehension Teacher divides class into groups of four students to perform a peer learning activity based on reading comprehension and further discussion on different types of lamps. Task 2_3 Each student in a group reads and works individually on a single section of a reading passage and presents/explains its content to the rest of his group. Each groups discusses the features of the different lamps and decides which one presents more advantages. Teacher eases the comprehension of the reading task and promotes the use of English in the groups interactions. Also, he provides some structures that may come convenient in students' expressions. A student from each group (chosen either by the fellow students or by the teacher) reports an account of the group work to the class.	**Skills** L S R W **Key vocabulary** Sodium, glow, bulb gallium, filament, Oxygen, mercury incandescent, LED, fluorescent, tungsten, electrode, ultraviolet, tube, quartz, arc, cathode. **Communicative structures** In my opinion … I believe … The way I see it… From my point of view It seems to me that… As far as I understand / That's for sure I agree with this opinion I couldn't agree more I disagree with you I don't think so No way	▣ Whole class ▣ Group work ☐ Pair work ▣ Individual work	Booklet Task 2_3	Ongoing assessment: Teacher evaluates the actual understanding by the explanations and answers of the students.

5	10 min	Students learn how to distinguish different types of lamps by their shape.	Students assign the correct name to different types of lamps showed on the picture task 2_4. Teacher checks with the class. Follows recapping and homework assignment.	**Skills** L S **R** W **Key vocabulary** bulb, filament, mercury incandescent, halogen, LED, fluorescent, arc lamp, cold cathode, ultraviolet, tube. **Communicative structures** What do you think? Do you agree? What answer did you get?	☒ Whole class ☐ Group work ☐ Pair work ☒ Individual work	Booklet: Task 2_4	This task is a quick instrument to verify the general comprehension of the lesson topic.

CLIL Lesson Plan

Unit number	2	**Lesson number**	2	**Title**	Technology of Artificial Light Sources

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	30 min	Students understand how fluorescent lamps work and are made.	Teacher introduces the topic, namely a follow-up of the previous lesson, meant to expand on the functioning of some of the lamps so far presented. Listening comprehension video-based. Teacher instructs the students to work individually to recognise a list of words while watching the first 5.50 minutes of a video on how fluorescent lamps function. Task 2_5 After the second screening students build up task questions cooperating in pairs. Teacher reviews and corrects students' answers and provides further explanations if necessary.	**Skills** L S R W **Key vocabulary** argon, electron, glow, thermoionic, starter, vaporize, powder, preheat, electrode, phosphor. **Communicative structures** Simple present with quite common verbs like: hit, emit, produce, activate, behave, stay, start, heat. … that results in …	☐ Whole class ☐ Group work ☑ Pair work ☑ Individual work	Booklet: projected video: link Task 2_5	Self assesment: At the end of the activity a student, out of each group, provides an account of their outcomes. Teacher checks and corrects.

2	20 min	Students learn about ballasts, what they are useful to, which types are available, and about their Factor.	Listening comprehension video-based. Teacher divides up the class into groups of three/four students and projects a video on ballast accompanied by a questionnaire. Task 2_6 Students discuss the video contents according to the task questions and then cooperate to provide the group answers for the questionnaire. Teacher monitors the activity, supports the interaction in English and guides the following discussion by eliciting groups explanations for their answers.	**Skills** L S R W **Key vocabulary** Ballast, instant start, ballast factor **Communicative structures** Bics are enough to express the whats and the whys.	☑ Whole class ☑ Group work ☐ Pair work ☐ Individual work	Booklet, projected video link Task 2_6.	Self assessment: At the end of the activity a student, out of each group, provides an account of their outcomes. Teacher checks and corrects.
3	10 min	Students learn about LED lamps are and how light is generated through them.	Direct instruction Teacher explains how light is generated in a LED and the main features of a LED lamp.	**Skills** L S R W **Key vocabulary** LED, silicon, bias, junction, recombine, band gap, photon, energy. **Communicative structures** Simple present with descriptive verbs like: hit, emit, produce, bias, behave, pass, start, heat.	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Projected material from the booklet	

4	25 min	Student practice the comparison among lamps performances and start reading their parameters.	Teacher divides up the class into group of three students each to first discuss the features of the lamps studied so far, according to the task questions. Task 2_7 Each group compare the outcomes of the discussion with the table providing the typical data for the three main types of lamps. Teacher monitors the activity by both encouraging the interaction in English and providing technical support, then guides the final expositions of the groups findings.	**Skills** L S R W **Key vocabulary** Durability, sensitivity, efficacy, lifespan. **Communicative structures** In my opinion … I believe … The way I see it… From my point of view It seems to me that… As far as I understand /	☐ Whole class ☒ Group work ☐ Pair work ☐ Individual work	Booklet: Task 2_7.	sel assessment: At the end of the activity a student, out of each group, provides an account of their outcomes. Ongoing: Teacher checks and corrects.

5	10 min	Students become aware of the comparing competence acquired and of the necessary specific vocabulary.	Teacher:briefly recaps the lesson contents focusing on the features of different types of lamps, then he assigns homework, Then he assigns homework a query on the Internet on which the following lesson will be based.	**Skills** L S R W **Key vocabulary** Sodium, glow, bulb, filament, oxygen, mercury, incandescent, fluorescent, tungsten, electrode, tube, gallium, Oxygen, tungsten, electrode, ultraviolet, quartz, arc, cathode, LED, silicon, bias, junction, band gap, photon. **Communicative structures**	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Booklet: homework.	

CLIL Lesson Plan

Unit number	2	**Lesson number**	3	**Title**	Technical Parameters

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	10 min	Students verify their understanding of the parameter Luminous Efficacy. This is also the starting point of this lesson focused on technical parameters.	Homework check Teacher asks a few students to report the outcomes of their Internet query. Students provide an oral account of their research. Teacher provides an appropriate feed-back to the students accounts along with some correction where necessary.	**Skills** L S R W **Key vocabulary** Luminous Efficacy **Communicative structures** The meaning of ... is... You can calculate its value by the ratio...	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work		Teacher receives e feedback of a specific point and about students' home engagement.

2	15 min	Students Learn the meaning of main parameters of lamps.	Interactive instruction Teacher shows a well-thought through map of technical parametres on the interactive board, and illustrates its contents by both eliciting students questions and providing the relevant information of the parametres.	**Skills** L S R W **Key vocabulary** Luminous efficacy, drop in, color rendering index; service life; dimmability **Communicative structures** The meaning of … is This is intended for …	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Projected picture from booklet pg 20.	Ongoing
3	20 min	Students consolidate vocabulary and general understanding of technical parametres.	Cloze-test Students carry out individually a cloze-test on bulbs and technical parameters. Task 2_8 Teacher checks the students' answers.	**Skills** L S R W **Key vocabulary** correlated color temperature, lumens, CRI, lamps, candle, fluorescent, lumens; color rendering index, efficacy, metrics, wattage consumption. **Communicative structures**	☐ Whole class ☐ Group work ☐ Pair work ☑ Individual work	Booklet: Task 2_8	Formative: Tasks' results provide an account of what they have lernt.

4	5 min	Students consolidate the understanding of the technical parametres so far practiced.	Teacher recaps the main contents of the lesson. Then he assigns Test_2 and the “LED optical properties” reading as homework, recommending an accurate self-checking of their answers, which will work as a review of general contents.	**Skills** L S R W **Key vocabulary** Luminous efficacy, CRI, Ra, color rendering index; service life; dimmability. **Communicative structures**	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Booklet: Test 2.	

CLIL Lesson Plan

Unit number	2	**Lesson number**	4	**Title**	Choosing a Lamp

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**

1	15 min	Students reinforce technical parametres contents.	Test_2 checking Teacher checks the test assigned as a homework and elicits further questions and provides further explanations as a feed-back.	**Skills** L S R W **Key vocabulary** correlated color temperature, lumens, CRI, lamps, candle, fluorescent, lumens; color rendering index, efficacy, metrics, wattage consumption.Luminous efficacy, CRI, Ra, color rendering index; service life; dimmability. **Communicative structures** What do you think? We haven't heard from you yet. ____'s idea. Do you agree? What answer did you get?	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Solutions in Final materials.	Formative: Test results provide an assessment of general understanding of the previous lessons.

2	30 min	Students learn how to build a simple LED lamp and its advantages	Teacher writes key vocabulary on the blackboard explaining the non intuitive meanings (on request), then projects a video illustrating how to build a lamp. Task 2_9 Students answer the a questionnaire on the video individually after the second screening and then compare their answers in pairs. Teacher checks the students' answers and provides further explanations.	**Skills** L S R W **Key vocabulary** Housing, PCB, light diffuser, soldering iron, thermal paste, flat head screw, awl **Communicative structures** up to (often used in the video)	☐ Whole class ☐ Group work ▣ Pair work ▣ Individual work	Booklet: Projected Video: link blackboard, Task 2_9.	Teacher evaluates the actual understanding from task results

3	45 min	Students improve their competences in choosing lamps in different scenarios. Also, they understand which factors should be considered in the given environmental conditions.	Case study activity Teacher divides up class into groups of students each and asks them to work individually in the first step of the activity, and work in group in the second step to compare their findings. Task 2_10 Students carry out the first step of the activity by analysing the features of several types of light sources according to the information provided by the image. Then, they make a decision about the appropriate type of light source based on the three scenarios they are presented with, and take notes about their decisions. Finally, they compare and discuss their decisions with the rest of their groups. Teacher monitors students expositions of their decisions to the class highlighting pros and cons of their choices.	**Skills** L S R W **Key vocabulary** Fluorescent, incandescent, halogen, LED, Xenon, efficiency, lifetime, color temperature. **Communicative structures** I'll…. I don't/think that the best option… In my opinion the best solution is… I find suitable/appropriate to adopt… I find --- more effective than… I prefer to…. What do you think? We haven't heard from you yet. ____'s idea. Do you agree? What answer did you get?	☒ Whole class ☒ Group work ☐ Pair work ☒ Individual work	Projected material, booklet, dictionary	Self assessment

4	5 min		Teacher recaps the activities contents asking for students' opinion and assigns homework.	**Skills** L S R W **Key vocabulary** Efficiency, color temperature, Ra, life. **Communicative structures**	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work		

CLIL Lesson Plan

Unit number	3	**Lesson number**	1	**Title**	Types of Luminaires

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	8 min	Students reinforce " Choosing a Lamp" lesson's contents.	Teacher checks the assigned homework and elicits further questions and provides further explanations as a feed-back	**Skills** L S R W **Key vocabulary** Fluorescent, incandescent, halogen, LED, Xenon, efficiency, lifetime, color temperature. **Communicative structures**	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work		Test results allows an (self) assessment of general understanding.

2	10 min	Students learn about a luminaires and the relevant vocabulary about the lesson.	Teacher introduces the topic by showing an image with different types of light fixtures and the specific vocabulary that defines them.	**Skills** L S R W **Key vocabulary** Luminaire, light fixture, light fitting, fixed, portable, suspended, recessed, track lighting, wall sconce. **Communicative structures** Basic descriptive pattern Such as: here you can see	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Projected picture from booklet: link	Ongoing: Teacher monitors students' reactions and interactions.
3	25 min	Students learn the functions of luminaires and consolidate vocabulary.	Listening comprehension video-based Teacher presents the video anticipating its contents and explaining the task instructions. After the second screening students answer individually true/false and openended questions, and then compare their answers in pairs. Teacher monitors the activity and encourages the oral interaction in English, then he guides the answers check. Task 3_1	**Skills** L S R W **Key vocabulary** Merchandise, high bay, hospitality lighting, retail, portable, suspended, recessed, track lighting. **Communicative structures**	☑ Whole class ☐ Group work ☑ Pair work ☑ Individual work	Projected video and booklet. link	Teacher evaluates the actual understanding from task results

4	3 min		Teacher recaps the topic contents and recommends students to updates the glossary due to the emergence of relevant specific vocabulary during the lesson.	**Skills** L S R W **Key vocabulary** Luminaire, light fixture, light fitting, fixed, portable, suspended, recessed **Communicative structures** The main point(s) is/ are… The point that _____ makes is related to _____ in that….. The significance of _____ is…..	▣ Whole class ☐ Group work ☐ Pair work ☐ Individual work		

CLIL Lesson Plan

Unit number	3	**Lesson number**	2	**Title**	Controlling Light

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**

1	40 min	Students understand how the distribution of luminous flux is obtained in luminaires	Learning by “doing” reading and video-based Teacher introduced the topic focusing on the functions of flux distribution of luminaires, and divides up the class in groups of three students each. Task 3_2 Student groups read a text on the categories of luminaires based on their flux distribution and compare the definitions with the image associated to the text. Then, on intuitive base, groups employ the useful expressions below text to understand and discuss to provide a temporary answer on how the different types of luminaire fluxes can be produced. Teacher encourages the interaction in English and provide explanations on the useful expressions if necessary. Then, he projects a video on the techniques of flux distribution. Groups reconsider their solutions previously provided and modify their answers if necessary. Teacher checks the exposition of students’ answers and provides corrections where necessary.	**Skills** L S R W **Key vocabulary** Direct, indirect, semi-direct, diffuse lighting, specular reflection; parallel, convergent and divergent beam. **Communicative structures** Ranges from … to…	☑ Whole class ☑ Group work ☐ Pair work ☐ Individual work	Booklet and video link	Ongoing assessment: Teacher evaluates the actual understanding from task results

2	15 min	Students consolidate the knoledge of different types of light distribution.	Teacher divides up the class into groups of three and explain the activity instructions. Task 3_3 tudent analyse a datasheet describing different types of flux distributions for some luminaires, and decide which category of flux distribution they belong to. Teacher checks students answer.	**Skills** L S R W **Key vocabulary** Direct, indirect, semi-direct, diffuse lighting, specular reflection; parallel, convergent and divergent beam. **Communicative structures** In my opinion ... I believe ... The way I see it... From my point of view It seems to me that... As far as I understand	☒ Whole class ☒ Group work ☐ Pair work ☐ Individual work	Booklet Task 3_3	Self assessment: At the end of the activity a student, out of each group, tells their outcomes.

3	25 min	Students Understand the physics of light distribution	Pre-listening activity Teacher draws students' attention to the key words "currugated", "hammered", "etched", "tarnished surface" written on the board, and invites them to make some guessing about their meaning, as the key words will be recurrent in the understanding ofthe video of the following activity. Then, he projects a video on physics of light distribution. Task 3_4 After the second screening, students individually answer a questionnaire on the video contents. Teacher corrects students answers and provides further explanations.	**Skills** L S R W **Key vocabulary** Reflected light, incident light, specular, diffuse, mixed reflection, spread reflection; currugated, hammered, etched, matt painted, tarnished surface. **Communicative structures**	☐ Whole class ☐ Group work ☑ Pair work ☑ Individual work	Booklet and video link	Ongoing assessment: Teacher evaluates the actual understanding from task results
4	5 min	Students consolidated the lesson contents.	Teacher briefly recall the light effects involved in flux distribution.	**Skills** L S R W **Key vocabulary** Reflection, diffusion, diffraction. **Communicative structures** The main point(s) is/ are… The point that _____ makes is related to _____ in that….. The significance of _____ is…..	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work		

CLIL Lesson Plan

Unit number	3	**Lesson number**	3	**Title**	Photometric Distribution Curves

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	15 min	Students understand what are Photometric curves how they are represented and what they are useful to.	Direct instruction Teacher briefly introduces the topic on photometric distribution curves. Then, he presents a file on the interactive board containing images illustrating the representation and function of photometric curves (Booklet page 34), explains the topic, and asks students questions to check their comprehension of the topic.	**Skills** L S R W **Key vocabulary** Photometric solid, intensity, axis, symmetry, plane, coordinates, polar. **Communicative structures** The main point(s) is/ are… The significance of _____ is… We can interpret _____ as …. on After a thorough analysis _____ we conclude that…. This ____ is significant because… We need to identify …	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Booklet: projected materials link	Ongoing assessment: Teacher monitors students' reactions and interactions.

2	20 min	Students Consolidate the understanding and the vocabulary of the topic.	Teacher shows students some images on linear and flux distribution, then asks students to work in pair to describe each other the picture related to the topic. Task 3_5	**Skills** L S R W **Key vocabulary** Photometric solid, intensity, axis, symmetry, plane, coordinates, polar. **Communicative structures** We can interpret _____ as …. I agree/disagree with _____that . . . idea. As ____already mentioned… In the pictures we can see …. The picture above represents ….	☐ Whole class ☐ Group work ☑ Pair work ☐ Individual work	Booklet: Task 3_5	Ongoing assessment: Teacher evaluates the actual understanding from task interaction

3	20 min	Students recall and consolidate lesson contents and vocabulary.	Cloze-text activity Students carry out a cloze-text activity related to the images of the previous activity. Task 3_6 Teacher checks students answers and recaps lesson contents.	**Skills** L S **R** W **Key vocabulary** fixture, axis, flat, reflector, pendant, Candela, luminaire, intensity, 0-180°, central, beam, lux. **Communicative structures**	☐ Whole class ☐ Group work ☐ Pair work ☒ Individual work	Booklet: Task 3_6	Self Assessment: students evaluate their knowledge from task result.

4	15 min	Organize the activity for the next lesson CROSSWORD.	Teacher explains how to carry out the assignment, which will be used for a class contest among four teams. Each team of students is assigned to build a crossword using words taken from the glossary they have been updating throughout the module. Students may recur to well-known web sites crosswords maker.	**Skills** **L** **S** R W **Key vocabulary** **Communicative structures** Instructions verbs and imperative mood.	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Booklet Homework	

5	15 min	Students self-assess the comprehension of the module topics.	Students carry out a test based on True/False and Multiple Choice exercises. Test 3 Teacher checks the answers, providing further explanations.	**Skills** L S **R** W **Key vocabulary** **Communicative structures**	☐ Whole class ☐ Group work ☐ Pair work ☑ Individual work	Booklet: Test 3 Solutions in final materials	Formative assessment

CLIL Lesson Plan

Unit number	4	**Lesson number**	1	**Title**	Crossword Contest

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	100 min	Students review all past acquired topics through a ludic experience.	The four/five teams of students take turn to present each other their Crossword puzzles. Contestants raise their hands to answer. Each correct answer scores one point. Teacher acts as the referee and proclaims the winning team.	**Skills** L S R W **Key vocabulary** The whole module vocabulary is involved. **Communicative structures**	☒ Whole class ☒ Group work ☐ Pair work ☐ Individual work	Produced by the students and projected.	Teacher receives e feedback about students' home engagement.

CLIL Lesson Plan

Unit number	4	**Lesson number**	2	**Title**	Final Assessment

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	50 min	Teacher assesses and evaluates students' acquisition of module contents.	Teacher administers a summative test on the main module topics and including a variety of activities presented throughout the module.	**Skills** L S **R** **W** **Key vocabulary** **Communicative structures**	☐ Whole class ☐ Group work ☐ Pair work ☑ Individual work	Not included in the material.	Summative assessment.