LECTURE PLAN	
Lecturer's name: M.Sc. Eng. Dariusz Rudzki	**Duration:** 45 min (1 lesson unit)
Subject: Installation and exploitation wire wide area networks	
Grade level: 2nd-3rd grade of the four-year technical secondary school	
Topic: Optical fibre connection and splicing	
Aims of lecture: students will familiarize with fundamental knowledge about an optical fibre through the fibre optic tooling & fusion splicing	

Lecture objectives:

– recall the workshop safety rules,
– identify an optical fibre construction and types,
– recognize fibre optic connectors,
– define an optical fibre main parameters,
– describe a method of transmitting information in an optical fibre,
– comparison of a mechanical and a fusion method of an optical fibre splicing,
– name the fibre optic test equipment and tools for splicing,
– demonstrate the steps of an optical fibre splicing through an instructional video,
– discussion on common problems and mistakes that arise while an optical fibre splicing.

Assumed prior knowledge: fundamental knowledge of optical physics about the properties of light and its interaction with matter, such as reflection, refraction, diffraction and interference.

Resources: whiteboard, whiteboard dry erase markers, lecture plan proformas per person, the lecture notes about an optical fibre as handout, computer & projector for a MS PowerPoint presentation, set of fibre optic test equipment and fusion splicing tool kit.

Assessment (how learning will be recognized):

– lecture planned in a school workshop,
– lecturer observation,
– lecture plan produced.

Differentiation (addressing all learners' needs): work in pairs or in small groups and individually completing tasks,
different learning styles – **visual** – MS PowerPoint presentation and the lecture notes about an optic fibre as handouts, **auditory** – listening and speaking in pairs

Skills for life / key skills to be addressed:

- cooperation in international pairs,
- extending knowledge of optical physics about the properties of light in a practical way,
- selecting appropriate equipment and tools to use while fibre splicing methods,
- developing practical skills in preparing and optical fibre splicing by mechanical or fusion methods

Content and lecturer's activity:

1. check student attendance,
2. tell students topic, goals and aims of the lecture,
3. introduction to a fibre optic cable theory,
4. randomly place students from list into groups,
5. hand out and familiarize with the test equipment and tools for an optical fibre fusion splicing,
6. recall safety rules before starting the task,
7. wear safety glasses with side shields,
8. explain the manner of realization of the task (instructional video of an optical fibre splicing),
9. students start realisation of the task follow the lecturer's instructions,
10. test the insertion loss of a fusion spliced optical fibre,
11. return the test equipment and tools,
12. clean up organize workspace if there is a mess,
13. answer for any student questions related to the lecture.