

# **Road Engineer Qualifications System**

**Tiit Metsvahi**

# Levels of Road Engineers

- Primary qualification of civil engineer of road buildings (EKR level 6)
- **Civil engineer of road buildings (EKR level 6)**
- Primary qualification of diploma civil engineer of road buildings (EKR level 7)
- **Diploma civil engineer of road buildings (EKR level 7)**
- **Chartered civil engineer of road buildings (EKR level 8)**
- While obtaining the primary qualification practical experience is not mandatory, which is why occupations are not defined.
- Primary qualification is termless.

# Knowledges and skills

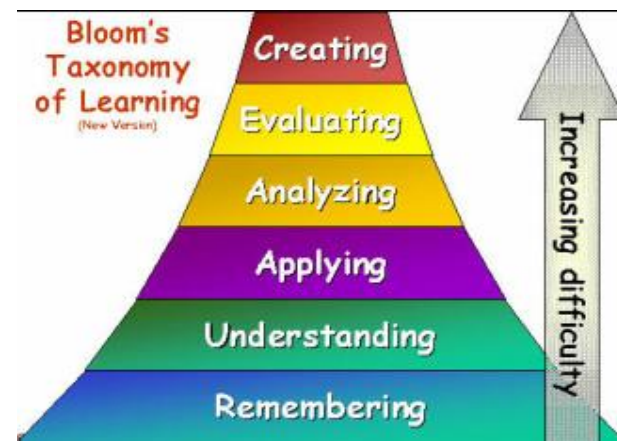
Having finished the study of the course (subject) a student:

- knows and understands...
- is able to use...
- is able to apply...
- is able to make...
- is familiar with...
- understanding...
- overview about...
- .....

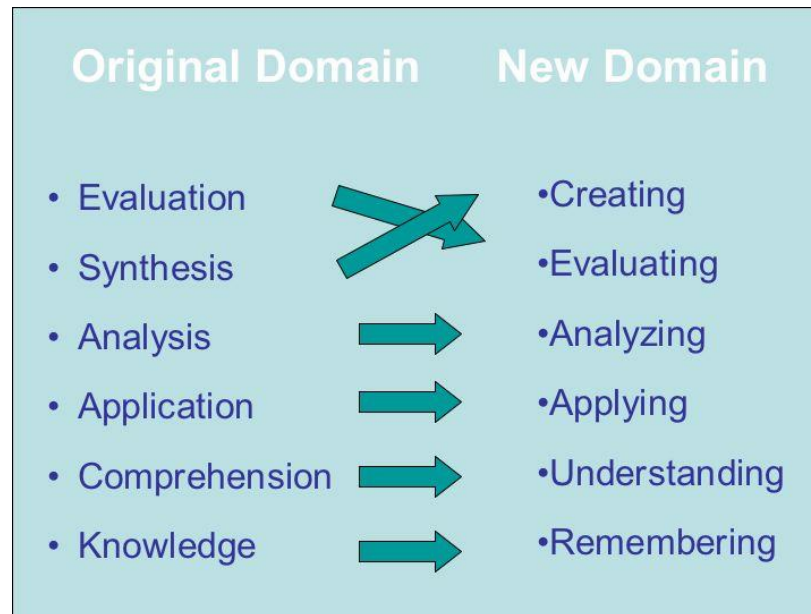
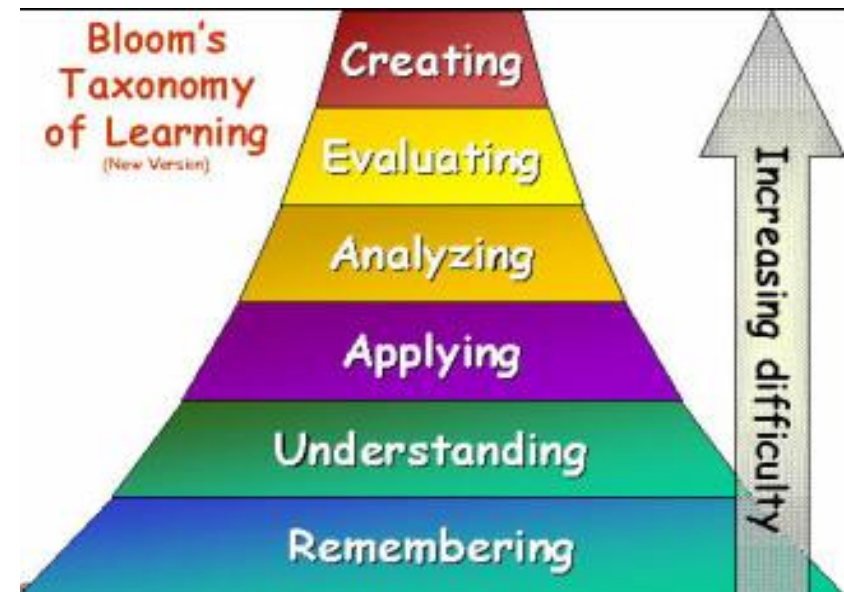
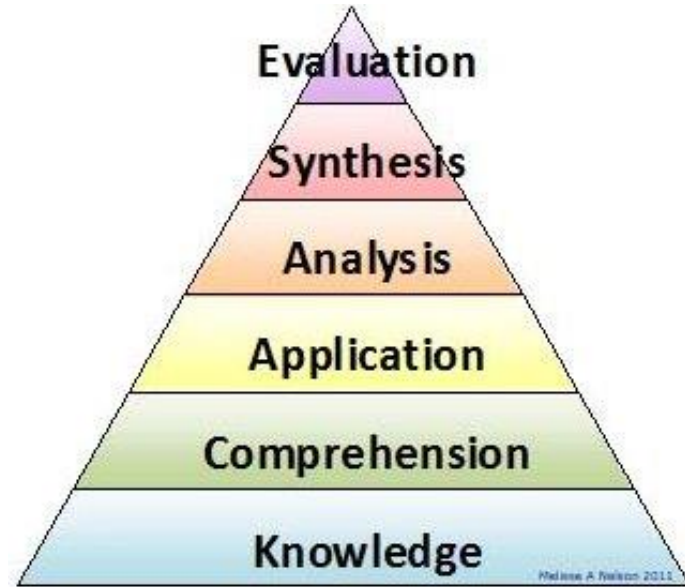
- is competent of making calculations...
- have a skill to design...

Course learning outcomes

Learning outcomes used in practice



# Bloom's Revised Taxonomy



# Assessment of competency

- **An applicant's suitability is assessed in complex according to the documents presented to the profession's committee according to "The procedure of issuing the profession of construction engineering", his competency is regarded as a whole.**
- **When assessing the knowledge of a road engineer the principle that he has acquired the knowledge in his studies and has used most of it in practice, and that **if necessary is capable of restoring and amending them is followed.****



# **PART A**

## **PROFILE OF THE QUALIFICATION**

**A.1 Job description (Appendix 2 “General characterisation of civil engineers of road buildings levels of qualification ”)**

**A.2 Elements of the job (Appendix 3 “Parts of job and tasks ”)**

**A.3 Job environment and speciality**

**A.4 Devices needed**

**A.5 Personal characteristics for the job**

**A.6 Professional preparation**

**(Appendix 5 “Minimum requirements for skills and knowledge”,**

**Appendix 6 “Minimum requirements for work experience ”,**

**Appendix 7 “Presumptions for applying for the qualifications of engineers”,**

**Appendix 8 “Special cases when applying for the qualification of a diploma civil engineer of road buildings ”)**

**A.7 More common job titles**

**A.8 Regulaions for operating at a job market**

**(Appendix 11“Road engineer’s range of authorisation in the field of engineering of road buildings “ (in each level own))**

# **PART B**

## **REQUIREMENTS FOR COMPETENCY**

**B.1 Structure of the profession**

**B.2 Competency required while applying for the qualification**

**B.2.1 Knowledge and skills**

**B.2.2 Special and profession related skills and experience**

**B.2.3 Attitudes necessary for the profession of an engineer**

- **Professional ethics**
- **Readiness for cooperation**
- **Personal development (lifelong learning)**
- **Environmental performance**

**B.2.4 Assessment of competency** („The procedure of issuing the profession of road engineering” )



# **Study Road Engineering Programmes**

## **Faculty of Civil Engineering**

- **Engineering study (5 years)**
- **Master study (2 years, students mostly after bachelor 4 years study form TTK University of Applied Sciences)**
- There is no bachelor study civil engineering programmes in TUT

# Road Engineering and Geodesy

## study programme version structure

• Graduation thesis	30.0
• Core studies	79.0
• Basic studies	55.0
• General studies	35.0
• Free choice courses	12.0
• Special studies	89.0
<b>Total</b>	<b>300.0</b>

[https://ois.ttu.ee/pls/portal/ois2.ois\\_public.main](https://ois.ttu.ee/pls/portal/ois2.ois_public.main)

**GENERAL INFORMATION AND APPENDIXES**

**C.1. Information about the composition and affirmation of the standard, about the issuer of the profession and a reference of the location of the professional standard in classificators**

**C.2 Name of the profession in a foreign language:**

*Civil Engineer in road engineering (6. level)*

*Diploma Civil Engineer in road engineering (7. level)*

*Chartered Civil Engineer in road engineering (8. level)*

**C.3 Profession specific terms used in the standard of qualification (domain of engineering, speciality, sub-speciality, occupational activity)**

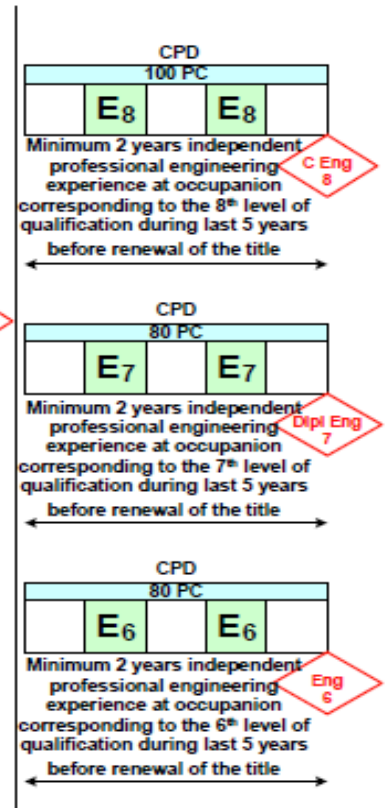
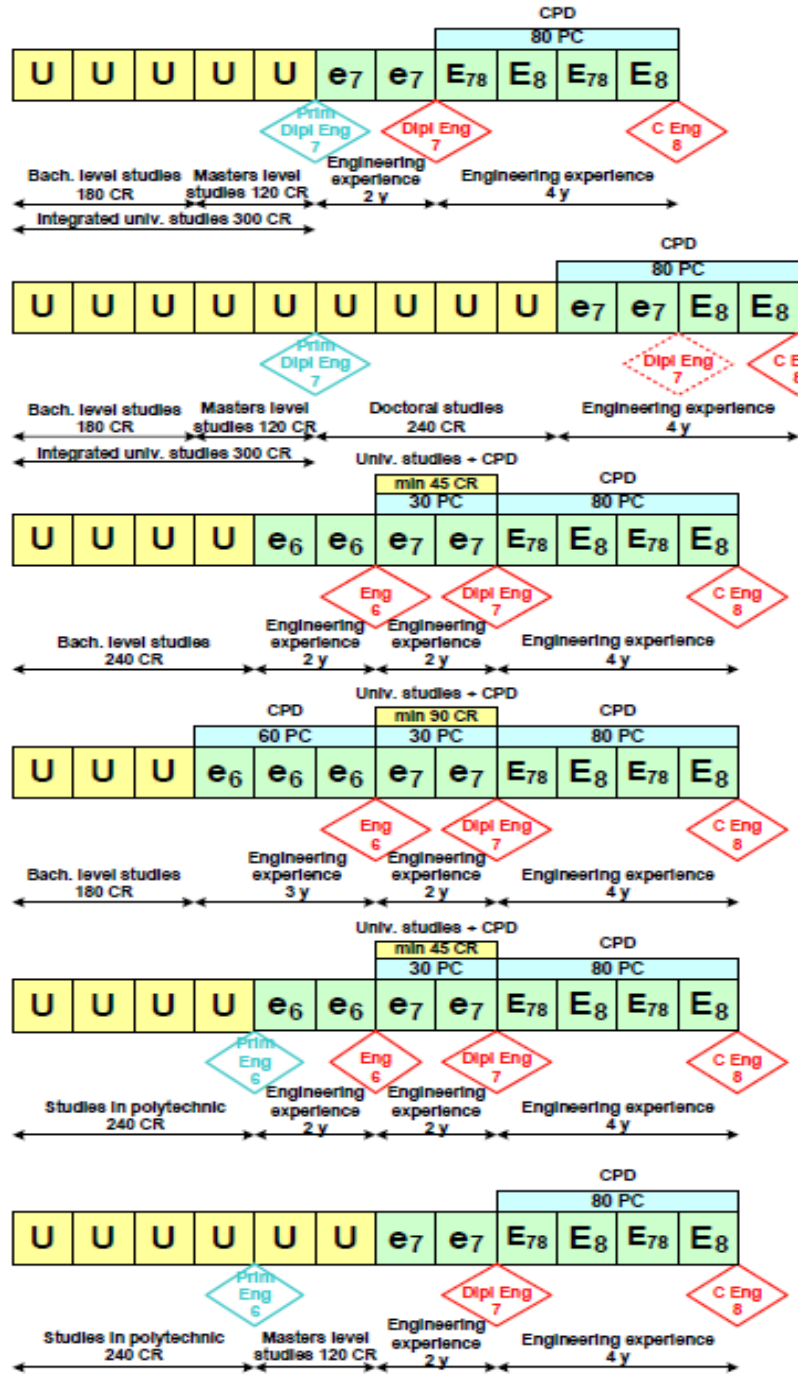
**C.4 Appendixes**

## C.4 Appendixes

1. List of specialities, sub-specialities and occupational activities in the field of construction
2. General characterisation of civil engineers of road buildings levels of qualification
3. Parts of job and tasks
4. Code of engineer's occupational ethics and behaviour
5. Minimum requirements for skills and knowledge
6. Minimum requirements for work experience
7. Presumptions for applying for the qualifications of engineers
8. Special cases when applying for the qualification of a diploma civil engineer of road buildings
9. Consideration of the continuous professional development of engineers
10. Description of language reference levels
11. Diploma engineer's range of authorisation in the field of engineering of road buildings

**Standard**

**PRESUPPOSITIONS WHILE APPLYING FOR THE QUALIFICATION OF AN ENGINEER**



**SYMBOLS:**

- U - 1 academic year (ca 60 ECTS credits) of studies given by polytechnic or by university
- e<sub>n</sub> - 1 year of engineering experience at appropriate occupation level
- E<sub>n</sub> - 1 year of independent professional engineering experience at appropriate occupation level
- CR - ECTS credits awarded at the appropriate level of education;
- PC - credits of continuing education; 1 PC = 1 academic hour of training courses instructed or educated by engineer of the 8<sup>th</sup> level of qualification

# PROBLEMS?

## WHY THERE IS SO MANY DIFFERENT WAY'S?

- Education from different universities
- Different curricula
- Different way's for higher degree or university refresher
  
- Re-specialisation from other specialities of civil engineering or mechanics

# Continuous professional development of road engineers in TUT

- **Courses based on road engineers competence standards**
- **Training courses for road safety auditors**  
(6 day's for maiden training and 3 day's for periodic further training );
- **Courses based on new Estonian standard „Urban streets“**
- **Different specific courses**

Thanks!

