

I. IDENTIFICATION DATA

Thesis title:	Návrh zavěšeného mostu přes Vltavu v Praze z hlediska postupu výstavby.
Author's name:	Yazan Amri
Type of thesis :	master
Faculty/Institute:	Faculty of Civil Engineering (FCE)
Department:	Concrete and Masonry Structures
Thesis reviewer:	Ing. Milan Petřík
Reviewer's department:	Mott MacDonald spol. s r.o., Národní 984/15, 110 00 Praha 1

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	extraordinarily challenging
Diploma thesis deals with a cable-stayed bridge design with consideration of construction sequence. The cable-stayed bridge design is significant and challenging task for diploma thesis, especially with consideration of the construction sequences.	

Fulfilment of assignment	fulfilled with minor objections
The thesis consists of short research on the cable-stayed bridges and a design of three-span cable-stayed bridge. The structure is modelled in FEM software, where both the assessment and construction sequences are considered and assessed in the software. Some additional effects and elements are designed on separate models and some using software Statica Idea. The cross section, pylon, ties and piers are simplified, designed and assessed as well. The bridge design is excessive part of the work. The assigned tasks are fulfilled with some simplifications and objections summarized below.	

Methodology	partially applicable
The approach to the design of cable-stayed bridge is somewhat simplified, some of the assessments and effects are not fully shown and can not be clearly checked, especially when software checks are used only. Some of the internal forces distributions shows the structure is not balanced as expected. Bridge foundations are not designed.	

Technical level	D - satisfactory.
The research part is insufficient. It would be more appropriate to use multiple resources and especially self-written texts and thoughts not only copy/paste the literature. The main part of the thesis includes excessive amount of work, however it is somewhat incomplete and inconsistent. All the assessments are satisfactory, but the structure doesn't seem to be design correctly. There are some effects discussed and shown and should be used in the design, however it is not clear how were they implemented and some of the internal force distributions doesn't seem to be as expected and unbalanced. The drawings shown in the appendix are really sketches and they don't show details one would expect in the diploma theses. General arrangement drawings are very simplified, and a lot of the details are not thought through. The section outlines and the reinforcement detail doesn't seem to be appropriate and constructable. The thickness of the webs and slabs in the section does not seem appropriate and the reinforcement completely insufficient.	

Formal and language level, scope of thesis	C - good.
Formally the research part should be divided from the bridge design and some of the wording and sentencing is not ideal. However, text is clear enough and easily understandable.	

Selection of sources, citation correctness**E - sufficient.**

Research part of the thesis is very short, 10 pages in total, and it is not divided from the specific bridge design. It seems most of the research part of the thesis is copied from the literature (with the citations) but there are almost no texts composed by the student. There are various titles in the reference list, but it seems the student used only one or two for the research. Many of the standards used for the design are missing in the reference list.

Additional commentary and evaluation (optional)

The theses show a lot of different aspects and assessments of the cable-stayed bridge however all the assessments are done in the software and are not conclusive. It is recommended the student show and fully explain the used design methodology and approach in the final presentation.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

The diploma thesis consists of extremely short research and excessive bridge design. However, the design methodology doesn't seem right and some of the assessments and internal force distributions seem incorrect. The drawings are very low in quality and the presented bridge would deserve more proactive approach.

With reference to the thesis, I have several questions which should be answered in the discussion:

- How did you assessed the cross section, how did you dealt with shear and normal force – bending moment combination?
- How the exchange of the temporary and permanent prestressing steel is considered, and how it would be dealt with during construction?
- How is the pylon assessed? How It would be connected to the diaphragm.

The grade that I award for the thesis is **D - satisfactory**.

Date: **27.1.2022**

Signature: