

**UNIVERSITY OF THESSALY**  
**DEPARTMENT OF CIVIL ENGINEERING**

Course: **ENGINEERING GEOLOGY** – Semester: **3d (year 2)** – Academic year: **2010-2011**

Course Instructor: **IOANNIS CLAPSOPOULOS** – Librarian: **MARIOS BALATZARAS**

**ASSIGNMENT TITLE:**

***SELECTING A SPECIFIC BUILDING CONSTRUCTION SITE BASED ON THE GEOLOGICAL MAP ANALYSIS OF THE SITE AREA: A TECHNICAL REPORT (Final assignment)***

**A. ASSIGNMENT LEARNING OBJECTIVES:**

1. Understand and analyse geologic structure in a specific map area
2. Locate information resources (identify keywords – define search strategies) relating to the impact the geologic structure could have on the assignment's construction project
3. Summarise and compare retrieved information with previous knowledge in order to form a proposal to solve the stated problem
4. Use a standard style to cite resources
5. Produce a complete technical report proposing possible solutions to a given geologic problem/s.

**B. ASSIGNMENT DETAILS:**

Within the shaded area of the attached geologic map an industrial steel factory building with the following dimensions is planned to be built during the next year:

Floors: 2, Height of each floor: 3-4 m, Length: 500 m, Width: 50 m

The rocks outcropping on the map area surface are:

1. Conglomerate (permeable sedimentary rock)
2. Clay (impermeable sedimentary rock)
3. Limestone (permeable sedimentary rock)

Additionally, in the map the active fault FF' is outcropping parallel to the main river valley, while meteorological data shows that the rainfall rate in the area is rather high.

**Based on the map data you should write a technical report in which you should propose (by marking it with a pencil) the most suitable part of the map's shaded area for the construction of the factory. Your choice should be appropriately justified. The report will be written in groups of 4 students all of which will be receiving the same grade.**

**The technical report should include at least the following elements:**

- a) Strata strike, true dip, and thickness calculation
- b) Vertical (throw) and horizontal (heave) slip calculation of the FF' fault
- c) Construction of as many geologic sections you think is needed.
- d) Depict with red lines the map areas that landslides are probable (your choices should be suitably justified)

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**C. INITIAL SELECTED REFERENCES (can be located in the University Central Library and should be used as general resources for the report)**

1. Bell, F. G., 1993. Engineering Geology. Oxford: Blackwell Scientific.
2. Lee, E.M, & Jones, D.K.C., 2004. Landslide risk assessment. London: Thomas Telford.

**D. MAIN UNIVERSITY LIBRARY INFORMATION RESOURCES & TOOLS (proposed to be mainly used for searching for sources – all can be accessed through the library’s website):**

1. Library OPAC
2. Library AtoZ Journal Catalogue
3. Scopus database
4. Web of Science (WoS) database
5. Citing references (online guide)

**E. ASSIGNMENT STRUCTURE**

**1. Title**

**2. Author details** (Surname, Name initial).

**3. Abstract** (up to 300 words).

**4. Introduction** (short description of the problem you are tackling).

**5. Methodology** (calculations, geologic sections construction: you must explain why you chose the selected sections, what you expect to find from them, etc.).

**6. Results – Discussion** (presentation, interpretation and analysis of your results: you must cite other people’s work in order to justify your arguments, do not forget to evaluate any web resources you are using)

**7. Conclusions** (report your conclusions and suggestions citing references if needed).

**8. References** (at least six references are required of which at least two should be books, at least two journal articles and the rest can be web-based resources or other resources).

**9. Appendices** (geologic sections, geologic map with the proposed construction site and landslide probable areas).

The report should range from 2000 to 2500 words (the abstract and the reference list are not included in the word count).

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**F. GENERAL INSTRUCTIONS**

1. Citations of other people's works is essential!
2. You can employ any widely used author-date referencing style for both in-text and reference list citations (e.g. Harvard system) – If you don't remember how this works ask at the library reference staff about it or search Google for either "Harvard referencing system, or "author-date referencing system" (if you use Google employ the library's web resource evaluation rules located at: <http://www.lib.uth.gr/.....>) .
3. Use primarily the library's online catalogue (OPAC) and online databases to locate books and journal articles.
4. If you are going to use web resources evaluate them according to the relevant library guide (you can find the guide on the library website (<http://www.lib.uth.gr/.....>)).
5. If you need help with locating or using library resources, you can contact the assignment's librarian or the library reference staff.

**G. ASSIGNMENT ASSESSMENT**

The assignment would be marked in points out of 100 (i.e. perfect scoring will be 100 points) according to the following criteria:

1. Satisfactory inclusion of report's required elements (see section B): 50 points.
2. Compliance with the report's structure and word limit (see sections E and F): 20 points.
3. Proven use of library resources and citation instructions (see sections C and D, and follow instructions of par. E.6, E.7, E.8 and section F): 30 points.

*It is reminded that the assessment mark would count for 35% of the total course mark*

**Best of luck with the assignment!**