**ENGINEERING GRAPHICS**

*REGULATIONS*

**1. Objectives**

Engineering Graphics classes are given as lectures and tutorials.

They contain:

* basics of isometric drawing,
* basics of engineering drawing
* basic and advanced problems of descriptive geometry,

The main objective of tutorials is to develop spatial imagination and practice knowledge gained during lectures and self-study.

**2. Schedule**

The schedule contains:

1. lectures given in two-hour blocks
2. tutorials that consist of isometric and oblique projection drawing

**3. Attendance**

1. It is the student's responsibility to participate in all tutorials and to arrive on time. Any absence from classes may be justified only with a medical documentation. A document confirming the existence of such a reason should be provided by the student to the tutor. Maximum two unexcused absences are allowed. The third unjustified absence results in failing the subject.
2. Unexcused absence from the test or short tests is equivalent to obtaining 0 points by the student. In this case, the student is not entitled to take those tests in the future.

**4. Preparation and participation in classes**

Student duties:

1. attendance in tutorials; punctuality
2. preparation of the following personal drawing accessories:

* black pencils of middle hardness (HB, F or similar)
* red pencil
* compass
* two large set squares (30°and 45°)
* pencil eraser
* white paper sheets (A3 and A4 format)

1. thorough understanding and systematic repetition of material from previous lectures and tutorials;
2. **The decision about passing will be taken at last class of the term. For that class all students should bring a briefcase with the complete set of tasks. The folder should be provided with a complete table which is available on the ZPK website**;
3. **Taking pictures with a mobile phones is only allowed after the clear consent of the lecturer and only to the extent permitted by them. It is prohibited to share any of these photos, especially online.**

**5. Proceedings of tutorials**

The topic of tutorials encompasses material from previous lectures and consists of exercises prepared on A4 paper format which are available from the following website https://www.meil.pw.edu.pl/zpk/ZPK/Dydaktyka/Materialy-dla-studentow-Files-for-students/Engineering-Graphics

The method and plan of the solution to a problem is discussed before approaching the problem. A student that solves a problem may ask for the tutor’s help.

During every tutorial students are required to take a short test (max 15 minutes) which consists of solving a short problem on the basis of the material from all previous classes. **In special cases there can be more than one short test during one tutorial instead of one short test during every tutorial. Students should be informed in advance if such a situation arises.**

During the last tutorial students take a final test (2 hours).

Both short tests and the final test cannot be retaken. Only students with excused absences may write tests on another date, common to all such students from the group, after the last tutorial.

**6. Self study**

It is obligatory to finish solving all problems during tutorials or later at home. The student has to store all these assignments till the end of semester and then submits them to the tutor. All problems from submitted sets have to be solved correctly.

**7. Elements of student’s grade**

1. marks from tests
2. sets of problems solved during tutorials

The final grade is based on the number of points obtained from tests. Correctness and accuracy of sets of problems are also taken into account.

If the event of illness, assignment deadlines can be change possible with the consent of the tutor.

**8. Bibliography**

* Woolf, S. – An Elementary Course in Descriptive Geometry
* Higbee, F. G. – The Essentials of descriptive Geometry
* Watts, E. F., Rule, J. T. – Descriptive Geometry
* Church, A. E. – Elements of descriptive geometry
* Church, A. E. – Plates to descriptive Geometry.
* Smith, W. G. – Practical Descriptive geometry
* Moyer, J. A. – Descriptive Geometry for Students of Engineering
* Hawk, M.C. – Schaum’s Outline of Theory and Problems of Descriptive Geometry
* Holliday\_Darr , K. – Applied Descriptive Geometry

**9. Credit for the course**

There are 5 short tests – each including one problem (starting from the 2nd tutorial) and one final test including five problems. It is possible to obtain from 0.0 to 1.0 points for each problem. Grade 5.0 is given if at least 8.6 points from all problems overall is attained.

The following marking is given for the course:

|  |  |
| --- | --- |
| 8,5< 5,0 <=10,0 |  |
| 7,7< 4,5 <=8,5 |  |
| 7,0< 4,0 <=7,7 |  |
| 6,0< 3,5 <=7,0 |  |
| 5,6< 3,0 <=6,0 |  |

It is obligatory for a pass to get at least 5.6 points and **return all accepted assignments to the tutor.**

Students who obtained 3.5 – 5.5 points may take a resit test. The time of the resit test will be published before the end of the semester. A positive mark for the test is sufficient to pass the semester (provided that the folder with a title block containing the entire set of accepted assignments is handed on to a tutor by the deadline). Students who fail the test do not pass the course and need to reattend the course the next academic year.

***These regulations are valid for the stationary mode of the course. In the event of changing the course mode to online classes, the regulations will be adapted to this mode.***

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