



COURSE DATASHEET

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| Semester: | 2015/16/1 |
| Course: | Vacuum Technology |
| Code: | VEMKFIB244V |
| Responsible department: | Institute of Physics and Mechatronics |
| Department code: | MKFI |
| Responsible instructor: | dr. Csaba Németh |

Course objectives:

The main objectives of this course are: to provide a clear and logical presentation of the basic concepts and principles of vacuum physics and its technical aspects including the most important applications. The practice (seminar) aims to deepen the basic concepts by problem solving.

Course content:

1. The kinetic theory of gases. 2. Transport phenomena. The flow of gases I. 3. The flow of gases II. 4. Interaction of gases and condensed materials. 5. Pressure measurements I. 6. Pressure measurements II. 7. Partial-pressure measurements (mass spectrometers). 8. Cavity detection methods. 9. Pumps I. 10. Pumps II. 11. Pumps III. 12. Pumps IV. 13. Materials and ancillaries. 14. Vacuum systems. 15. Cleaning.

Requirements, evaluation and grading:

exam

Required and recommended readings:

Bohátka Sándor: Vákuumfizika és –technika, ELFT, 2008 J. M. Lafferty: Foundations of Vacuum Science and Technology, John Wiley & Sons, 1998, New York A. Roth: Vacuum Technology, North-Holland, 1990, Amsterdam M. Wutz, H. Adam, W. Walcher: Theory and Practice of Vacuum Technology, Fr. Vieweg & Sohn, 1989, Braunschweig