



## COURSE DATASHEET

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|--------------------------------|---------------------------------------|
| <b>Semester:</b>               | 2012/13/1                             |
| <b>Course:</b>                 | Optics and Laser Technology Practice  |
| <b>Code:</b>                   | VEMKFIB122O                           |
| <b>Responsible department:</b> | Institute of Physics and Mechatronics |
| <b>Department code:</b>        | MKFI                                  |
| <b>Responsible instructor:</b> | dr. Zoltán Gugolya                    |

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### Course objectives:

The main objectives of this course are: presentation of the basic concepts and principles of optics, transfer the basic knowledge about lasers used in the industry and the everyday life, emphasize the possibilities providing by the laser techniques in planning the mechatronics systems and sensors.

### Course content:

1. Geometrical optics 2. Snell's law 3. Prism 4. Mirrors 5. Thin lenses 6. Converging lens imaging 7. Diverging lens imaging 8. Written examination 1 9. Optical aberrations 10. Systems of lenses 11. Systems of lenses and mirrors 12. Optical instruments 13. The light is an electromagnetic wave 14. Diffraction 15. Written examination 2

### Requirements, evaluation and grading:

practical mark

### Required and recommended readings:

Young, M.: Optics and Lasers. Springer-Verlag, 2000. Demtröder, W.: Laser Spectroscopy . Basic Concepts and Instrumentation. Springer-Verlag 2003. Eichler, J., Eichler, H.J.: Laser . Bauformen, Strahlführung, Anwendungen. Springer-Verlag 2003.