

## Course descriptions

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## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-203/10                                                                                                                                   | <b>Course title:</b><br>Active Participation in a Regular Research Seminar (1) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 10                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 2.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-204/10                                                                                                                                   | <b>Course title:</b><br>Active Participation in a Regular Research Seminar (2) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 10                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 4.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-205/10                                                                                                                                   | <b>Course title:</b><br>Active Participation in a Regular Research Seminar (3) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 10                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 6.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-206/10                                                                                                                                   | <b>Course title:</b><br>Active Participation in a Regular Research Seminar (4) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 10                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |
| <b>Faculty:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                            |
| <b>Course ID:</b><br>FMFL.KAMŠ/3-MAM-014/00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Course title:</b><br>Asymptotic Methods |
| <b>Educational activities:</b><br><b>Type of activities:</b> lecture<br><b>Number of hours:</b><br><b>per week:</b> 2 <b>per level/semester:</b> 28<br><b>Form of the course:</b> on-site learning                                                                                                                                                                                                                                                                                                                                                                         |                                            |
| <b>Number of credits:</b> 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |
| <b>Recommended semester:</b> 6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                            |
| <b>Educational level:</b> III.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |
| <b>Prerequisites:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            |
| <b>Course requirements:</b><br>Continuous assessment: homework, exam during the semester<br>Exam: written and oral<br>Approximate grading scale: A 90%, B 80%, C 70%, D 60%, E 50%<br>Scale of assessment (preliminary/final): 30/70                                                                                                                                                                                                                                                                                                                                       |                                            |
| <b>Learning outcomes:</b><br>To give an overview of basic asymptotic methods for solving algebraic and differential problems in applied mathematics.                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |
| <b>Class syllabus:</b><br>Algebraic equations: Iterative method. Algebraic equations: Expansion method. Singular perturbations and rescaling. Logarithmic Poincare's expansions. Convergence and asymptoticity. Asymptotic approximation of integrals. Watson's lemma. The steepest descent method. Regular perturbation problems in differential equations. Singular perturbation problems in differential equations. Method of matched asymptotic expansions. Multiple scale method. WKBJ method. Poincare-Lindstedt method. Radius of convergence and Domb-Sykes plots. |                                            |
| <b>Recommended literature:</b><br>Perturbation Methods / E. J. Hinch. Cambridge, Cambridge University Press, 1991<br>Multiple Scale and Singular Perturbation Methods / Kevorkian, J., Cole, J. D. Springer, 1996                                                                                                                                                                                                                                                                                                                                                          |                                            |
| <b>Languages necessary to complete the course:</b><br>English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                            |
| <b>Notes:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                            |
| <b>Past grade distribution</b><br>Total number of evaluated students: 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                            |
| ABS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NEABS                                      |
| 100,0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0,0                                        |
| <b>Lecturers:</b> doc. RNDr. Peter Guba, PhD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                            |
| <b>Last change:</b> 01.05.2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |

**Approved by:**

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------|---------------------------------------------------------------|-----|------|-----|-------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                                                                     |       |      |                                                               |     |      |     |       |
| <b>Faculty:</b>                                                                                                                                                                                                          |       |      |                                                               |     |      |     |       |
| <b>Course ID:</b><br>FMFL.KJP/3-MXX-101/15                                                                                                                                                                               |       |      | <b>Course title:</b><br>Course of English for PhD Studies (1) |     |      |     |       |
| <b>Educational activities:</b><br><b>Type of activities:</b> practicals<br><b>Number of hours:</b><br><b>per week:</b> 2 <b>per level/semester:</b> 28<br><b>Form of the course:</b> on-site learning, distance learning |       |      |                                                               |     |      |     |       |
| <b>Number of credits:</b> 5                                                                                                                                                                                              |       |      |                                                               |     |      |     |       |
| <b>Recommended semester:</b> 1.                                                                                                                                                                                          |       |      |                                                               |     |      |     |       |
| <b>Educational level:</b> III.                                                                                                                                                                                           |       |      |                                                               |     |      |     |       |
| <b>Prerequisites:</b>                                                                                                                                                                                                    |       |      |                                                               |     |      |     |       |
| <b>Course requirements:</b>                                                                                                                                                                                              |       |      |                                                               |     |      |     |       |
| <b>Learning outcomes:</b>                                                                                                                                                                                                |       |      |                                                               |     |      |     |       |
| <b>Class syllabus:</b>                                                                                                                                                                                                   |       |      |                                                               |     |      |     |       |
| <b>Recommended literature:</b>                                                                                                                                                                                           |       |      |                                                               |     |      |     |       |
| <b>Languages necessary to complete the course:</b>                                                                                                                                                                       |       |      |                                                               |     |      |     |       |
| <b>Notes:</b>                                                                                                                                                                                                            |       |      |                                                               |     |      |     |       |
| <b>Past grade distribution</b><br>Total number of evaluated students: 118                                                                                                                                                |       |      |                                                               |     |      |     |       |
| A                                                                                                                                                                                                                        | ABS   | B    | C                                                             | D   | E    | FX  | NEABS |
| 71,19                                                                                                                                                                                                                    | 24,58 | 0,85 | 0,0                                                           | 0,0 | 3,39 | 0,0 | 0,0   |
| <b>Lecturers:</b> PhDr. Alena Zemanová                                                                                                                                                                                   |       |      |                                                               |     |      |     |       |
| <b>Last change:</b> 22.02.2019                                                                                                                                                                                           |       |      |                                                               |     |      |     |       |
| <b>Approved by:</b>                                                                                                                                                                                                      |       |      |                                                               |     |      |     |       |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|-----|---------------------------------------------------------------|-----|-----|-------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                                                                     |       |     |     |                                                               |     |     |       |
| <b>Faculty:</b>                                                                                                                                                                                                          |       |     |     |                                                               |     |     |       |
| <b>Course ID:</b><br>FMFL.KJP/3-MXX-102/15                                                                                                                                                                               |       |     |     | <b>Course title:</b><br>Course of English for PhD Studies (1) |     |     |       |
| <b>Educational activities:</b><br><b>Type of activities:</b> practicals<br><b>Number of hours:</b><br><b>per week:</b> 2 <b>per level/semester:</b> 28<br><b>Form of the course:</b> on-site learning, distance learning |       |     |     |                                                               |     |     |       |
| <b>Number of credits:</b> 5                                                                                                                                                                                              |       |     |     |                                                               |     |     |       |
| <b>Recommended semester:</b> 2.                                                                                                                                                                                          |       |     |     |                                                               |     |     |       |
| <b>Educational level:</b> III.                                                                                                                                                                                           |       |     |     |                                                               |     |     |       |
| <b>Prerequisites:</b> FMFL.KJP/3-MXX-101/15 - Course of English for PhD Studies (1)                                                                                                                                      |       |     |     |                                                               |     |     |       |
| <b>Course requirements:</b>                                                                                                                                                                                              |       |     |     |                                                               |     |     |       |
| <b>Learning outcomes:</b>                                                                                                                                                                                                |       |     |     |                                                               |     |     |       |
| <b>Class syllabus:</b>                                                                                                                                                                                                   |       |     |     |                                                               |     |     |       |
| <b>Recommended literature:</b>                                                                                                                                                                                           |       |     |     |                                                               |     |     |       |
| <b>Languages necessary to complete the course:</b>                                                                                                                                                                       |       |     |     |                                                               |     |     |       |
| <b>Notes:</b>                                                                                                                                                                                                            |       |     |     |                                                               |     |     |       |
| <b>Past grade distribution</b><br>Total number of evaluated students: 119                                                                                                                                                |       |     |     |                                                               |     |     |       |
| A                                                                                                                                                                                                                        | ABS   | B   | C   | D                                                             | E   | FX  | NEABS |
| 73,95                                                                                                                                                                                                                    | 19,33 | 0,0 | 0,0 | 0,0                                                           | 0,0 | 0,0 | 6,72  |
| <b>Lecturers:</b> PhDr. Alena Zemanová                                                                                                                                                                                   |       |     |     |                                                               |     |     |       |
| <b>Last change:</b> 22.02.2019                                                                                                                                                                                           |       |     |     |                                                               |     |     |       |
| <b>Approved by:</b>                                                                                                                                                                                                      |       |     |     |                                                               |     |     |       |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                       |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                       |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-709/10                                                                                                                                   | <b>Course title:</b><br>Development of Novel Software Product Linked with PhD Project |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                       |
| <b>Number of credits:</b> 5                                                                                                                                                    |                                                                                       |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                                                       |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                       |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                       |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                       |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                       |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                       |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                       |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                       |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                       |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                       |
| ABS                                                                                                                                                                            | NEABS                                                                                 |
| 0,0                                                                                                                                                                            | 0,0                                                                                   |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                       |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                       |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                       |

## STATE EXAM DESCRIPTION

|                                                      |                                                     |
|------------------------------------------------------|-----------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava |                                                     |
| <b>Faculty:</b>                                      |                                                     |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-990/15         | <b>Course title:</b><br>Dissertation Thesis Defense |
| <b>Number of credits:</b> 30                         |                                                     |
| <b>Recommended semester:</b> 7., 8..                 |                                                     |
| <b>Educational level:</b> III.                       |                                                     |
| <b>State exam syllabus:</b>                          |                                                     |
| <b>Last change:</b> 02.06.2015                       |                                                     |
| <b>Approved by:</b>                                  |                                                     |

## COURSE DESCRIPTION

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                                               |                                                |
| <b>Faculty:</b>                                                                                                                                                                                    |                                                |
| <b>Course ID:</b><br>FMFI.KMANM/3-MNA-005/15                                                                                                                                                       | <b>Course title:</b><br>Finite Element Methods |
| <b>Educational activities:</b><br><b>Type of activities:</b> lecture<br><b>Number of hours:</b><br><b>per week:</b> 2 <b>per level/semester:</b> 28<br><b>Form of the course:</b> on-site learning |                                                |
| <b>Number of credits:</b> 10                                                                                                                                                                       |                                                |
| <b>Recommended semester:</b> 5.                                                                                                                                                                    |                                                |
| <b>Educational level:</b> III.                                                                                                                                                                     |                                                |
| <b>Prerequisites:</b>                                                                                                                                                                              |                                                |
| <b>Antirequisites:</b> FMFI.KMANM/3-MNA-005/00                                                                                                                                                     |                                                |
| <b>Course requirements:</b>                                                                                                                                                                        |                                                |
| <b>Learning outcomes:</b>                                                                                                                                                                          |                                                |
| <b>Class syllabus:</b>                                                                                                                                                                             |                                                |
| <b>Recommended literature:</b>                                                                                                                                                                     |                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                                                 |                                                |
| <b>Notes:</b>                                                                                                                                                                                      |                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                                            |                                                |
| ABS                                                                                                                                                                                                | NEABS                                          |
| 0,0                                                                                                                                                                                                | 0,0                                            |
| <b>Lecturers:</b> prof. RNDr. Jozef Kačur, DrSc., prof. RNDr. Ján Filo, CSc.                                                                                                                       |                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                                     |                                                |
| <b>Approved by:</b>                                                                                                                                                                                |                                                |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                    |
| <b>Faculty:</b>                                                                                                                                                                |                                                    |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-703/10                                                                                                                                   | <b>Course title:</b><br>Home Project Co-researcher |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                    |
| <b>Number of credits:</b> 5                                                                                                                                                    |                                                    |
| <b>Recommended semester:</b> 6.                                                                                                                                                |                                                    |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                    |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                    |
| <b>Course requirements:</b>                                                                                                                                                    |                                                    |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                    |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                    |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                    |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                    |
| <b>Notes:</b>                                                                                                                                                                  |                                                    |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                    |
| ABS                                                                                                                                                                            | NEABS                                              |
| 0,0                                                                                                                                                                            | 0,0                                                |
| <b>Lecturers:</b>                                                                                                                                                              |                                                    |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                    |
| <b>Approved by:</b>                                                                                                                                                            |                                                    |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-101/10                                                                                                                                   | <b>Course title:</b><br>Individual Study of Science and Research Resources (1) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 12                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 1.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-102/10                                                                                                                                   | <b>Course title:</b><br>Individual Study of Science and Research Resources (2) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 13                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 2.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-103/10                                                                                                                                   | <b>Course title:</b><br>Individual Study of Science and Research Resources (3) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 12                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 3.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-104/10                                                                                                                                   | <b>Course title:</b><br>Individual Study of Science and Research Resources (4) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 13                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 4.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-105/10                                                                                                                                   | <b>Course title:</b><br>Individual Study of Science and Research Resources (5) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 12                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 5.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-106/10                                                                                                                                   | <b>Course title:</b><br>Individual Study of Science and Research Resources (6) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 13                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 6.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-107/10                                                                                                                                   | <b>Course title:</b><br>Individual Study of Science and Research Resources (7) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 12                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 7.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 1                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 100,0                                                                                                                                                                          | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-108/10                                                                                                                                   | <b>Course title:</b><br>Individual Study of Science and Research Resources (8) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                |
| <b>Number of credits:</b> 13                                                                                                                                                   |                                                                                |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                |
| ABS                                                                                                                                                                            | NEABS                                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                             |
| <b>Faculty:</b>                                                                                                                                                                |                                                             |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-702/10                                                                                                                                   | <b>Course title:</b><br>International Project Co-researcher |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                             |
| <b>Number of credits:</b> 5                                                                                                                                                    |                                                             |
| <b>Recommended semester:</b> 6.                                                                                                                                                |                                                             |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                             |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                             |
| <b>Course requirements:</b>                                                                                                                                                    |                                                             |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                             |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                             |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                             |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                             |
| <b>Notes:</b>                                                                                                                                                                  |                                                             |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                             |
| ABS                                                                                                                                                                            | NEABS                                                       |
| 0,0                                                                                                                                                                            | 0,0                                                         |
| <b>Lecturers:</b>                                                                                                                                                              |                                                             |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                             |
| <b>Approved by:</b>                                                                                                                                                            |                                                             |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                                           |
| <b>Faculty:</b>                                                                                                                                                                |                                                                                           |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-708/10                                                                                                                                   | <b>Course title:</b><br>Introduction of Novel Experimental Method Linked with PhD Project |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                                           |
| <b>Number of credits:</b> 5                                                                                                                                                    |                                                                                           |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                                                           |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                                           |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                                           |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                                           |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                                           |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                                           |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                                           |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                                           |
| <b>Notes:</b>                                                                                                                                                                  |                                                                                           |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                                           |
| ABS                                                                                                                                                                            | NEABS                                                                                     |
| 0,0                                                                                                                                                                            | 0,0                                                                                       |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                                           |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                                           |
| <b>Approved by:</b>                                                                                                                                                            |                                                                                           |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                                                                                                                                                                                                                                        |                                                                |
| <b>Faculty:</b>                                                                                                                                                                                                                                                                                                                                                                             |                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-004/00                                                                                                                                                                                                                                                                                                                                                | <b>Course title:</b><br>Numerical Methods for Conservation Law |
| <b>Educational activities:</b><br><b>Type of activities:</b> lecture<br><b>Number of hours:</b><br><b>per week:</b> 2 <b>per level/semester:</b> 28<br><b>Form of the course:</b> on-site learning                                                                                                                                                                                          |                                                                |
| <b>Number of credits:</b> 10                                                                                                                                                                                                                                                                                                                                                                |                                                                |
| <b>Recommended semester:</b> 4.                                                                                                                                                                                                                                                                                                                                                             |                                                                |
| <b>Educational level:</b> III.                                                                                                                                                                                                                                                                                                                                                              |                                                                |
| <b>Prerequisites:</b>                                                                                                                                                                                                                                                                                                                                                                       |                                                                |
| <b>Course requirements:</b>                                                                                                                                                                                                                                                                                                                                                                 |                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                                                                                                                                                                                                                                   |                                                                |
| <b>Class syllabus:</b><br>Hyperbolic systems; linear problems and their numerical methods; consistence, convergence and Lax's theorem, Lax Wendroffova method, nonlinear hyperbolic problems, weak and entropy solutions, conservative and entropy methods, Riemann problem and its solution, Godunov method, Roas method, nonlinear hyperbolic systems and the methods of their solutions. |                                                                |
| <b>Recommended literature:</b><br>Le Veque: Numerical methods for conservative law, ETH Zurich, Birkhauser-Verlag, Basel, 1992                                                                                                                                                                                                                                                              |                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                                                                                                                                                                                                                                          |                                                                |
| <b>Notes:</b>                                                                                                                                                                                                                                                                                                                                                                               |                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                                                                                                                                                                                                                                     |                                                                |
| ABS                                                                                                                                                                                                                                                                                                                                                                                         | NEABS                                                          |
| 0,0                                                                                                                                                                                                                                                                                                                                                                                         | 0,0                                                            |
| <b>Lecturers:</b> prof. RNDr. Jozef Kačur, DrSc., prof. RNDr. Ján Filo, CSc.                                                                                                                                                                                                                                                                                                                |                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                                                                                                                                                                                                                              |                                                                |
| <b>Approved by:</b>                                                                                                                                                                                                                                                                                                                                                                         |                                                                |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                            |
| <b>Faculty:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                            |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-002/00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Course title:</b><br>Numerical Methods for Solving ODEs |
| <b>Educational activities:</b><br><b>Type of activities:</b> lecture<br><b>Number of hours:</b><br><b>per week:</b> 2 <b>per level/semester:</b> 28<br><b>Form of the course:</b> on-site learning                                                                                                                                                                                                                                                                                                                                                                                  |                                                            |
| <b>Number of credits:</b> 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                            |
| <b>Recommended semester:</b> 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                            |
| <b>Educational level:</b> III.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                            |
| <b>Prerequisites:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                            |
| <b>Course requirements:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                            |
| <b>Learning outcomes:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                            |
| <b>Class syllabus:</b><br>IVP: one step methods, multistep methods, stability, convergence, nonstiff and stiff problems, explicit RK-methods of higher order, implicit RK-methods, delay differential equations.<br>BVP: conditioning of BVPs, initial value methods, finite difference methods, finite element methods, mesh selection, singular perturbations, functional differential equations, solving of nonlinear multipoint BVPs.                                                                                                                                           |                                                            |
| <b>Recommended literature:</b><br>Hairer, E., Norsett, S. P., Wanner, G.: Solving Ordinary Differential Equations I Nonstiff Problems. Springer Verlag 1987<br>Hairer, E., Wanner, G.: Solving Ordinary Differential Equations II Stiff and Differential – Algebraic Problems. Springer Verlag 1991<br>Ascher, U. M., Mattheij, R. M. M., Russell, R. D.: Numerical Solution of Boundary Value Problems for Ordinary Differential Equations. SIAM 1995<br>Dávid, A., Chocholatý, P.: Numerická matematika II (Okrajové úlohy pre obyčajné diferenciálne rovnice) UK Bratislava 1985 |                                                            |
| <b>Languages necessary to complete the course:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                            |
| <b>Notes:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                            |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                            |
| ABS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NEABS                                                      |
| 0,0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0,0                                                        |
| <b>Lecturers:</b> Dr. Hana Šmitala Mizerová                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                            |
| <b>Last change:</b> 02.06.2015                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                            |

**Approved by:**

## COURSE DESCRIPTION

|                                                                                                                                                                                                                                                                                                                                                      |                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                                                                                                                                                                                                 |                                                             |
| <b>Faculty:</b>                                                                                                                                                                                                                                                                                                                                      |                                                             |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-001/00                                                                                                                                                                                                                                                                                                         | <b>Course title:</b><br>Numerical Methods of Linear Algebra |
| <b>Educational activities:</b><br><b>Type of activities:</b> lecture<br><b>Number of hours:</b><br><b>per week:</b> 2 <b>per level/semester:</b> 28<br><b>Form of the course:</b> on-site learning                                                                                                                                                   |                                                             |
| <b>Number of credits:</b> 10                                                                                                                                                                                                                                                                                                                         |                                                             |
| <b>Recommended semester:</b> 1.                                                                                                                                                                                                                                                                                                                      |                                                             |
| <b>Educational level:</b> III.                                                                                                                                                                                                                                                                                                                       |                                                             |
| <b>Prerequisites:</b>                                                                                                                                                                                                                                                                                                                                |                                                             |
| <b>Course requirements:</b>                                                                                                                                                                                                                                                                                                                          |                                                             |
| <b>Learning outcomes:</b>                                                                                                                                                                                                                                                                                                                            |                                                             |
| <b>Class syllabus:</b><br>Direct solution's methods for systems of linear algebraic equations and their stability. Projective methods. Classical iterative methods for sparse systems and special modifications to accelerate their convergence. Methods of solution for eigenvalue problem and generalized eigenvalue problem. Last square problem. |                                                             |
| <b>Recommended literature:</b><br>G.H.Golub, C. F. Mc. Loan: Matrix Computations, North Oxford Academic, Oxford 1983, 1988, The John Hopkins University Press, Baltimore and London, 1996<br>Y. Saad: Iterative Methods for Sparse Linear Systems, SIAM, Philadelphia, 2003                                                                          |                                                             |
| <b>Languages necessary to complete the course:</b>                                                                                                                                                                                                                                                                                                   |                                                             |
| <b>Notes:</b>                                                                                                                                                                                                                                                                                                                                        |                                                             |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                                                                                                                                                                                              |                                                             |
| ABS                                                                                                                                                                                                                                                                                                                                                  | NEABS                                                       |
| 0,0                                                                                                                                                                                                                                                                                                                                                  | 0,0                                                         |
| <b>Lecturers:</b>                                                                                                                                                                                                                                                                                                                                    |                                                             |
| <b>Last change:</b> 02.06.2015                                                                                                                                                                                                                                                                                                                       |                                                             |
| <b>Approved by:</b>                                                                                                                                                                                                                                                                                                                                  |                                                             |

## COURSE DESCRIPTION

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                      |                                                      |
| <b>Faculty:</b>                                                                                                                                                           |                                                      |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-701/10                                                                                                                              | <b>Course title:</b><br>Obtaining a University Grant |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br>per week:   per level/semester:<br><b>Form of the course:</b> on-site learning |                                                      |
| <b>Number of credits:</b> 5                                                                                                                                               |                                                      |
| <b>Recommended semester:</b> 6.                                                                                                                                           |                                                      |
| <b>Educational level:</b> III.                                                                                                                                            |                                                      |
| <b>Prerequisites:</b>                                                                                                                                                     |                                                      |
| <b>Course requirements:</b>                                                                                                                                               |                                                      |
| <b>Learning outcomes:</b>                                                                                                                                                 |                                                      |
| <b>Class syllabus:</b>                                                                                                                                                    |                                                      |
| <b>Recommended literature:</b>                                                                                                                                            |                                                      |
| <b>Languages necessary to complete the course:</b>                                                                                                                        |                                                      |
| <b>Notes:</b>                                                                                                                                                             |                                                      |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                   |                                                      |
| ABS                                                                                                                                                                       | NEABS                                                |
| 0,0                                                                                                                                                                       | 0,0                                                  |
| <b>Lecturers:</b>                                                                                                                                                         |                                                      |
| <b>Last change:</b> 02.06.2015                                                                                                                                            |                                                      |
| <b>Approved by:</b>                                                                                                                                                       |                                                      |

## STATE EXAM DESCRIPTION

|                                                      |                                                          |
|------------------------------------------------------|----------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava |                                                          |
| <b>Faculty:</b>                                      |                                                          |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-950/15         | <b>Course title:</b><br>Passing Dissertation Examination |
| <b>Number of credits:</b> 20                         |                                                          |
| <b>Recommended semester:</b> 3., 4..                 |                                                          |
| <b>Educational level:</b> III.                       |                                                          |
| <b>State exam syllabus:</b>                          |                                                          |
| <b>Last change:</b> 02.06.2015                       |                                                          |
| <b>Approved by:</b>                                  |                                                          |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                             |
| <b>Faculty:</b>                                                                                                                                                                |                                                             |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-401/10                                                                                                                                   | <b>Course title:</b><br>Presentation at a Science Event (1) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                             |
| <b>Number of credits:</b> 15                                                                                                                                                   |                                                             |
| <b>Recommended semester:</b> 2.                                                                                                                                                |                                                             |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                             |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                             |
| <b>Course requirements:</b>                                                                                                                                                    |                                                             |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                             |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                             |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                             |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                             |
| <b>Notes:</b>                                                                                                                                                                  |                                                             |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                             |
| ABS                                                                                                                                                                            | NEABS                                                       |
| 0,0                                                                                                                                                                            | 0,0                                                         |
| <b>Lecturers:</b>                                                                                                                                                              |                                                             |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                             |
| <b>Approved by:</b>                                                                                                                                                            |                                                             |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                             |
| <b>Faculty:</b>                                                                                                                                                                |                                                             |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-402/10                                                                                                                                   | <b>Course title:</b><br>Presentation at a Science Event (2) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                             |
| <b>Number of credits:</b> 15                                                                                                                                                   |                                                             |
| <b>Recommended semester:</b> 4.                                                                                                                                                |                                                             |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                             |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                             |
| <b>Course requirements:</b>                                                                                                                                                    |                                                             |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                             |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                             |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                             |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                             |
| <b>Notes:</b>                                                                                                                                                                  |                                                             |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                             |
| ABS                                                                                                                                                                            | NEABS                                                       |
| 0,0                                                                                                                                                                            | 0,0                                                         |
| <b>Lecturers:</b>                                                                                                                                                              |                                                             |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                             |
| <b>Approved by:</b>                                                                                                                                                            |                                                             |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                             |
| <b>Faculty:</b>                                                                                                                                                                |                                                             |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-403/10                                                                                                                                   | <b>Course title:</b><br>Presentation at a Science Event (3) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                             |
| <b>Number of credits:</b> 15                                                                                                                                                   |                                                             |
| <b>Recommended semester:</b> 6.                                                                                                                                                |                                                             |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                             |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                             |
| <b>Course requirements:</b>                                                                                                                                                    |                                                             |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                             |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                             |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                             |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                             |
| <b>Notes:</b>                                                                                                                                                                  |                                                             |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                             |
| ABS                                                                                                                                                                            | NEABS                                                       |
| 0,0                                                                                                                                                                            | 0,0                                                         |
| <b>Lecturers:</b>                                                                                                                                                              |                                                             |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                             |
| <b>Approved by:</b>                                                                                                                                                            |                                                             |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                             |
| <b>Faculty:</b>                                                                                                                                                                |                                                             |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-404/10                                                                                                                                   | <b>Course title:</b><br>Presentation at a Science Event (4) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                             |
| <b>Number of credits:</b> 15                                                                                                                                                   |                                                             |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                             |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                             |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                             |
| <b>Course requirements:</b>                                                                                                                                                    |                                                             |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                             |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                             |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                             |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                             |
| <b>Notes:</b>                                                                                                                                                                  |                                                             |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                             |
| ABS                                                                                                                                                                            | NEABS                                                       |
| 0,0                                                                                                                                                                            | 0,0                                                         |
| <b>Lecturers:</b>                                                                                                                                                              |                                                             |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                             |
| <b>Approved by:</b>                                                                                                                                                            |                                                             |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                               |
| <b>Faculty:</b>                                                                                                                                                                |                                                               |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-704/10                                                                                                                                   | <b>Course title:</b><br>Quotation Registered in SCI or SCOPUS |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                               |
| <b>Number of credits:</b> 5                                                                                                                                                    |                                                               |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                               |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                               |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                               |
| <b>Course requirements:</b>                                                                                                                                                    |                                                               |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                               |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                               |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                               |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                               |
| <b>Notes:</b>                                                                                                                                                                  |                                                               |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                               |
| ABS                                                                                                                                                                            | NEABS                                                         |
| 0,0                                                                                                                                                                            | 0,0                                                           |
| <b>Lecturers:</b>                                                                                                                                                              |                                                               |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                               |
| <b>Approved by:</b>                                                                                                                                                            |                                                               |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                |
| <b>Faculty:</b>                                                                                                                                                                |                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-707/10                                                                                                                                   | <b>Course title:</b><br>Quotation in a Home Scientific Journal |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                |
| <b>Number of credits:</b> 5                                                                                                                                                    |                                                                |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                                |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                |
| <b>Notes:</b>                                                                                                                                                                  |                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                |
| ABS                                                                                                                                                                            | NEABS                                                          |
| 0,0                                                                                                                                                                            | 0,0                                                            |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                |
| <b>Approved by:</b>                                                                                                                                                            |                                                                |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                  |
| <b>Faculty:</b>                                                                                                                                                                |                                                  |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-705/10                                                                                                                                   | <b>Course title:</b><br>Quotation in a Monograph |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                  |
| <b>Number of credits:</b> 5                                                                                                                                                    |                                                  |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                  |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                  |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                  |
| <b>Course requirements:</b>                                                                                                                                                    |                                                  |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                  |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                  |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                  |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                  |
| <b>Notes:</b>                                                                                                                                                                  |                                                  |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                  |
| ABS                                                                                                                                                                            | NEABS                                            |
| 0,0                                                                                                                                                                            | 0,0                                              |
| <b>Lecturers:</b>                                                                                                                                                              |                                                  |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                  |
| <b>Approved by:</b>                                                                                                                                                            |                                                  |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                                  |
| <b>Faculty:</b>                                                                                                                                                                |                                                                  |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-706/10                                                                                                                                   | <b>Course title:</b><br>Quotation in a Scientific Journal Abroad |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                                  |
| <b>Number of credits:</b> 5                                                                                                                                                    |                                                                  |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                                  |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                                  |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                                  |
| <b>Course requirements:</b>                                                                                                                                                    |                                                                  |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                                  |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                                  |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                                  |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                                  |
| <b>Notes:</b>                                                                                                                                                                  |                                                                  |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                                  |
| ABS                                                                                                                                                                            | NEABS                                                            |
| 0,0                                                                                                                                                                            | 0,0                                                              |
| <b>Lecturers:</b>                                                                                                                                                              |                                                                  |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                                  |
| <b>Approved by:</b>                                                                                                                                                            |                                                                  |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                              |
| <b>Faculty:</b>                                                                                                                                                                |                                              |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-301/10                                                                                                                                   | <b>Course title:</b><br>Reviewed Journal (1) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                              |
| <b>Number of credits:</b> 25                                                                                                                                                   |                                              |
| <b>Recommended semester:</b> 2.                                                                                                                                                |                                              |
| <b>Educational level:</b> III.                                                                                                                                                 |                                              |
| <b>Prerequisites:</b>                                                                                                                                                          |                                              |
| <b>Course requirements:</b>                                                                                                                                                    |                                              |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                              |
| <b>Class syllabus:</b>                                                                                                                                                         |                                              |
| <b>Recommended literature:</b>                                                                                                                                                 |                                              |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                              |
| <b>Notes:</b>                                                                                                                                                                  |                                              |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                              |
| ABS                                                                                                                                                                            | NEABS                                        |
| 0,0                                                                                                                                                                            | 0,0                                          |
| <b>Lecturers:</b>                                                                                                                                                              |                                              |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                              |
| <b>Approved by:</b>                                                                                                                                                            |                                              |

## COURSE DESCRIPTION

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                              |
| <b>Faculty:</b>                                                                                                                                                                |                                              |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-302/10                                                                                                                                   | <b>Course title:</b><br>Reviewed Journal (2) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                              |
| <b>Number of credits:</b> 25                                                                                                                                                   |                                              |
| <b>Recommended semester:</b> 4.                                                                                                                                                |                                              |
| <b>Educational level:</b> III.                                                                                                                                                 |                                              |
| <b>Prerequisites:</b>                                                                                                                                                          |                                              |
| <b>Course requirements:</b>                                                                                                                                                    |                                              |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                              |
| <b>Class syllabus:</b>                                                                                                                                                         |                                              |
| <b>Recommended literature:</b>                                                                                                                                                 |                                              |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                              |
| <b>Notes:</b>                                                                                                                                                                  |                                              |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                              |
| ABS                                                                                                                                                                            | NEABS                                        |
| 0,0                                                                                                                                                                            | 0,0                                          |
| <b>Lecturers:</b>                                                                                                                                                              |                                              |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                              |
| <b>Approved by:</b>                                                                                                                                                            |                                              |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                              |
| <b>Faculty:</b>                                                                                                                                                                |                                              |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-303/10                                                                                                                                   | <b>Course title:</b><br>Reviewed Journal (3) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                              |
| <b>Number of credits:</b> 25                                                                                                                                                   |                                              |
| <b>Recommended semester:</b> 6.                                                                                                                                                |                                              |
| <b>Educational level:</b> III.                                                                                                                                                 |                                              |
| <b>Prerequisites:</b>                                                                                                                                                          |                                              |
| <b>Course requirements:</b>                                                                                                                                                    |                                              |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                              |
| <b>Class syllabus:</b>                                                                                                                                                         |                                              |
| <b>Recommended literature:</b>                                                                                                                                                 |                                              |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                              |
| <b>Notes:</b>                                                                                                                                                                  |                                              |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                              |
| ABS                                                                                                                                                                            | NEABS                                        |
| 0,0                                                                                                                                                                            | 0,0                                          |
| <b>Lecturers:</b>                                                                                                                                                              |                                              |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                              |
| <b>Approved by:</b>                                                                                                                                                            |                                              |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                              |
| <b>Faculty:</b>                                                                                                                                                                |                                              |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-304/10                                                                                                                                   | <b>Course title:</b><br>Reviewed Journal (4) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                              |
| <b>Number of credits:</b> 25                                                                                                                                                   |                                              |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                              |
| <b>Educational level:</b> III.                                                                                                                                                 |                                              |
| <b>Prerequisites:</b>                                                                                                                                                          |                                              |
| <b>Course requirements:</b>                                                                                                                                                    |                                              |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                              |
| <b>Class syllabus:</b>                                                                                                                                                         |                                              |
| <b>Recommended literature:</b>                                                                                                                                                 |                                              |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                              |
| <b>Notes:</b>                                                                                                                                                                  |                                              |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                              |
| ABS                                                                                                                                                                            | NEABS                                        |
| 0,0                                                                                                                                                                            | 0,0                                          |
| <b>Lecturers:</b>                                                                                                                                                              |                                              |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                              |
| <b>Approved by:</b>                                                                                                                                                            |                                              |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                 |
| <b>Faculty:</b>                                                                                                                                                                |                                                 |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-801/15                                                                                                                                   | <b>Course title:</b><br>Teaching Activities (1) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                 |
| <b>Number of credits:</b> 10                                                                                                                                                   |                                                 |
| <b>Recommended semester:</b> 2.                                                                                                                                                |                                                 |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                 |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                 |
| <b>Course requirements:</b>                                                                                                                                                    |                                                 |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                 |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                 |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                 |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                 |
| <b>Notes:</b>                                                                                                                                                                  |                                                 |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                 |
| ABS                                                                                                                                                                            | NEABS                                           |
| 0,0                                                                                                                                                                            | 0,0                                             |
| <b>Lecturers:</b>                                                                                                                                                              |                                                 |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                 |
| <b>Approved by:</b>                                                                                                                                                            |                                                 |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                 |
| <b>Faculty:</b>                                                                                                                                                                |                                                 |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-802/15                                                                                                                                   | <b>Course title:</b><br>Teaching Activities (2) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                 |
| <b>Number of credits:</b> 10                                                                                                                                                   |                                                 |
| <b>Recommended semester:</b> 4.                                                                                                                                                |                                                 |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                 |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                 |
| <b>Course requirements:</b>                                                                                                                                                    |                                                 |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                 |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                 |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                 |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                 |
| <b>Notes:</b>                                                                                                                                                                  |                                                 |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                 |
| ABS                                                                                                                                                                            | NEABS                                           |
| 0,0                                                                                                                                                                            | 0,0                                             |
| <b>Lecturers:</b>                                                                                                                                                              |                                                 |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                 |
| <b>Approved by:</b>                                                                                                                                                            |                                                 |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                 |
| <b>Faculty:</b>                                                                                                                                                                |                                                 |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-803/15                                                                                                                                   | <b>Course title:</b><br>Teaching Activities (3) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                 |
| <b>Number of credits:</b> 10                                                                                                                                                   |                                                 |
| <b>Recommended semester:</b> 6.                                                                                                                                                |                                                 |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                 |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                 |
| <b>Course requirements:</b>                                                                                                                                                    |                                                 |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                 |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                 |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                 |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                 |
| <b>Notes:</b>                                                                                                                                                                  |                                                 |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                 |
| ABS                                                                                                                                                                            | NEABS                                           |
| 0,0                                                                                                                                                                            | 0,0                                             |
| <b>Lecturers:</b>                                                                                                                                                              |                                                 |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                 |
| <b>Approved by:</b>                                                                                                                                                            |                                                 |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                           |                                                 |
| <b>Faculty:</b>                                                                                                                                                                |                                                 |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-804/15                                                                                                                                   | <b>Course title:</b><br>Teaching Activities (4) |
| <b>Educational activities:</b><br><b>Type of activities:</b><br><b>Number of hours:</b><br><b>per week: per level/semester:</b><br><b>Form of the course:</b> on-site learning |                                                 |
| <b>Number of credits:</b> 10                                                                                                                                                   |                                                 |
| <b>Recommended semester:</b> 8.                                                                                                                                                |                                                 |
| <b>Educational level:</b> III.                                                                                                                                                 |                                                 |
| <b>Prerequisites:</b>                                                                                                                                                          |                                                 |
| <b>Course requirements:</b>                                                                                                                                                    |                                                 |
| <b>Learning outcomes:</b>                                                                                                                                                      |                                                 |
| <b>Class syllabus:</b>                                                                                                                                                         |                                                 |
| <b>Recommended literature:</b>                                                                                                                                                 |                                                 |
| <b>Languages necessary to complete the course:</b>                                                                                                                             |                                                 |
| <b>Notes:</b>                                                                                                                                                                  |                                                 |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                        |                                                 |
| ABS                                                                                                                                                                            | NEABS                                           |
| 0,0                                                                                                                                                                            | 0,0                                             |
| <b>Lecturers:</b>                                                                                                                                                              |                                                 |
| <b>Last change:</b> 02.06.2015                                                                                                                                                 |                                                 |
| <b>Approved by:</b>                                                                                                                                                            |                                                 |

## COURSE DESCRIPTION

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| <b>University:</b> Comenius University in Bratislava                                                                                                                                                                                                                                                           |                                                                |
| <b>Faculty:</b>                                                                                                                                                                                                                                                                                                |                                                                |
| <b>Course ID:</b><br>FMFL.KMANM/3-MNA-003/00                                                                                                                                                                                                                                                                   | <b>Course title:</b><br>Variational Methods of Solving of PDEs |
| <b>Educational activities:</b><br><b>Type of activities:</b> lecture<br><b>Number of hours:</b><br><b>per week:</b> 2 <b>per level/semester:</b> 28<br><b>Form of the course:</b> on-site learning                                                                                                             |                                                                |
| <b>Number of credits:</b> 10                                                                                                                                                                                                                                                                                   |                                                                |
| <b>Recommended semester:</b> 3.                                                                                                                                                                                                                                                                                |                                                                |
| <b>Educational level:</b> III.                                                                                                                                                                                                                                                                                 |                                                                |
| <b>Prerequisites:</b>                                                                                                                                                                                                                                                                                          |                                                                |
| <b>Course requirements:</b><br>Scale of assessment (preliminary/final): 0/100                                                                                                                                                                                                                                  |                                                                |
| <b>Learning outcomes:</b>                                                                                                                                                                                                                                                                                      |                                                                |
| <b>Class syllabus:</b><br>Sobolev spaces, generalized solutions of boundary value elliptic problems, Lax-Milgram theorem, Ritz and Galerkin methods, Fredholm alternative, spectral theory, generalized solutions of parabolic and hyperbolic problems.                                                        |                                                                |
| <b>Recommended literature:</b><br>K. Rektorys: Variational Methods in Mathematics, Science and Engineering, SNTL, Praha 1974 (in Czech)<br>J. Nečas: Les Methodes Discrete en Theorie des Equations Elliptiques, Academia, Praha 1967<br>J. Wloka: Partial Differential Equations, University Press, Cambridge |                                                                |
| <b>Languages necessary to complete the course:</b>                                                                                                                                                                                                                                                             |                                                                |
| <b>Notes:</b>                                                                                                                                                                                                                                                                                                  |                                                                |
| <b>Past grade distribution</b><br>Total number of evaluated students: 0                                                                                                                                                                                                                                        |                                                                |
| ABS                                                                                                                                                                                                                                                                                                            | NEABS                                                          |
| 0,0                                                                                                                                                                                                                                                                                                            | 0,0                                                            |
| <b>Lecturers:</b> prof. RNDr. Michal Fečkan, DrSc.                                                                                                                                                                                                                                                             |                                                                |
| <b>Last change:</b> 02.06.2015                                                                                                                                                                                                                                                                                 |                                                                |
| <b>Approved by:</b>                                                                                                                                                                                                                                                                                            |                                                                |