**Course abstract, Б.Пр.Б.18, Decision-making Methods in Public Management**

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| **1. Course number, title, and ECTS** | **Б.Пр.Б.18, Decision-making Methods in Public Management, 4 ECTS**Core CourseLectures - 20Seminars & Practical Classes - 28Contact Hours - 48Self-study Hours -104 |
| **2. Course instructors during Self-Evaluation year and site visit year** | Mr. Fuad Aleskerov, Professor, Doctor of Sciences in Management in Social and Economic Systems, Mr. Vladimir Volsky, Professor, PhD in Mathematical ModelingMrs. Sophia Kiselgof, Associate Professor, PhD in Mathematical Modelling  |
| **3. Prerequisites for the course** | Б.Пр.Б.6. MathematicsБ.Пр.Б.17. Institutional economics |
| **4. Course objectives in relation to total curriculum** | The course aim is to introduce students with variety of quantitative methods for the decision making and analysis in public management. |
| **5. Learning outcomes** | By the end of the course, students should:* understand basic quantitative methods discussed in course
* be able to construct and analyze formal mathematical models of real-life situations
* be able to assess data; determine patterns in data and use formal decision support models to solve socio-economic and political problems.
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| **6. Course description** |  |
| **7. Learning and teaching methods** | During the course the following techniques are used:* Lectures
* Problem sessions
* Homework (induvidual project)
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| **8. Major topics covered** | 1. Individual decision-making.1.1. Rational choice.1.2. Linear programming.1.4. Project management: critical path planning and PERT analysis.2. Multicriteria decision-making.2.1. Aggregation models2.2. Data envelopment analysis.3. Collective decision making in politics.3.1 Voting systems and proportional representation.3.2 Power indices. Power distribution in elective bodies.4. Network analysis5. Stable matching. |
| **9. Prescribed books and readings** | 1. Алескеров Ф.Т., Хабина Э.Л., Шварц Д.А. Бинарные отношения, графы и коллективные решения. – М.: ФИЗМАТЛИТ. 2012
2. Вольский В.И., Лезина З.М. Голосование в малых группах.  М., Наука, 1991
3. Алескеров Ф., Платонов В. "Системы пропорционального представительства и индексы представительности парламента", препринт ГУ Высшая Школа Экономики, WP7/2003/05, Москва, 2003
4. Алескеров Ф.Т. «Формальные методы коллективного принятия решений» (пленарный доклад), Тезисы докладов 2-ой Всесоюзной конференции по статистическому и дискретному анализу нечисловых данных, М., Наука, 1984, 18-28
5. Карпов А.В. Измерение представительности парламента в системах пропорционального представительства. Препринт ГУ ВШЭ. WP7/2006/04, М.: ГУ ВШЭ, 2006 – 40 с.
6. Вольский В.И. Применение метода Крамера для выделения части множества Парето. – Автоматика и телемеханика, 1982. № 12. с. 111 – 119
7. Алескеров Ф.Т., Е.В. Бауман, В.И. Вольский. «Методы обработки интервальных экспертных оценок», Автоматика и телемеханика, 1984, №3, 384-389
8. D. Gale and L. S. Shapley: "College Admissions and the Stability of Marriage", American Mathematical Monthly 69, 9-14, 1962.
9. Roth, Alvin E., "The origins, history, and design of the resident match," JAMA. Journal of the American Medical Association, vol. 289, No. 7, February 19, 2003, 909-912.
10. Avery, Christopher, Christine Jolls, Richard A. Posner, and Alvin E. Roth, "The Market for Federal Judicial Law Clerks" University of Chicago Law Review, 68, 3, Summer, 2001, 793-902
11. Вентцель Е.С. Исследование операций. Задачи, принципы, методология. М.: ВШ, 2001.
12. Ларичев О.И. Теория и методы принятия решений. / Учебник. М.: Логос, 2002.
13. Matthew O. Jackson “Social and Economic Networks” / Princeton University Press, 2010.
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| **10. Way of examining** | The assessment criteria and their weights are the following:

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| Course work | 0,1 |
| Homework (individual project) | 0,3 |
| Written exam | 0,6 |

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