**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 Course  Lectures - 20  Seminars & Practical Classes - 28  Contact Hours - 48  Self-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 Modeling  Mrs. Sophia Kiselgof, Associate Professor, PhD in Mathematical Modelling |
| **3. Prerequisites for the course** | Б.Пр.Б.6. Mathematics  Б.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. |
| **6. Course description** |  |
| **7. Learning and teaching methods** | During the course the following techniques are used:   * Lectures * Problem sessions * Homework (induvidual project) |
| **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 models  2.2. 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 analysis  5. 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. |
| **10. Way of examining** | The assessment criteria and their weights are the following:   |  |  | | --- | --- | | Course work | 0,1 | | Homework (individual project) | 0,3 | | Written exam | 0,6 | |