研究生课程教学大纲（Syllabus）

课程代码 Course Code	ECON9014-120	*学时 Teaching Hours	48	*学分 Credits	3

*课程名称 Course Name	经济学中的数学方法
*授课语言 Instruction Language	中英文结合
*开课院系 School	(120)安泰经济与管理学院
先修课程 Prerequisite	微积分、线性代数、概率论

授课教师 Instructors	姓名 Name	职称 Title	单位 Department	联系方式 E-mail
	陆卓然	助理教授	安泰经济与管理学院	luzhuoran@sjtu.edu.cn

*课程简介（中文）Course Description	这门课程涵盖了经济学及相关领域中的一系列重要且实用的基础数学方法，包括一元和多元微积分、线性代数、最优化方法以及动态规划。为了帮助学生更好地掌握这些方法，本课程将配以大量的练习题和案例分析。通过学习本课程，学生应能熟练掌握静态和动态最优化问题的求解方法，以及比较静态分析等技术，为进一步深入的经济学分析（如均衡的存在性证明、均衡的刻画与分析等）打下坚实的基础。 学生需要按时上课，并积极参与课堂讨论。每个教学模块结束后，都会布置相关的练习题，这些练习题与期末考试内容高度相关。如果不认真完成作业，将很难在期末考试中取得优异成绩。尽管学生可以讨论练习题，但作业必须独立完成。任何迟交的作业都将被记为未交。
*课程简介（English）Course Description	This course covers a range of fundamental and useful mathematical methods for economics and related fields, including single-variable and multivariable calculus, linear algebra, optimization methods, and dynamic programming. To help students better understand and apply these methods, the course provides numerous exercises and case studies. By the end of the course, students should be proficient in solving both static and dynamic optimization problems and performing comparative static analysis, thereby establishing a solid foundation for more advanced economic analyses, such as proving the existence of equilibrium and characterizing and analyzing equilibrium. Students are expected to attend classes regularly and actively participate in discussions. After each teaching module, problem sets will be assigned, which are closely related to the final exam. Failure to complete these assignments thoroughly may result in poor performance on the final exam. While students are encouraged to discuss the exercises, assignments must be completed independently. Any late submissions will not be accepted.

*教学安排 Schedules	教学内容 Content	授课学时 Hours	教学方式 Format	授课教师 Instructor
	逻辑与证明方法	3	课堂讲授	陆卓然

<table>
<tr><td rowspan="7"></td><td>一元微积分与应用</td><td>6</td><td>课堂讲授</td><td>陆卓然</td></tr>
<tr><td>线性代数与应用</td><td>9</td><td>课堂讲授</td><td>陆卓然</td></tr>
<tr><td>多元微积分与应用</td><td>6</td><td>课堂讲授</td><td>陆卓然</td></tr>
<tr><td>最优化方法</td><td>9</td><td>课堂讲授</td><td>陆卓然</td></tr>
<tr><td>积分学与微分方程</td><td>6</td><td>课堂讲授</td><td>陆卓然</td></tr>
<tr><td>泛函分析简介</td><td>3</td><td>课堂讲授</td><td>陆卓然</td></tr>
<tr><td>动态规划与应用</td><td>6</td><td>课堂讲授</td><td>陆卓然</td></tr>
<tr><td>*考核方式
Grading
Policy</td><td colspan="4">课堂参与：10%；作业：40%；期末考试：50%</td></tr>
<tr><td>*教材或参考资料
Textbooks
&References</td><td colspan="4">本课程没有指定教材，教授内容基于教师的讲义
参考资料：
1. Mathematics for Economists by Carl P. Simon and Lawrence Blume, W.W. Norton & Company
2. Convex Optimization by Stephen Boyd and Lieven Vandenberghe, Cambridge University Press
3. Essential Microeconomics by John Riley, Cambridge University Press
4. Optimization in Economic Theory by Avinash Dixit, Oxford University Press
5. Advanced Mathematical Economics by Rakesh V. Vohra, Routledge
6. Recursive Methods in Economic Dynamics by Nancy Stokey and Robert Lucas, Harvard University Press
7. Microeconomic Theory by Mas-Colell, Whinston and Green, Oxford University Press
8. Principles of Mathematical Analysis by Walter Rudin, McGraw-Hill</td></tr>
<tr><td>备注
Notes</td><td colspan="4"></td></tr>
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备注说明：

1．带*内容为必填项；

2．课程简介字数为 300-500 字；教学内容、进度安排等以表述清楚教学安排为宜，字数不限。