

数学类（强基计划班）

Mathematics (Strengthening Basic Disciplines Program)

本科专业代码：0701

学 制：4 年（本科）、3+1+2 年（本硕）、3+1+4 年（本博）

培养目标：

数学类（强基计划班）立足数学学科前沿，把“勇攀科学高峰、引领学科未来”作为长期奋斗目标，培养家国情怀和全球视野兼备、服务国家重大战略需求、“学习力、思想力、行动力”卓越、德智体美劳全面发展的“三创型”（创新、创造、创业）数学领域领军人才。

本专业的学生在毕业以后五年左右达到以下目标：

- （1）积极应对国家重大战略需求，适应社会发展和科技进步，具备优秀的个人修养与职业道德，并拥有国际视野和领导才能。
- （2）具备扎实的数学基础和宽广的数学理论知识，掌握数学与应用数学的基本思想和基本方法。
- （3）得到严格的数学思维训练，具有扎实的专门领域知识，能够在不同领域中开展基于数学与应用数学方法的基础和应用研究，展现出高水平的科学研究的能力。
- （4）能够有很强的运用数学理论知识解决理论和实际问题的潜在能力。

本研衔接办法：

数学类（强基计划班）实行小班教学和导师制，本研衔接培养，转段的学生可继续在数学学院基础数学、计算数学、概率论与数理统计、应用数学、运筹学与控制论等专业深造，也可进入与国家重大战略需求相关的计算机科学与技术、计算机技术、软件工程、控制科学与工程、电子信息、电子科学与技术、信息与通信工程等关键学科领域深造。

毕业要求：

- 1.专业知识与素养。掌握扎实的数学基础和专业知识，具有良好的数学思维和数学素养。
- 2.问题分析。能识别并规范表达数学及相关领域的复杂问题，结合文献研究与学科分析得出科学结论。
- 3.设计/开发解决方案。能针对数学及相关领域的复杂问题设计和开发解决方案，考量理论严密性、计算效率及可行性。

4.研究能力。能够基于数学和工程原理并采用科学方法对数学及相关领域的复杂问题进行研究，设计实验、分析数据并综合得出合理结论。

5.使用现代工具。能够针对数学及相关领域的复杂问题，开发、选择与使用恰当的技术、资源、现代工程和信息化技术工具，对复杂问题进行预测与模拟，并能够理解其局限性。

6.科学与社会。能够基于数学专业相关背景知识进行合理分析，评价复杂科学和工程问题解决方案对社会、健康、安全、法律以及文化的影响，并理解应承担的责任。

7.学科认知与发展。理解学科发展规律，评估其对数学及相关领域的推动作用，把握前沿方向。

8.职业规范。具备人文社会科学素养和社会责任感，遵守学术伦理、法律及职业规范。

9.个人与团队。能在多学科团队中承担个体任务或负责人角色，实现协作与协调。

10.沟通能力。能与同行及公众进行有效沟通和交流，具备跨文化交流能力。

11.终身学习。具备自主学习能力，适应学科发展并持续更新知识体系。

培养目标与毕业要求关系矩阵：

培养目标 毕业要求	培养目标 1	培养目标 2	培养目标 3	培养目标 4
专业知识与素养		•	•	•
问题分析		•	•	•
设计/开发解决方案		•	•	•
研究能力		•	•	•
使用现代工具			•	•
科学与社会	•		•	
学科认知与发展	•			•
职业规范	•	•		
个人与团队	•		•	
沟通能力	•	•	•	•
终身学习	•	•	•	•

专业简介：

华南理工大学数学学科始建于 1958 年华南工学院成立时的工程数学系，时任二级教授卢文担任首任系主任，并于同年开始招生数学本科专业。后几经院系调整，最终于 2013 年成立独立的数学学院。通过人才培养和引进，学院在学科和师资队伍建设和人才培养、科研与学术交流、教学研究与教材改革等方面都取得巨大进步，教学和科研方面的综合实力持续增强，在国内外教育界和学术界

有很大的影响力。在教育部第四轮学科评估中获得 B+ 等级，位列全国并列第 19 位，第五轮学科评估保持佳绩。

目前学院设有数学与应用数学、信息与计算科学、统计学三个本科专业，拥有数学一级学科博士点和博士后流动站。近年来坚持基础理论与重大应用研究并重，形成了偏微分方程、代数与数论、几何与拓扑、计算数学、运筹学与控制论等优势方向。2019 年入选教育部强基计划，2019 年数学与应用数学专业、2021 年信息与计算科学专业分别入选国家一流本科专业建设点。数学与应用数学专业是国家级特色专业、广东省名牌专业和重点专业。数学学院下设数学研究所，建有国家工科数学基础课程教学基地和广东省数学技术实验教学示范中心。

学院师资力量雄厚，现有专任教师 92 人。有国家杰出青年基金获得者、国家“万人计划”教学名师、国家优秀青年基金获得者、教育部新世纪优秀人才、省级教学名师、省级“千百十”人才工程、青年珠江学者、珠江科技新星、广东省特支计划青年拔尖人才等高层次人才近 20 人。整个师资队伍以中青年为中坚力量，师资队伍结构合理。学院教师潜心数学研究和教学研究，获得了许多优异的科研和教学成果，如国家级教学成果二等奖 1 项，省部级自然科学一等奖 2 项，并获得国家教学名师 1 人，“高等数学”、“数学物理方程”、“数学模型”“微积分全英课”等国家级一流本科课程 4 门。学院加强国际化交流与合作，推进与加拿大西安大略大学、英国伯明翰大学、英国爱丁堡大学、法国南特大学等大学开展本硕联合培养项目。

数学类（强基计划班）旨在为国家培养一批高端数学人才，满足科研、教育和高端技术产业需求，为科技创新提供理论支撑，提升国家科技竞争力和安全保障力。

专业特色：

- 1.立足数学科学前沿，厚基础、重创新，注重科教融合。
- 2.突出数学与应用学科的交叉，探索“数学+”复合型人才培养模式，赋能新工科快速发展。
- 3.依托粤港澳大湾区地缘和经济优势，为湾区数学及前沿交叉领域输送高素质人才，助力国家重大需求和“创新驱动发展战略”。
- 4.“导师制+科研项目+学术交流”三位一体模式，强化强基计划班科研能力培养。

授予学位：

本科阶段，完成专业人才培养方案规定内容，并符合学校学位授予条件者，可授予理学学士学位。转段的学生按照其选择的方向继续研究生课程学习，满足硕士/博士学位申请条件并达到学校规定学术水平标准的，可获得相应的硕士/博士学位。

专业核心课程：

数学分析、高等代数、解析几何、常微分方程、实变函数、复变函数、抽象代数、数学物理方程、概率论、泛函分析、拓扑学

特色课程:

新生研讨课: 数学专业导论、走进现代代数学与几何学

专题研讨课: 数学模型

全英课程: Statistic and regression with R、 Statistical Learning and Data Science、 The Qualitative Methods and Numerical Simulation for Differential Equations

学科前沿课: 微分方程思想方法选讲

创新实践课: 数学模型课程设计 (“三个一”课程)

创业教育课: 数学模型课程设计 (“三个一”课程)

竞教结合课: 数学模型、分析与代数选讲

劳动教育课: 数学技术实践

一、各类课程学分登记表

1. 学分统计表

课程类别	课程要求			学分		学时		备注
公共基础课	必修			37		752		
	通识			10		160		
专业基础课	必修			69		1104		
选修课	选修			16		256		
合 计				132		2272		
集中实践教学环节	必修			24		31 周		
	选修			4		4 周		
毕业学分要求	132+28=160							
建议每学期修读学分	1	2	3	4	5	6	7	8
	25	25	25	25	22	22	8	8

备注: 学生毕业时须修满专业教学计划规定学分, 并取得第二课堂 7 个人文素质教育学分和 4 个“三创”能力培养学分。

2.类别统计表

学时					学分						
总学时数	其中		其中		总学分数	其中		其中			创新创业教育学分
	必修学时	选修学时	理论教学学时	实验教学学时		必修学分	选修学分	集中实践教学环节学分	理论教学学分	实验教学学分	
2272	1856	416	1822	450	160	130	30	28	118	14	13

二、本科阶段课程设置表

类别	课 程 代 码	课 程 名 称	是否 必修	学 时 数					学 分 数	开 课 学 期
				总学时	理论	实验	实习	其它		
公 共 基 础 课	031101761	习近平新时代中国特色社会主义思想概论	必修 课	48	36			12	3.0	1
	031101661	思想道德与法治		40	36			4	2.5	2
	031101371	中国近现代史纲要		40	36			4	2.5	3
	031101424	毛泽东思想和中国特色社会主义理论体系概论		40	36			4	2.5	4
	031101522	马克思主义基本原理		40	36			4	2.5	4
	031101331	形势与政策		64	64				2.0	1-8
	044101383	学术英语（一）		32	32				2.0	1
	044102452	学术英语（二）		32	32				2.0	2
	084101181	人工智能导论（理工科类）		36	24			12	2.0	1
	052100332	体育（一）		36				36	1.0	1
	052100012	体育（二）		36				36	1.0	2
	052100842	体育（三）		36				36	1.0	3
	052100062	体育（四）		36				36	1.0	4
	006100112	军事理论		36	18			18	2.0	2
	045102811	Python 语言程序设计		40	32			8	2.0	2
	041100582	大学物理I（一）		48	48				3.0	2
	041101391	大学物理I（二）		48	48				3.0	3
	041100671	大学物理实验（一）		32		32			1.0	3
	041101051	大学物理实验（二）		32		32			1.0	4
		人文科学、社会科学领域	通 识 课	128	128				8.0	
		科学技术领域		32	32				2.0	
		合 计			912	638	64		210	47.0

二、课程设置表（续）

类别	课程代码	课程名称	是否必修	学 时 数					学分 数	开课 学期
				总学时	理论	实验	实习	其它		
专业基础课	040101591	解析几何	必	48	48				3.0	1
	040100111	高等代数（上）	必	80	80				5.0	1
	040100282	数学分析（一）	必	80	80				5.0	1
	040100931	高等代数（下）	必	80	80				5.0	2
	040100352	数学分析（二）	必	96	96				6.0	2
	040101311	数学分析（三）	必	96	96				6.0	3
	040100131	常微分方程	必	64	64				4.0	3
	040100492	概率论	必	64	64				4.0	3
	040100162	数学模型	必	48	48				3.0	4
	040100061	复变函数	必	64	64				4.0	4
	040100121	微分几何	必	64	64				4.0	4
	040102702	抽象代数	必	64	64				4.0	5
	040101052	实变函数	必	64	64				4.0	5
	040102682	拓扑学	必	64	64				4.0	5
	040100301	数学物理方程	必	64	64				4.0	6
	040101181	泛函分析	必	64	64				4.0	6
	合 计		必	1104	1104				69.0	
选修课	模块 1：任意选修课									
	现代数学基础课程									
	040102691	分析与代数选讲	选	32	32				2.0	3
	040101721	初等数论	选	64	64				4.0	3
	040101531	代数学基础	选	64	64				4.0	6
	040102471	微分方程思想方法选讲	选	48	48				3.0	7
	040102741	黎曼曲面与黎曼几何	选	64	64				4.0	7
	计算数学课程									
	040100482	离散数学	选	48	48				3.0	3
	040102671	面向对象程序设计	选	56	40			16	3.0	6
	040100081	数据结构	选	64	64				4.0	3
	040102821	神经网络与深度学习	选	64	64				4.0	4
	040101011	数值分析	选	64	64				4.0	4
	040102241	矩阵计算	选	48	48				3.0	4
	040100871	数学软件与数学实验	选	48	16			32	2.0	4
	040101061	算法设计与分析	选	64	64				4.0	4
	040102361	数据库系统	选	64	64				4.0	4
	040100181	微分方程数值解	选	48	48				3.0	5
	040102322	数值优化算法	选	64	64				4.0	5
	040102751	有限元方法与计算	选	48	48				3.0	6
	040101331	计算机图形学	选	48	48				3.0	6
	040102731	计算流体力学	选	48	48				3.0	6
	040101581	计算机网络	选	48	48				3.0	8

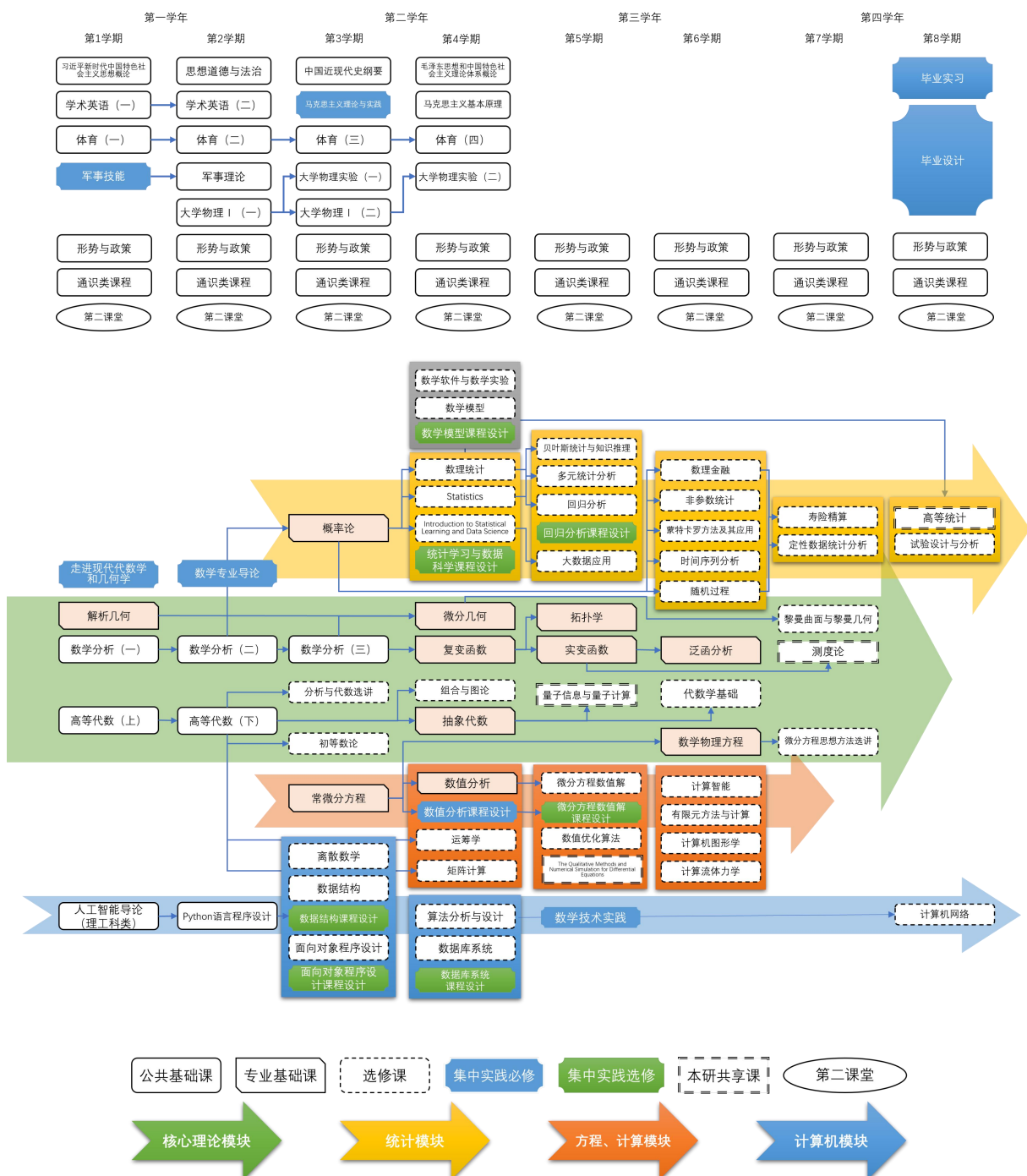
类别	课 程 代 码	课 程 名 称	是否必修	学 时 数					学分数	开课学期	
				总学时	理论	实验	实习	其它			
	统计与优化课程										
	040100801	数理统计	选	64	64				4.0	4	
	040102722	Statistical Learning and Data Science	选	64	64				4.0	4	
	040102721	统计学习与数据科学（新加的中文）	选	64	64				4.0	4	
	040102831	Statistic and regression with R	选	48	48				3.0	4	
	040101131	运筹学	选	64	64				4.0	4	
	040102561	贝叶斯统计与知识推理	选	48	48				3.0	5	
	040102271	大数据应用	选	32	32				2.0	5	
	040100671	多元统计分析	选	64	64				4.0	5	
	040102481	回归分析	选	48	48				3.0	5	
	040101071	随机过程	选	64	64				4.0	6	
	040102091	非参数统计	选	32	32				2.0	6	
	040102461	蒙特卡罗方法及其应用	选	48	48				3.0	6	
	040100442	数理金融	选	48	48				3.0	6	
	040102021	时间序列分析	选	48	48				3.0	6	
	040102501	寿险精算	选	48	48				3.0	7	
	040102141	试验设计与分析	选	32	32				2.0	8	
	模块 2：个性化选修课										
	跨学院（非数学学院）课程	不超过 4（≤ 4）学分	选						≤ 4		
	040102451	量子信息与量子计算	选	64	64				4.0	5	
	040101511	测度论	选	64	64				4.0	7	
	040102282	The Qualitative Methods and Numerical Simulation for Differential Equations	选	64	64				4.0	5	
	040102571	高等统计	选	64	64				4.0	8	
	020100051	创新研究训练	选	32				32	2.0	7	
	020100041	创新研究实践 I	选	32				32	2.0	7	
	020100031	创新研究实践 II	选	32				32	2.0	7	
	020100061	创业实践	选	32				32	2.0	7	
	合 计			选	选修课修读最低要求 16.0 学分						

备注：学生根据自己开展科研训练项目、学科竞赛、发表论文、获得专利和自主创业等情况申请折算为一定的专业选修课学分（创新研究训练、创新研究实践 I、创新研究实践 II、创业实践等创新创业课程）。每个学生累计申请为专业选修课总学分不超过 4 个学分。经学校批准认定为选修课学分的项目、竞赛等不再获得对应第二课堂的创新学分。

三、集中实践教学环节

课 程 代 码	课 程 名 称	是否必修	学 时 数		学分数	开课学期
			实践	授课		
006100151	军事技能	必	2 周		2.0	1
031101551	马克思主义理论与实践	必	2 周		2.0	3
040101201	走进现代代数学和几何学	必	2 周		2.0	1
040102661	数学专业导论	必	2 周		2.0	2
040100841	数学模型课程设计	必	2 周		2.0	4
040102581	数学技术实践	必	2 周		2.0	5
040100361	面向对象程序设计课程设计	选	2 周		2.0	6
040101521	数据结构课程设计	选	2 周		2.0	3
040102352	数据库系统课程设计	选	2 周		2.0	4
040101462	数值分析课程设计	选	3 周		3.0	4
040102711	统计学习与数据科学课程设计	选	3 周		3.0	4
040102511	回归分析课程设计	选	2 周		2.0	5
040100292	微分方程数值解课程设计	选	2 周		2.0	5
040100973	毕业实习	必	4 周		4.0	7-8
040100264	毕业设计（论文）	必	15 周		8.0	8
合 计		必	31 周		24.0	
		选	选修课修读最低要求 4.0 学分			

课程拓扑图



四、课程体系与毕业要求关系矩阵

序号	课程名	专业毕业要求										
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1	习近平新时代中国特色社会主义思想						•	•	•	•		
2	思想道德与法治						•	•	•	•		•
3	中国近现代史纲要						•	•	•	•	•	
4	毛泽东思想和中国特色社会主义理论体系概论						•	•	•	•		•
5	马克思主义基本原理						•	•	•	•		•
6	形势与政策						•	•	•	•	•	•
7	学术英语（一）								•		•	•
8	学术英语（二）								•		•	•
9	人工智能导论			•	•	•						•
10	体育（一）						•			•		•
11	体育（二）						•			•		•
12	体育（三）						•			•		•
13	体育（四）						•			•		•
14	军事理论						•		•	•	•	
15	Python 语言程序设计		•			•			•			•
16	大学物理I（一）		•	•			•	•				
17	大学物理I（二）		•	•			•	•				
18	大学物理实验（一）		•	•	•		•	•				
19	大学物理实验（二）		•	•	•		•	•				
20	解析几何	•	•									
21	高等代数（上）	•	•									
22	数学分析（一）	•	•									
23	高等代数（下）	•	•									
24	数学分析（二）	•	•									
25	数学分析（三）	•	•									
26	常微分方程	•	•									
27	概率论	•	•									•
28	数学模型	•	•			•						
29	复变函数	•	•									
30	微分几何	•	•									
31	抽象代数	•	•									
32	实变函数	•	•									
33	拓扑学	•	•									
34	数学物理方程	•	•									
35	泛函分析	•	•									
36	分析与代数选讲	•	•	•								
37	初等数论	•	•		•							
38	代数学基础	•	•				•					

序号	课程名	专业毕业要求										
		1.	2.	3.	4.	5.	6.	7.	8.	9	10	11
39	微分方程思想方法选讲	•		•								
40	黎曼曲面与黎曼几何	•										
41	离散数学	•	•		•							
42	面向对象程序设计	•	•	•								
43	数据结构	•	•	•	•	•						
44	神经网络与深度学习	•	•	•	•							
45	数值分析	•	•	•	•	•						•
46	矩阵计算	•		•	•	•					•	
47	数学软件与数学实验	•	•	•	•							
48	算法设计与分析	•		•	•	•			•			
49	数据库系统	•	•									
50	微分方程数值解	•		•								
51	数值优化算法			•	•				•		•	•
52	有限元方法与计算	•		•	•				•			•
53	计算机图形学	•	•	•	•	•			•			•
54	计算流体力学	•	•	•						•		
55	计算机网络	•	•									
56	数理统计	•		•								
57	Statistical Learning and Data Science	•				•				•		
58	统计学习与数据科学	•				•				•		
59	Statistic and regression with R	•				•					•	
60	运筹学			•		•			•			
61	贝叶斯统计与知识推理	•	•									•
62	机器学习及其应用		•	•	•	•	•	•				•
63	多元统计分析	•	•			•						
64	回归分析	•	•			•						
65	随机过程	•	•									•
66	非参数统计	•	•									•
67	蒙特卡罗方法及其应用	•	•									•
68	数理金融		•				•		•			
69	时间序列分析	•	•			•						
70	寿险精算		•				•		•			
71	试验设计与分析	•	•		•	•						•
72	量子信息与量子计算	•	•				•					
73	测度论	•		•					•			
74	The Qualitative Methods and Numerical Simulation for Differential Equations			•	•				•			
75	高等统计	•	•		•	•						•
76	创新研究训练	•	•			•		•	•			
77	创新研究实践 I	•	•			•		•	•			

序号	课程名	专业毕业要求										
		1.	2.	3.	4.	5.	6.	7.	8.	9	10	11
78	创新研究实践 II	•	•			•		•	•			
79	创业实践	•	•			•		•	•			
80	军事技能							•	•	•	•	•
81	马克思主义理论与实践							•	•	•	•	•
82	走进现代数学和几何学	•			•							
83	数学专业导论	•	•				•					
84	数学模型课程设计		•	•		•				•		•
85	数学技术实践	•	•	•	•	•						
86	面向对象程序设计课程设计	•	•	•								
87	数据结构课程设计	•	•	•						•		•
88	数据库系统课程设计	•	•	•						•		•
89	数值分析课程设计	•	•	•	•	•					•	
90	统计学习与数据科学课程设计			•		•				•		•
91	回归分析课程设计		•	•		•				•		•
92	毕业实习		•	•		•	•		•		•	•
93	毕业设计（论文）		•	•		•	•	•	•		•	•

五、第二课堂

第二课堂由人文素质教育和“三创”能力培养两部分组成。

1.人文素质教育基本要求

学生在取得专业教学计划规定学分的同时，还应结合自己的兴趣适当参加课外人文素质教育活动，参加活动的学分累计不少于 7 个学分。其中，大学生心理健康教育 2 学分、国家安全教育 1 学分、大学生职业生涯规划 2 学分，纳入人文素质教育学分。

2. “三创”能力培养基本要求

学生在取得本专业教学计划规定学分的同时，还必须参加国家创新创业训练计划、广东省创新创业训练计划、SRP（学生研究计划）、百步梯攀登计划或一定时间的各类课外创新能力培养活动（如学科竞赛、学术讲座等），参加活动的学分累计不少于 4 个学分。

六、研究生阶段培养方案课程信息（本学院）

1.应用数学专业学术型硕士课程信息

课程性质	多选组	课程代码	课程名称	学分	总学时	开课学期	课程负责人	是否必修	备注
公共必修课	2 选 1	S0001025	自然辩证法概论	1	18	第一学期	陶建文	必修	
		S0001026	马克思主义与社会科学方法论	1	18	第一学期	吴国林	必修	
		S0001089	新时代中国特色社会主义思想理论与实践	2	36	第一学期	郭厚佳	必修	
		S0002046	综合英语	3	48	第一学期	程杰	必修	
		S0004081	论文写作与学术规范	2	32	第二学期	温焕尧	必修	
专业基础课	7 选 2	S0701021	最优化原理	4	64	第一学期	贲树军	必修	
		S0701040	分形几何理论及应用	4	64	第二学期	武文	必修	
		S0701053	测度论	4	64	第一学期	熊瑛	必修	
		S0701095	二阶椭圆型偏微分方程	4	64	第二学期	周富军	必修	
		S0701103	Sobolev 空间	4	64	第一学期	季善明	必修	
		S0701130	The Qualitative Methods and Numerical Simulation for Differential Equations	4	64	第三学期	刘锐	必修	
		S0701137	计算复杂性 with 算法设计	4	64	第二学期	张威	必修	
		S0701116	Advanced Modern Algebra	4	64	第一学期	孙浩	必修	
		S0701117	Foundations of Modern Analysis	4	64	第一学期	王友军	必修	
专业选修课		S0701028	偏微分方程的变分方法	4	64	第二学期	王友军	选修	
		S0701036	遍历理论	4	64	第三学期	匡锐	选修	
		S0701059	调和分析	4	64	第三学期	吴笛	选修	
		S0701077	非线性动力系统引论	4	64	第三学期	杨启贵	选修	
		S0701082	微分几何	4	64	第二学期	张玮	选修	
		S0701093	拓扑动力系统	4	64	第二学期	马东魁	选修	
		S0701094	应用分支理论基础	4	64	第二学期	刘深泉	选修	

		S0701096	分支与混沌引论	4	64	第二学期	杨启贵	选修	
		S0701097	神经动力学计算	4	64	第三学期	刘深泉	选修	
		S0701113	计算系统生物学导论	4	64	第三学期	刘锐	选修	
		S0701118	二阶抛物型偏微分方程	4	64	第二学期	林俊宇	选修	
		S0701119	激波理论初步	4	64	第二学期	朱长江	选修	
		S0701122	Geometric measure theory	4	64	第三学期	李兵	选修	
		S0701124	随机分析	4	64	第二学期	曾才斌	选修	
		S0701132	黎曼-希尔伯特方法	4	64	第二学期	凌黎明	选修	
		S0701133	黎曼曲面	4	64	第一学期	凌黎明	选修	
		S0701134	鲁棒优化	3	48	第一学期	张威	选修	
公共选修课		S0002018	第二外语（日）	2	64	第二学期	贾海平	选修	
		S0002019	第二外语（德语）	2	64	第二学期	王玉静	选修	
		S0002029	实用英语写作	1	36	第二学期	姚楠	选修	
		S0002030	商务英语	1	36	第二学期	赵淑梅	选修	
		S0002034	学术交流英语	1	36	第二学期	仓兰菊	选修	
		S0002037	英美文化	1	36	第二学期	刘曦芬	选修	
		S0002038	英文电影欣赏	1	36	第二学期	陈涛	选修	
		S0002040	雅思学习	1	36	第二学期	谭小兵	选修	
		S0002041	托福学习	1	36	第二学期	张慧明	选修	
		S0002042	新闻英语	1	36	第二学期	肖云华	选修	
		S0004013	经济学原理	2	32	第二学期	刘小勇	选修	
		S0004015	管理学原理	2	50	第二学期	黄爱华	选修	
		S0004060	英语电影与跨文化交际	2	32	第二学期	谢宝霞	选修	
		S0004099	心理学与生活	2	32	第二学期	朱茂玲	选修	

		S0004103	艺术作品中的历史与文化	2	32	第二学期	谢宝霞	选修	
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2.基础数学专业学术型硕士课程信息

课程性质	多选组	课程代码	课程名称	学分	总学时	开课学期	课程负责人	是否必修	备注
公共必修课	2 选 1	S0001025	自然辩证法概论	1	18	第一学期	陶建文	必修	
		S0001026	马克思主义与社会科学方法论	1	18	第一学期	吴国林	必修	
		S0001089	新时代中国特色社会主义思想理论与实践	2	36	第一学期	郭厚佳	必修	
		S0002046	综合英语	3	48	第一学期	程杰	必修	
		S0004081	论文写作与学术规范	2	32	第二学期	温焕尧	必修	
专业基础课	7 选 2	S0701040	分形几何理论及应用	4	64	第二学期	武文	必修	
		S0701053	测度论	4	64	第一学期	熊瑛	必修	
		S0701071	代数几何	4	64	第二学期	李茂生	必修	
		S0701087	有限群论	4	64	第二学期	周胜林	必修	
		S0701095	二阶椭圆型偏微分方程	4	64	第二学期	周富军	必修	
		S0701103	Sobolev 空间	4	64	第一学期	季善明	必修	
		S0701130	The Qualitative Methods and Numerical Simulation for Differential Equations	4	64	第三学期	刘锐	必修	
		S0701116	Advanced Modern Algebra	4	64	第一学期	孙浩	必修	
		S0701117	Foundations of Modern Analysis	4	64	第一学期	王友军	必修	
		S0701036	遍历理论	4	64	第三学期	匡锐	选修	
		S0701077	非线性动力系统引论	4	64	第三学期	杨启贵	选修	
		S0701082	微分几何	4	64	第二学期	张玮	选修	
		S0701089	置换群与组合结构	4	64	第三学期	周胜林	选修	
		S0701093	拓扑动力系统	4	64	第二学期	马东魁	选修	
		S0701096	分支与混沌引论	4	64	第二学期	杨启贵	选修	

		S0701102	线性代数群引论	4	64	第三学期	郑驻军	选修	
		S0701118	二阶抛物型偏微分方程	4	64	第二学期	林俊宇	选修	
		S0701119	激波理论初步	4	64	第二学期	朱长江	选修	
		S0701121	数论导引	4	64	第二学期	胡甦	选修	
		S0701122	Geometric measure theory	4	64	第三学期	李兵	选修	
		S0701125	量子计算与量子信息	4	64	第一学期	林冰生	选修	
		S0701134	鲁棒优化	3	48	第一学期	张威	选修	
公共选修课		S0002018	第二外语（日）	2	64	第二学期	贾海平	选修	
		S0002019	第二外语（德语）	2	64	第二学期	王玉静	选修	
		S0002029	实用英语写作	1	36	第二学期	姚楠	选修	
		S0002030	商务英语	1	36	第二学期	赵淑梅	选修	
		S0002034	学术交流英语	1	36	第二学期	仓兰菊	选修	
		S0002037	英美文化	1	36	第二学期	刘曦芬	选修	
		S0002038	英文电影欣赏	1	36	第二学期	陈涛	选修	
		S0002040	雅思学习	1	36	第二学期	谭小兵	选修	
		S0002041	托福学习	1	36	第二学期	张慧明	选修	
		S0002042	新闻英语	1	36	第二学期	肖云华	选修	
		S0004013	经济学原理	2	32	第二学期	刘小勇	选修	
		S0004015	管理学原理	2	50	第二学期	黄爱华	选修	
		S0004060	英语电影与跨文化交际	2	32	第二学期	谢宝霞	选修	
		S0004099	心理学与生活	2	32	第二学期	朱茂玲	选修	
		S0004103	艺术作品中的历史与文化	2	32	第二学期	谢宝霞	选修	

3.计算数学专业学术型硕士课程信息

课程性质	多选组	课程代码	课程名称	学分	总学时	开课学期	课程负责人	是否必修	备注
公共必修课	2 选 1	S0001025	自然辩证法概论	1	18	第一学期	陶建文	必修	
		S0001026	马克思主义与社会科学方法论	1	18	第一学期	吴国林	必修	
		S0001089	新时代中国特色社会主义思想理论与实践	2	36	第一学期	郭厚佳	必修	
		S0002046	综合英语	3	48	第一学期	程杰	必修	
		S0004081	论文写作与学术规范	2	32	第二学期	温焕尧	必修	
专业基础课	3 选 2	S0701021	最优化原理	4	64	第一学期	贲树军	必修	
		S0701130	The Qualitative Methods and Numerical Simulation for Differential Equations	4	64	第三学期	刘锐	必修	
		S0701137	计算复杂性与算法设计	4	64	第二学期	张威	必修	
		S0701116	Advanced Modern Algebra	4	64	第一学期	孙浩	必修	
		S0701117	Foundations of Modern Analysis	4	64	第一学期	王友军	必修	
专业选修课		S0003006	模糊数学	3	54	第二学期	凌卫新	选修	
		S0003007	矩阵分析	2	54	第一学期	张威	选修	
		S0701007	随机过程论	4	64	第二学期	刘卉灵	选修	
		S0701024	高等统计	4	64	第三学期	何志坚	选修	
		S0701082	微分几何	4	64	第二学期	张玮	选修	
		S0701094	应用分支理论基础	4	64	第二学期	刘深泉	选修	
		S0701097	神经动力学计算	4	64	第三学期	刘深泉	选修	
		S0701113	计算系统生物学导论	4	64	第三学期	刘锐	选修	
		S0701134	鲁棒优化	3	48	第一学期	张威	选修	

		S0701136	半经典半导体器件及其计算方法	3	54	第三学期	姚文琦	选修	
		S0714008	数据挖掘与统计决策	3	48	第二学期	刘小兰	选修	
公共选修课		S0002018	第二外语（日）	2	64	第二学期	贾海平	选修	
		S0002019	第二外语（德语）	2	64	第二学期	王玉静	选修	
		S0002029	实用英语写作	1	36	第二学期	姚楠	选修	
		S0002030	商务英语	1	36	第二学期	赵淑梅	选修	
		S0002034	学术交流英语	1	36	第二学期	仓兰菊	选修	
		S0002037	英美文化	1	36	第二学期	刘曦芬	选修	
		S0002038	英文电影欣赏	1	36	第二学期	陈涛	选修	
		S0002040	雅思学习	1	36	第二学期	谭小兵	选修	
		S0002041	托福学习	1	36	第二学期	张慧明	选修	
		S0002042	新闻英语	1	36	第二学期	肖云华	选修	
		S0004013	经济学原理	2	32	第二学期	刘小勇	选修	
		S0004015	管理学原理	2	50	第二学期	黄爱华	选修	
		S0004060	英语电影与跨文化交际	2	32	第二学期	谢宝霞	选修	
		S0004099	心理学与生活	2	32	第二学期	朱茂玲	选修	
		S0004103	艺术作品中的历史与文化	2	32	第二学期	谢宝霞	选修	

4. 概率论与数理统计专业学术型硕士课程信息

课程性质	多选组	课程代码	课程名称	学分	总学时	开课学期	课程负责人	是否必修	备注
公共必修课	2 选 1	S0001025	自然辩证法概论	1	18	第一学期	陶建文	必修	
		S0001026	马克思主义与社会科学方法论	1	18	第一学期	吴国林	必修	
		S0001089	新时代中国特色社会主义思想理论与实践	2	36	第一学期	郭厚佳	必修	
		S0002046	综合英语	3	48	第一学期	程杰	必修	
		S0004081	论文写作与学术规范	2	32	第二学期	温焕尧	必修	
专业基础课	5 选 2	S0701007	随机过程论	4	64	第二学期	刘卉灵	必修	
		S0701024	高等统计	4	64	第三学期	何志坚	必修	
		S0701040	分形几何理论及应用	4	64	第二学期	武文	必修	
		S0701053	测度论	4	64	第一学期	熊瑛	必修	
		S0701130	The Qualitative Methods and Numerical Simulation for Differential Equations	4	64	第三学期	刘锐	必修	
		S0701116	Advanced Modern Algebra	4	64	第一学期	孙浩	必修	
		S0701117	Foundations of Modern Analysis	4	64	第一学期	王友军	必修	
专业选修课		S0701036	遍历理论	4	64	第三学期	匡锐	选修	
		S0701077	非线性动力系统引论	4	64	第三学期	杨启贵	选修	
		S0701093	拓扑动力系统	4	64	第二学期	马东魁	选修	
		S0701096	分支与混沌引论	4	64	第二学期	杨启贵	选修	
		S0701122	Geometric measure theory	4	64	第三学期	李兵	选修	
		S0701123	多目标决策理论、方法及应用研究	3	48	第三学期	邓雪	选修	
		S0701124	随机分析	4	64	第二学期	曾才斌	选修	

		S0701131	Portfolio and Risk Analysis	4	64	第三学期	邓雪	选修	
		S0701134	鲁棒优化	3	48	第一学期	张威	选修	
		S0701138	统计学习与数据科学导论	3	48	第二学期	夏立	选修	
		S0714008	数据挖掘与统计决策	3	48	第二学期	刘小兰	选修	
公共选修课		S0002018	第二外语（日）	2	64	第二学期	贾海平	选修	
		S0002019	第二外语（德语）	2	64	第二学期	王玉静	选修	
		S0002029	实用英语写作	1	36	第二学期	姚楠	选修	
		S0002030	商务英语	1	36	第二学期	赵淑梅	选修	
		S0002034	学术交流英语	1	36	第二学期	仓兰菊	选修	
		S0002037	英美文化	1	36	第二学期	刘曦芬	选修	
		S0002038	英文电影欣赏	1	36	第二学期	陈涛	选修	
		S0002040	雅思学习	1	36	第二学期	谭小兵	选修	
		S0002041	托福学习	1	36	第二学期	张慧明	选修	
		S0002042	新闻英语	1	36	第二学期	肖云华	选修	
		S0004013	经济学原理	2	32	第二学期	刘小勇	选修	
		S0004015	管理学原理	2	50	第二学期	黄爱华	选修	
		S0004060	英语电影与跨文化交际	2	32	第二学期	谢宝霞	选修	
		S0004099	心理学与生活	2	32	第二学期	朱茂玲	选修	
		S0004103	艺术作品中的历史与文化	2	32	第二学期	谢宝霞	选修	

5.运筹学与控制论专业学术型硕士课程信息

课程性质	多选组	课程代码	课程名称	学分	总学时	开课学期	课程负责人	是否必修	备注
公共必修课	2 选 1	S0001025	自然辩证法概论	1	18	第一学期	陶建文	必修	
		S0001026	马克思主义与社会科学方法论	1	18	第一学期	吴国林	必修	
		S0001089	新时代中国特色社会主义思想理论与实践	2	36	第一学期	郭厚佳	必修	
		S0002046	综合英语	3	48	第一学期	程杰	必修	
		S0004081	论文写作与学术规范	2	32	第二学期	温焕尧	必修	
专业基础课	3 选 2	S0701021	最优化原理	4	64	第一学期	贲树军	必修	
		S0701024	高等统计	4	64	第三学期	何志坚	必修	
		S0701053	测度论	4	64	第一学期	熊瑛	必修	
		S0701116	Advanced Modern Algebra	4	64	第一学期	孙浩	必修	
		S0701117	Foundations of Modern Analysis	4	64	第一学期	王友军	必修	
专业选修课		S0701007	随机过程论	4	64	第二学期	刘卉灵	选修	
		S0701082	微分几何	4	64	第二学期	张玮	选修	
		S0701115	随机最优控制	4	64	第二学期	高文华	选修	
		S0701124	随机分析	4	64	第二学期	曾才斌	选修	
		S0701134	鲁棒优化	3	48	第一学期	张威	选修	
		S0701135	变分分析	4	64	第二学期	潘少华	选修	
公共选修课		S0002018	第二外语（日）	2	64	第二学期	贾海平	选修	
		S0002019	第二外语（德语）	2	64	第二学期	王玉静	选修	
		S0002029	实用英语写作	1	36	第二学期	姚楠	选修	
		S0002030	商务英语	1	36	第二学期	赵淑梅	选修	
		S0002034	学术交流英语	1	36	第二学期	仓兰菊	选修	
		S0002037	英美文化	1	36	第二学期	刘曦芬	选修	

		S0002038	英文电影欣赏	1	36	第二学期	陈涛	选修	
		S0002040	雅思学习	1	36	第二学期	谭小兵	选修	
		S0002041	托福学习	1	36	第二学期	张慧明	选修	
		S0002042	新闻英语	1	36	第二学期	肖云华	选修	
		S0004013	经济学原理	2	32	第二学期	刘小勇	选修	
		S0004015	管理学原理	2	50	第二学期	黄爱华	选修	
		S0004060	英语电影与跨文化交际	2	32	第二学期	谢宝霞	选修	
		S0004099	心理学与生活	2	32	第二学期	朱茂玲	选修	
		S0004103	艺术作品中的历史与文化	2	32	第二学期	谢宝霞	选修	

英文版

Mathematics (Strengthening Basic Disciplines Program)

Program Code (Bachelor): 0701

Duration: 4 years (Bachelor) 、 3+1+2 years (Master) 、 3+1+4 years (PhD)

Educational Objectives:

Mathematics (Strengthening Basic Disciplines Program) is based on the frontier of mathematics and takes "climbing the scientific peak and leading the future of the discipline" as its long-term goal to cultivate leading talents in the field of mathematics who have both national feelings and global vision, serve the country's major strategic needs, "have excellent learning ability, ideological ability and action ability", and develop morally, intellectually, physically, artistically and laboriously in an all-round way.

Overview of educational objectives

- (1) Actively respond to major national strategic needs, adapt to social development and scientific and technological progress, have excellent personal cultivation and professional ethics, and have international vision and leadership ability.
- (2) Have a solid mathematical foundation and broad mathematical theoretical knowledge, and master the basic ideas and methods of mathematics and applied mathematics.
- (3) Get strict mathematical thinking training, have solid specialized field knowledge, be able to carry out basic and applied research based on mathematical and applied mathematical methods in different fields, and show high-level scientific research ability.
- (4) Be able to have a strong potential ability to use mathematical theory knowledge to solve theoretical and practical problems.

Student Outcomes:

№.1. professional knowledge and literacy. Master solid mathematical foundation and professional knowledge, and have good mathematical thinking and mathematical literacy.

№.2. problem analysis. Be able to identify and standardize the expression of complex problems in mathematics and related fields, and draw scientific conclusions combined with literature research and subject analysis.

№.3. design/develop solutions. Be able to design and develop solutions to complex problems in mathematics and related fields, considering theoretical rigor, computational efficiency and feasibility.

№4. research ability. Be able to study complex problems in mathematics and related fields based on Mathematics and engineering principles and scientific methods, design experiments, analyze data and draw reasonable conclusions.

№5. use modern tools. Be able to develop, select and use appropriate technologies, resources, modern engineering and information technology tools for complex problems in mathematics and related fields, predict and simulate complex problems, and understand their limitations.

№6. science and society. Be able to conduct reasonable analysis based on relevant background knowledge of mathematics major, evaluate the impact of solutions to complex scientific and engineering problems on society, health, safety, law and culture, and understand the responsibilities to be undertaken.

№7. subject cognition and development. Understand the discipline development law, evaluate its role in promoting mathematics and related fields, and grasp the frontier direction.

№8. professional norms. Have humanistic and social science literacy and sense of social responsibility, and abide by academic ethics, laws and professional norms.

№9. individuals and teams. Be able to undertake individual tasks or the role of principal in a multidisciplinary team to achieve collaboration and coordination.

№10. communication skills. Be able to effectively communicate with peers and the public, and have cross-cultural communication ability.

№11. lifelong learning. Have the ability of autonomous learning, adapt to the development of disciplines and continuously update the knowledge system.

Relationship Matrix between Educational Objectives and Student Outcomes:

Educational Objectives Student Outcomes	Educational Objective 1	Educational Objective 2	Educational Objective 3	Educational Objective 4
№1. professional knowledge and literacy		•	•	•
№2. problem analysis		•	•	•
№3. design/develop solutions		•	•	•
№4. research ability		•	•	•
№5. use modern tools			•	•
№6. science and society	•		•	
№7. subject cognition and development	•			•
№8. professional norms	•	•		
№9. individuals and teams	•		•	

Educational Objectives Student Outcomes	Educational Objective 1	Educational Objective 2	Educational Objective 3	Educational Objective 4
№10. communication skills	•	•	•	•
№11. lifelong learning	•	•	•	•

Program Profile:

The mathematics discipline of South China University of technology was founded in the Department of engineering mathematics when South China Institute of technology was founded in 1958. Luwen, a second-class professor at that time, served as the first Dean of the Department, and began to enroll undergraduates majoring in Mathematics in the same year. After several adjustments, the Independent College of mathematics was finally established in 2013. Through talent cultivation and introduction, the college has made great progress in discipline and faculty construction, talent cultivation, scientific research and academic exchange, teaching research and textbook reform, and its comprehensive strength in teaching and scientific research has been continuously enhanced, which has a great influence in the educational and academic circles at home and abroad. In the fourth round of discipline assessment of the Ministry of education, it obtained B+ grade, ranking 19th in the country, and the fifth round of discipline assessment maintained good performance.

At present, the college has three undergraduate majors: Mathematics and applied mathematics, information and computational science, and statistics. It has a doctoral program in mathematics and a postdoctoral mobile station. In recent years, we have insisted on paying equal attention to basic theory and major application research, and have formed some advantageous directions, such as partial differential equations, algebra and number theory, geometry and topology, computational mathematics, operations research and cybernetics. In 2019, it was selected into the strong foundation plan of the Ministry of education, and in 2019, mathematics and applied mathematics and in 2021, information and computing science were selected into the national first-class undergraduate specialty construction sites. Mathematics and applied mathematics is a national characteristic specialty, a famous specialty and a key specialty in Guangdong Province. The College of mathematics has a mathematics research institute, a national engineering mathematics basic course teaching base and a Guangdong mathematics technology experimental teaching demonstration center.

The college has a strong faculty, with 92 full-time teachers. There are nearly 20 high-level talents, including winners of the national fund for Distinguished Young Scholars, famous teachers of the national "ten thousand talents program", winners of the national fund for outstanding young scholars, new century talents of the Ministry of education, provincial famous teachers of teaching, provincial "ten thousand" talent project, young Pearl River scholars, Pearl River science and technology stars, and young top talents of the Guangdong provincial special support program. Young and middle-aged teachers are the backbone of the whole teaching staff, and the structure of the teaching staff is reasonable. The college's teachers have

devoted themselves to mathematical research and teaching research, and have won many excellent scientific research and teaching achievements, such as one second prize for national teaching achievements, two first prizes for provincial and ministerial Natural Sciences, one national famous teacher, and four national first-class undergraduate courses such as "advanced mathematics", "mathematical physics equations", "mathematical models" and "calculus in English". The college strengthens international exchanges and cooperation, and promotes the implementation of undergraduate and postgraduate joint training programs with universities such as the University of Western Ontario in Canada, the University of Birmingham in the United Kingdom, the University of Edinburgh in the United Kingdom, and the University of Nantes in France.

Mathematics (Strengthening Basic Disciplines Program) aims to cultivate a group of high-end mathematics talents for the country, meet the needs of scientific research, education and high-end technology industry, provide theoretical support for scientific and technological innovation, and enhance the national scientific and technological competitiveness and security.

Program Features:

1. based on the frontier of Mathematical Science, lay a solid foundation, emphasize innovation, and pay attention to the integration of science and education.
2. highlight the intersection of mathematics and applied disciplines, explore the "mathematics+" compound talent training mode, and enable the rapid development of new engineering.
3. relying on the geographical and economic advantages of Guangdong Hong Kong Macao Greater Bay area, it will provide high-quality talents for the Bay Area's mathematics and frontier cross fields, and help the country's major needs and "innovation driven development strategy".
4. the trinity mode of "tutorial system + scientific research projects + academic exchanges" will strengthen the cultivation of scientific research ability of strong base classes.

Degree Conferred:

At the undergraduate stage, those who have completed the contents specified in the professional talent training program and meet the requirements of the University for degree granting can be awarded a *Bachelor of Natural Science*. The transferred students continue to study in the postgraduate course according to the direction they choose, and those who meet the application conditions for the master's or doctor's degree and meet the academic standards specified by the university can obtain the corresponding master's or doctor's degree.

Core Courses:

Mathematical Analysis、Advanced Algebra、Analytic Geometry、Ordinary Differential Equations、Real Variable Function、Functions of a Complex Variable、Abstract Algebra、Equations of Mathematical Physics、

Probability Theory、Functional Analysis、Topology

Featured Courses:

Freshmen Seminars: Introduction to Mathematics Specialty, Enter Modern Algebra and Geometry

Special Topics: Mathematical Models

Courses Taught in English: Statistic and regression with R、Statistical Learning and Data Science、The Qualitative Methods and Numerical Simulation for Differential Equations

Subject Frontiers Courses: Thoughts and Methods in Differential Equations

Innovation Practice: Mathematical Models (Course Design)

Entrepreneurship Courses: Mathematical Models (Course Design)

Competitive Teaching Combination Course: Mathematical Models、Select topics on analysis and algebra

Education on The Hard-Working Spirit: Mathematical Technology Practice

1. Registration Form of Curriculum Credits

1.1 Credits Registration Form

A. Credits Registration Form									
Course Category		Requirement			Credits		Academic Hours		Remarks
General Basic Courses		Compulsory			37		752		
		General Education			10		160		
Specialty Basic Courses		Compulsory			69		1104		
Elective Courses		Elective			16		256		
Total					132		2272		
Practice Training		Compulsory			24		31 weeks		
		Elective			4		4 weeks		
Credits Required for Graduation		132+28=160							
Suggested Credits for Each Semester		1	2	3	4	5	6	7	8
		25	25	25	25	22	22	8	8

Note: upon graduation, students must complete the credits specified in the professional teaching plan, and obtain 7 humanities quality education credits and 4 innovation ability training credits in the second classroom.

1.2 Category Registration Form

Academic Hours					Credits						
Total	Include		Include		Total	Include		Include			Include
	Compulsory	Elective	Theory Course	Lab		Compulsory	Elective	Practice-concentrated Training	Theory Course Credits	Lab	Innovation and Entrepreneurship Education
2272	1856	416	1808	464	160	130	30	28	117.5	14.5	13

2. Courses Schedule

Course Category	Course No.	Course Title	C/E	Total Curriculum Hours					Credits	Semester
				Class Hours	Theoretical class hours	Lab Hours	Practice Hours	Other Hours		
I Basic Course	031101761	The Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era		48	36			12	3.0	1
	031101661	Ethics and Rule of Law	C	40	36			4	2.5	2

Course Category	Course No.	Course Title	C/E	Total Curriculum Hours					Credits	Semester
				Class Hours	Theoretic al class hours	Lab Hours	Practice Hours	Other Hours		
	031101371	Skeleton of Chinese Modern History	C	40	36			4	2.5	3
	031101424	Thought of Mao ZeDong and Theory of Socialism with Chinese Characteristics		40	36			4	2.5	4
	031101522	Fundamentals of Marxism Principle		40	36			4	2.5	4
	031101331	Analysis of the Situation & Policy		64	64				2.0	1-8
	044101383	English for Academic Purposes (1)		32	32			2.0	1	1
	044102452	English for Academic Purposes (2)		32	32			2.0	2	2
	084101181	Introduction to Artificial Intelligence		36	24	12			2.0	1
	052100332	Physical Education (1)		36			36		1.0	1
	052100012	Physical Education (2)		36			36		1.0	2
	052100842	Physical Education (3)		36			36		1.0	3
	052100062	Physical Education (4)		36			36		1.0	4
	006100112	Military Principle		36			18		2.0	2
	045102811	Python		40	32			8	2.0	2
	041100582	General Physics (1)		48	48				3.0	2
	041101391	General Physics (2)		48	48				3.0	3
	041100671	Physics Experiment (1)		32		32			1.0	3
	041101051	Physics Experiment (2)		32		32			1.0	4
		Humanities, Social Science	E	128	128				8.0	
		Science and Technology		32	32				2.0	
		Total			912	638	76		198	47.0

2. Courses Schedule

Course Category	Course No.	Course Title	C/E	Total Curriculum Hours					Credits	Semester
				Class Hours	Theoretical class hours	Lab Hours	Practice Hours	Other Hours		
Specialty Basic Courses	040101591	Analytic Geometry	C	48	48				3.0	1
	040100111	Advanced Algebra (I)	C	80	80				5.0	1
	040100282	Mathematical Analysis(1)	C	80	80				5.0	1
	040100931	Advanced Algebra (II)	C	80	80				5.0	2
	040100352	Mathematical Analysis(2)	C	96	96				6.0	2
	040101311	Mathematical Analysis(3)	C	96	96				6.0	3
	040100131	Ordinary Differential Equations	C	64	64				4.0	3
	040100492	Probability Theory	C	64	64				4.0	3
	040100162	Mathematical Models	C	48	48				3.0	4
	040100061	Functions of a Complex Variable	C	64	64				4.0	4
	040100121	Differential Geometry	C	64	64				4.0	4
	040102702	Abstract Algebra	C	64	64				4.0	4
	040101052	Real Variable Function	C	64	64				4.0	5
	040102682	Topology	C	64	64				4.0	5
	040100301	Equations of Mathematical Physics	C	64	64				4.0	6
	040101181	Functional Analysis	C	64	64				4.0	6
	Total			1104	1104				69.0	
Elective Courses	Module 1: Optional Courses (Minimum elective course credits required: 13.0)									
	Courses on Fundamentals of modern mathematics									
	040102691	Select topics on analysis and algebra	E	32	32				2.0	3
	040101721	Elementary Number theory	E	64	64				4.0	3
	040101531	Foundations of Algebra	E	64	64				4.0	6

[illegible]

Intercollegiate (non-Mathematics) courses	less than 4 (≤ 4) credits	E						≤ 4	
040102451	Quantum Information and Quantum Computation	E	64	64				4.0	5
040101511	Measure Theory	E	64	64				4.0	7
040102282	The Qualitative Methods and Numerical Simulation for Differential Equations	E	64	64				4.0	5
040102571	Advanced Statistics	E	64	64				4.0	8
020100051	Innovation Research Training	E	32				32	2.0	7
020100041	Innovation Research Practice I	E	32				32	2.0	7
020100031	Innovation Research Practice II	E	32				32	2.0	7
020100061	Entrepreneurial Practice	E	32				32	2.0	7
Total		E	Minimum elective course credits required: 16.0						

Note: students apply for conversion to certain professional elective course credits (innovation research training, innovation research practice I, innovation research practice II, entrepreneurship practice and other innovation and entrepreneurship courses) according to their own scientific research training projects, discipline competitions, published papers, patents and independent entrepreneurship. The total credits applied for professional elective courses by each student shall not exceed 4 credits. Projects and competitions approved by the University as elective course credits will no longer receive innovation credits corresponding to the second classroom.

3. Practice-concentrated Training

Course No	Course Title	C/E	Total Curriculum Hours		Credits	Semester
			Practice weeks	Lecture Hours		
006100151	Military Training	C	2 weeks		2.0	1
031101551	Marxism Theory and Practice	C	2 weeks		2.0	3
040101201	Enter Modern Algebra and Geometry	C	2 weeks		2.0	1
040102661	Introduction to Mathematics Speciality	C	2 weeks		2.0	2
040100841	Mathematical Models (Course Design)	C	2 weeks		2.0	4
040102581	Mathematical Technology Practice	C	2 weeks		2.0	5
040100361	Object-oriented Programming (Course Design)	E	2 weeks		2.0	6
040101521	Data Structures (Course Design)	E	2 weeks		2.0	3
040102352	Database Systems (Course Design)	E	2 weeks		2.0	4
040101462	Numerical Analysis (Course Design)	E	3 weeks		3.0	4
040102711	Statistical Learning and Data Science (Course Design)	E	2 weeks		3.0	4
040102511	Regression Analysis (Course Design)	E	2 weeks		2.0	5
040100292	Numerical Methods of Differential Equation (Course Project)	E	2 weeks		2.0	5
040100973	Graduation Practice	E	4 weeks		4.0	7-8
040100264	Graduation Project	E	15 weeks		8.0	8
Total		C	31 weeks		24.0	

Serial numb er	Course Name	Graduation requirements for Information and Computing Sciences										
		1	2	3	4	5	6	7	8	9	10	11
35	Functional Analysis	●	●									
36	Select topics on analysis and algebra	●	●	●								
37	Elementary Number theory	●	●		●							
38	Foundations of Algebra	●	●				●					
39	Thoughts and Methods in Differential Equations	●		●								
40	Riemann Surface and Riemann Geometry	●										
41	Discrete Mathematics	●	●		●							
42	Object-oriented Programming	●	●	●								
43	Data Structures	●	●	●	●	●						
44	Neural Networks and Deep Learning	●	●	●	●							
45	Numerical Analysis	●	●	●	●	●						●
46	Matrix calculations	●		●	●	●					●	
47	Mathematics Software and Mathematics Experiments	●	●	●	●							
48	Design and Analysis of Algorithms	●		●	●	●			●			
49	Database Systems	●	●									
50	Numerical Methods of Differential Equation	●		●								
51	Numerical Optimization Algorithms			●	●				●		●	●
52	Finite element method and computation	●		●	●				●			●
53	Computer Graphics	●	●	●	●	●			●			●
54	Computational Fluid Dynamics	●	●	●						●		
55	Computer network	●	●									
56	Mathematical Statistics	●		●								
57	Statistical Learning and Data Science	●				●				●		
58	Statistic and regression with R	●				●					●	
59	Operations Research			●		●			●			
60	Bayesian Statistics and Knowledge Reasoning	●	●									●
61	Big Data Application		●	●	●	●	●	●				●
62	Multivariate Statistical Analysis	●	●			●						
63	Regression Analysis	●	●			●						
64	Stochastic Process	●	●									●
65	Nonparametric Statistics	●	●									●
66	Monte Carlo Methods with some Applications	●	●									●
67	Mathematical Finance		●				●		●			
68	Time Series and Analysis	●	●			●						
69	Life Insurances Actuarial Science		●				●		●			
70	Experimental Design and Analysis	●	●		●	●						●
71	Quantum Information and Quantum Computation	●	●				●					
72	Measure Theory	●		●					●			

Serial numb er	Course Name	Graduation requirements for Information and Computing Sciences										
		1	2	3	4	5	6	7	8	9	10	11
73	The Qualitative Methods and Numerical Simulation for Differential Equations			●	●				●			
74	Advanced Statistics	●	●		●	●						●
75	Innovation Research Training	●	●			●		●	●			
76	Innovation Research Practice I	●	●			●		●	●			
77	Innovation Research Practice II	●	●			●		●	●			
78	Entrepreneurial Practice	●	●			●		●	●			
79	Military Training							●	●	●	●	●
80	Marxism Theory and Practice							●	●	●	●	●
81	Enter Modern Algebra and Geometry	●			●							
82	Introduction to Mathematics Specialty	●	●				●					
83	Mathematical Models （Course Design）		●	●		●				●		●
84	Mathematical Technology Practice	●	●	●	●	●						
85	Object-oriented Programming （Course Design）	●	●	●								
86	Data Structures （Course Design）	●	●	●						●		●
87	Database Systems （Course Design）	●	●	●						●		●
88	Numerical Analysis （Course Design）	●	●	●	●	●					●	
89	Statistical Learning and Data Science （Course Design）			●		●				●		●
90	Regression Analysis （Course Design）		●	●		●				●		●
91	Numerical Methods of Differential Equation (Course Project)	●		●	●		●					
92	Graduation Practice		●	●		●	●		●		●	●
93	Graduation Project		●	●		●	●	●	●		●	●

5.“Second Classroom” Activities

“Second Classroom” Activities are comprised of two parts, Humanities Quality Education and Innovative Ability Cultivation.

(1)Basic Requirements of Humanities Quality Education

Besides gaining course credits listed in one’s subject teaching curriculum, a student is required to participate in extracurricular activities of Humanities Quality Education based on one’s interest, acquiring no less than seven credits. Mental Health Education for College Students (2 credits), National Security Education (1 credit), and Career Planning for College Students (2 credits) are offered in an online format and are included in the second-classroom credits for Humanities Quality Education.

(2)Basic Requirements of Innovative Ability Cultivation

Besides gaining course credits listed in one’s subject teaching curriculum, a student is required to participate in any one of the following activities: National Undergraduate Training Programs for Innovation and Entrepreneurship, Guangdong Undergraduate Training Programs for Innovation and Entrepreneurship, Student Research Program (SRP), One-hundred-steps Innovative Program, or any other extracurricular activities of Innovative Ability Cultivation that last a certain period of time (e.g. subject contests, academic lectures), acquiring no less than four credits.

6.Curriculum Information for Postgraduate Cultivation Programs

1.Course Details for [Applied Mathematics] Academic Master's Program

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
Public compulsory	2 choose 1	S0001025	Introduction to Dialectics of Nature	1	18	Semester 1	Tao Jianwen	C	
		S0001026	Marxism and Social Science Methodology	1	18	Semester 1	Wu Guolin	C	
		S0001089	Theory and Practice of Socialism with Chinese Characteristics for a New Era	2	36	Semester 1	Guo Houjia	C	
		S0002046	Comprehensive English	3	48	Semester 1	Cheng Jie	C	
		S0004081	Academic Writing and Norms	2	32	Semester 2	Wen Huanyao	C	
Specialty Basic Courses	7 choose 2	S0701021	Principles of Optimization	4	64	Semester 1	Ben Benshujun	C	
		S0701040	Fractal Geometry Theory and Applications	4	64	Semester 2	Wu Wen	C	
		S0701053	Measure Theory	4	64	Semester 1	Xiong Ying	C	

		S0701095	Second Order Elliptic Partial Differential Equations	4	64	Semester 2	Zhou Fujun	C	
		S0701103	Sobolev Spaces	4	64	Semester 1	Ji Shanming	C	
		S0701130	The Qualitative Methods and Numerical Simulation for Differential Equations	4	64	Semester 3	Liu Rui	C	
		S0701137	Computational Complexity and Algorithm Design	4	64	Semester 2	Zhang Wei	C	
		S0701116	Advanced Modern Algebra	4	64	Semester 1	Sun Hao	C	
		S0701117	Foundations of Modern Analysis	4	64	Semester 1	Wang Youjun	C	
Elective Courses		S0701028	Variational Methods for Partial Differential Equations	4	64	Semester 2	Wang Youjun	E	
		S0701036	Ergodic Theory	4	64	Semester 3	Kuang Rui	E	
		S0701059	Harmonic Analysis	4	64	Semester 3	Wu Di	E	
		S0701077	Introduction to Nonlinear Dynamical Systems	4	64	Semester 3	Yang Qigui	E	
		S0701082	Differential Geometry	4	64	Semester 2	Zhang Wei	E	
		S0701093	Topological Dynamical Systems	4	64	Semester 2	Ma Dongkui	E	
		S0701094	Applied Bifurcation Theory	4	64	Semester 2	Liu Shenquan	E	
		S0701096	Introduction to Bifurcation and Chaos	4	64	Semester 2	Yang Qigui	E	
		S0701097	Neural Dynamics Computing	4	64	Semester 3	Liu Shenquan	E	
		S0701113	Introduction to Computational Systems Biology	4	64	Semester 3	Liu Rui	E	
		S0701118	Second Order Parabolic Partial Differential Equations	4	64	Semester 2	Lin Junyu	E	
		S0701119	Introduction to Shock Wave Theory	4	64	Semester 2	Zhu Changjiang	E	
		S0701122	Geometric Measure Theory	4	64	Semester 3	Li Bing	E	
		S0701124	Stochastic Analysis	4	64	Semester 2	Zeng Caibin	E	
		S0701132	Riemann-Hilbert Methods	4	64	Semester 2	Ling Liming	E	
		S0701133	Riemann Surfaces	4	64	Semester 1	Ling Liming	E	

		S0701134	Robust Optimization	3	48	Semester 1	Zhang Wei	E	
Public Elective		S0002018	Second Foreign Language (Japanese)	2	64	Semester 2	Jia Haiping	E	
		S0002019	Second Foreign Language (German)	2	64	Semester 2	Wang Yujing	E	
		S0002029	Practical English Writing	1	36	Semester 2	Yao Nan	E	
		S0002030	Business English	1	36	Semester 2	Zhao Shumei	E	
		S0002034	English for Academic Communication	1	36	Semester 2	Cang Lanju	E	
		S0002037	British and American Culture	1	36	Semester 2	Liu Xifen	E	
		S0002038	English Film Appreciation	1	36	Semester 2	Chen Tao	E	
		S0002040	IELTS Preparation	1	36	Semester 2	Tan Xiaobing	E	
		S0002041	TOEFL Preparation	1	36	Semester 2	Zhang Huiming	E	
		S0002042	News English	1	36	Semester 2	Xiao Yunhua	E	
		S0004013	Principles of Economics	2	32	Semester 2	Liu Xiaoyong	E	
		S0004015	Principles of Management	2	50	Semester 2	Huang Aihua	E	
		S0004060	English Films and Intercultural Communication	2	32	Semester 2	Xie Baoxia	E	
		S0004099	Psychology and Life	2	32	Semester 2	Zhu Maoling	E	
		S0004103	History and Culture in Artworks	2	32	Semester 2	Xie Baoxia	E	

2.Course Details for [Pure Mathematics] Academic Master's Program

Course Category	Multiple Choice	Course No.	Course Title	Credit s	Class Hours	Semester	Course leader	C/E	notes
Public compulso ry	2 choose 1	S0001025	Introduction to Dialectics of Nature	1	18	Semester 1	Tao Jianwen	C	
		S0001026	Marxism and Social Science Methodology	1	18	Semester 1	Wu Guolin	C	
		S0001089	Theory and Practice of Socialism with Chinese Characteristics for a New Era	2	36	Semester 1	Guo Houjia	C	

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
		S0002046	Comprehensive English	3	48	Semester 1	Cheng Jie	C	
		S0004081	Academic Writing and Norms	2	32	Semester 2	Wen Huanyao	C	
Specialty Basic Courses	7 choose 2	S0701040	Fractal Geometry Theory and Applications	4	64	Semester 2	Wu Wen	C	
		S0701053	Measure Theory	4	64	Semester 1	Xiong Ying	C	
		S0701071	Algebraic Geometry	4	64	Semester 2	Li Maosheng	C	
		S0701087	Finite Group Theory	4	64	Semester 2	Zhou Shenglin	C	
		S0701095	Second Order Elliptic Partial Differential Equations	4	64	Semester 2	Zhou Fujun	C	
		S0701103	Sobolev Spaces	4	64	Semester 1	Ji Shanming	C	
		S0701130	The Qualitative Methods and Numerical Simulation for Differential Equations	4	64	Semester 3	Liu Rui	C	
		S0701116	Advanced Modern Algebra	4	64	Semester 1	Sun Hao	C	
		S0701117	Foundations of Modern Analysis	4	64	Semester 1	Wang Youjun	C	
Elective Courses		S0701036	Ergodic Theory	4	64	Semester 3	Kuang Rui	E	
		S0701077	Introduction to Nonlinear Dynamical Systems	4	64	Semester 3	Yang Qigui	E	
		S0701082	Differential Geometry	4	64	Semester 2	Zhang Wei	E	
		S0701089	Permutation Groups and Combinatorial Structures	4	64	Semester 3	Zhou Shenglin	E	
		S0701093	Topological Dynamical Systems	4	64	Semester 2	Ma Dongkui	E	
		S0701096	Introduction to Bifurcation and Chaos	4	64	Semester 2	Yang Qigui	E	
		S0701102	Introduction to Linear Algebraic Groups	4	64	Semester 3	Zheng Zhujun	E	
		Course Code	Course Name	Credits	Total Hours	Semester	Instructor	E	
		S0701118	Second Order Parabolic Partial Differential Equations	4	64	Semester 2	Lin Junyu	E	

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
		S0701119	Introduction to Shock Wave Theory	4	64	Semester 2	Zhu Changjiang	E	
		S0701121	Introduction to Number Theory	4	64	Semester 2	Hu Susu	E	
		S0701122	Geometric Measure Theory	4	64	Semester 3	Li Bing	E	
		S0701125	Quantum Computing and Quantum Information	4	64	Semester 1	Lin Bingsheng	E	
Public Elective		S0701134	Robust Optimization	3	48	Semester 1	Zhang Wei	E	
		S0002018	Second Foreign Language (Japanese)	2	64	Semester 2	Jia Haiping	E	
		S0002019	Second Foreign Language (German)	2	64	Semester 2	Wang Yujing	E	
		S0002029	Practical English Writing	1	36	Semester 2	Yao Nan	E	
		S0002030	Business English	1	36	Semester 2	Zhao Shumei	E	
		S0002034	English for Academic Communication	1	36	Semester 2	Cang Lanju	E	
		S0002037	British and American Culture	1	36	Semester 2	Liu Xifen	E	
		S0002038	English Film Appreciation	1	36	Semester 2	Chen Tao	E	
		S0002040	IELTS Preparation	1	36	Semester 2	Tan Xiaobing	E	
		S0002041	TOEFL Preparation	1	36	Semester 2	Zhang Huiming	E	
		S0002042	News English	1	36	Semester 2	Xiao Yunhua	E	
		S0004013	Principles of Economics	2	32	Semester 2	Liu Xiaoyong	E	
		S0004015	Principles of Management	2	50	Semester 2	Huang Aihua	E	
		S0004060	English Films and Intercultural Communication	2	32	Semester 2	Xie Baoxia	E	
		S0004099	Psychology and Life	2	32	Semester 2	Zhu Maoling	E	
		S0004103	History and Culture in Artworks	2	32	Semester 2	Xie Baoxia	E	

3. Course Details for [Computational Mathematics] Academic Master's Program

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
Public compulsory	2 choose 1	S0001025	Introduction to Dialectics of Nature	1	18	Semester 1	Tao Jianwen	C	
		S0001026	Marxism and Social Science Methodology	1	18	Semester 1	Wu Guolin	C	
		S0001089	Theory and Practice of Socialism with Chinese Characteristics for a New Era	2	36	Semester 1	Guo Houjia	C	
		S0002046	Comprehensive English	3	48	Semester 1	Cheng Jie	C	
		S0004081	Academic Writing and Norms	2	32	Semester 2	Wen Huanyao	C	
Specialty Basic Courses	7 choose 2	S0701021	Principles of Optimization	4	64	Semester 1	Ben Benshujun	C	
		S0701130	The Qualitative Methods and Numerical Simulation for Differential Equations	4	64	Semester 3	Liu Rui	C	
		S0701137	Computational Complexity and Algorithm Design	4	64	Semester 2	Zhang Wei	C	
		S0701116	Advanced Modern Algebra	4	64	Semester 1	Sun Hao	C	
		S0701117	Foundations of Modern Analysis	4	64	Semester 1	Wang Youjun	C	
Elective Courses		S0003006	Fuzzy Mathematics	3	54	Semester 2	Ling Weixin	E	
		S0003007	Matrix Analysis	2	54	Semester 1	Zhang Wei	E	
		S0701007	Stochastic Process Theory	4	64	Semester 2	Liu Huiling	E	
		S0701024	Advanced Statistics	4	64	Semester 3	He Zhijian	E	
		S0701082	Differential Geometry	4	64	Semester 2	Zhang Wei	E	
		S0701094	Applied Bifurcation Theory	4	64	Semester 2	Liu Shenquan	E	
		S0701097	Neural Dynamics Computing	4	64	Semester 3	Liu Shenquan	E	
		S0701113	Introduction to Computational Systems Biology	4	64	Semester 3	Liu Rui	E	

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
		S0701134	Robust Optimization	3	48	Semester 1	Zhang Wei	E	
		S0701136	Semi-classical Semiconductor Devices and Computational Methods	3	54	Semester 3	Yao Wenqi	E	
		S0714008	Data Mining and Statistical Decision Making	3	48	Semester 2	Liu Xiaolan	E	
Public Elective		S0002018	Second Foreign Language (Japanese)	2	64	Semester 2	Jia Haiping	E	
		S0002019	Second Foreign Language (German)	2	64	Semester 2	Wang Yujing	E	
		S0002029	Practical English Writing	1	36	Semester 2	Yao Nan	E	
		S0002030	Business English	1	36	Semester 2	Zhao Shumei	E	
		S0002034	English for Academic Communication	1	36	Semester 2	Cang Lanju	E	
		S0002037	British and American Culture	1	36	Semester 2	Liu Xifen	E	
		S0002038	English Film Appreciation	1	36	Semester 2	Chen Tao	E	
		S0002040	IELTS Preparation	1	36	Semester 2	Tan Xiaobing	E	
		S0002041	TOEFL Preparation	1	36	Semester 2	Zhang Huiming	E	
		S0002042	News English	1	36	Semester 2	Xiao Yunhua	E	
		S0004013	Principles of Economics	2	32	Semester 2	Liu Xiaoyong	E	
		S0004015	Principles of Management	2	50	Semester 2	Huang Aihua	E	
		S0004060	English Films and Intercultural Communication	2	32	Semester 2	Xie Baoxia	E	
		S0004099	Psychology and Life	2	32	Semester 2	Zhu Maoling	E	
		S0004103	History and Culture in Artworks	2	32	Semester 2	Xie Baoxia	E	

4. Course Details for [Probability Theory and Mathematical Statistics] Academic Master's Program

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
Public compulsory	2 choose 1	S0001025	Introduction to Dialectics of Nature	1	18	Semester 1	Tao Jianwen	C	
		S0001026	Marxism and Social Science Methodology	1	18	Semester 1	Wu Guolin	C	
		S0001089	Theory and Practice of Socialism with Chinese Characteristics for a New Era	2	36	Semester 1	Guo Houjia	C	
		S0002046	Comprehensive English	3	48	Semester 1	Cheng Jie	C	
		S0004081	Academic Writing and Norms	2	32	Semester 2	Wen Huanyao	C	
Specialty Basic	5 choose 2	S0701007	Stochastic Process Theory	4	64	Semester 2	Liu Huiling	C	
		S0701024	Advanced Statistics	4	64	Semester 3	He Zhijian	C	
		S0701040	Fractal Geometry Theory and Applications	4	64	Semester 2	Wu Wen	C	
		S0701053	Measure Theory	4	64	Semester 1	Xiong Ying	C	
		S0701130	The Qualitative Methods and Numerical Simulation for Differential Equations	4	64	Semester 3	Liu Rui	C	
		S0701116	Advanced Modern Algebra	4	64	Semester 1	Sun Hao	C	
		S0701117	Foundations of Modern Analysis	4	64	Semester 1	Wang Youjun	C	
Elective Courses		S0701036	Ergodic Theory	4	64	Semester 3	Kuang Rui	E	
		S0701077	Introduction to Nonlinear Dynamical Systems	4	64	Semester 3	Yang Qigui	E	
		S0701093	Topological Dynamical Systems	4	64	Semester 2	Ma Dongkui	E	
		S0701096	Introduction to	4	64	Semester 2	Yang Qigui	E	

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
			Bifurcation and Chaos						
		S0701122	Geometric Measure Theory	4	64	Semester 3	Li Bing	E	
		S0701123	Multi-objective Decision Making: Theory, Methods and Applications	3	48	Semester 3	Deng Xue	E	
		S0701124	Stochastic Analysis	4	64	Semester 2	Zeng Caibin	E	
		S0701131	Portfolio and Risk Analysis	4	64	Semester 3	Deng Xue	E	
		S0701134	Robust Optimization	3	48	Semester 1	Zhang Wei	E	
		S0701138	Introduction to Statistical Learning and Data Science	3	48	Semester 2	Xia Li	E	
		S0714008	Data Mining and Statistical Decision Making	3	48	Semester 2	Liu Xiaolan	E	
Public Elective		S0002018	Second Foreign Language (Japanese)	2	64	Semester 2	Jia Haiping	E	
		S0002019	Second Foreign Language (German)	2	64	Semester 2	Wang Yujing	E	
		S0002029	Practical English Writing	1	36	Semester 2	Yao Nan	E	
		S0002030	Business English	1	36	Semester 2	Zhao Shumei	E	
		S0002034	English for Academic Communication	1	36	Semester 2	Cang Lanju	E	
		S0002037	British and American Culture	1	36	Semester 2	Liu Xifen	E	
		S0002038	English Film Appreciation	1	36	Semester 2	Chen Tao	E	
		S0002040	IELTS Preparation	1	36	Semester 2	Tan Xiaobing	E	
		S0002041	TOEFL Preparation	1	36	Semester 2	Zhang Huiming	E	
		S0002042	News English	1	36	Semester 2	Xiao Yunhua	E	

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
		S0004013	Principles of Economics	2	32	Semester 2	Liu Xiaoyong	E	
		S0004015	Principles of Management	2	50	Semester 2	Huang Aihua	E	
		S0004060	English Films and Intercultural Communication	2	32	Semester 2	Xie Baoxia	E	
		S0004099	Psychology and Life	2	32	Semester 2	Zhu Maoling	E	
		S0004103	History and Culture in Artworks	2	32	Semester 2	Xie Baoxia	E	

5. Course Details for [Operations Research and Control Theory] Academic Master's Program

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
Public compulsory	2 choose 1	S0001025	Introduction to Dialectics of Nature	1	18	Semester 1	Tao Jianwen	C	
		S0001026	Marxism and Social Science Methodology	1	18	Semester 1	Wu Guolin	C	
		S0001089	Theory and Practice of Socialism with Chinese Characteristics for a New Era	2	36	Semester 1	Guo Houjia	C	
		S0002046	Comprehensive English	3	48	Semester 1	Cheng Jie	C	
		S0004081	Academic Writing and Norms	2	32	Semester 2	Wen Huanyao	C	
Specialty Basic Courses	3 choose 2	S0701021	Principles of Optimization	4	64	Semester 1	Ben Benshujun	C	
		S0701024	Advanced Statistics	4	64	Semester 3	He Zhijian	C	
		S0701053	Measure Theory	4	64	Semester 1	Xiong Ying	C	
		S0701116	Advanced Modern Algebra	4	64	Semester 1	Sun Hao	C	
		S0701117	Foundations of Modern Analysis	4	64	Semester 1	Wang Youjun	C	
Elective Courses		S0701007	Stochastic Process Theory	4	64	Semester 2	Liu Huiling	E	
		S0701082	Differential Geometry	4	64	Semester 2	Zhang Wei	E	
		S0701115	Stochastic Optimal Control	4	64	Semester 2	Gao Wenhua	E	

Course Category	Multiple Choice	Course No.	Course Title	Credits	Class Hours	Semester	Course leader	C/E	notes
		S0701124	Stochastic Analysis	4	64	Semester 2	Zeng Caibin	E	
		S0701134	Robust Optimization	3	48	Semester 1	Zhang Wei	E	
		S0701135	Variational Analysis	4	64	Semester 2	Pan Shaohua	E	
Public Elective		S0002018	Second Foreign Language (Japanese)	2	64	Semester 2	Jia Haiping	E	
		S0002019	Second Foreign Language (German)	2	64	Semester 2	Wang Yujing	E	
		S0002029	Practical English Writing	1	36	Semester 2	Yao Nan	E	
		S0002030	Business English	1	36	Semester 2	Zhao Shumei	E	
		S0002034	English for Academic Communication	1	36	Semester 2	Cang Lanju	E	
		S0002037	British and American Culture	1	36	Semester 2	Liu Xifen	E	
		S0002038	English Film Appreciation	1	36	Semester 2	Chen Tao	E	
		S0002040	IELTS Preparation	1	36	Semester 2	Tan Xiaobing	E	
		S0002041	TOEFL Preparation	1	36	Semester 2	Zhang Huiming	E	
		S0002042	News English	1	36	Semester 2	Xiao Yunhua	E	
		S0004013	Principles of Economics	2	32	Semester 2	Liu Xiaoyong	E	
		S0004015	Principles of Management	2	50	Semester 2	Huang Aihua	E	
		S0004060	English Films and Intercultural Communication	2	32	Semester 2	Xie Baoxia	E	
		S0004099	Psychology and Life	2	32	Semester 2	Zhu Maoling	E	
		S0004103	History and Culture in Artworks	2	32	Semester 2	Xie Baoxia	E	