

兰州大学信息科学与工程学院

程 1958 创办的 电
。1980 成 电 ，1986 成 电
。2000 电
、 并成 大
程 。

89 ， 15 ， 副 44
， 得 ， “百 才 程”
， 部 () 才 ， 甘 高层
次 才，

戴备点、甘电点、甘
 础 范。程 的大
 标,秉承“博、高”的,
 持“定,方,发,”的导
 ,发,部,“
 带”地“+”的,打
 的,出点,大产、产
 等的服,把成部地
 的才地创地。

| | | | | |
|----------|---------|--------|---|--|
| | | | | |
| 电 | 080714T | 430101 | 4 | |
| 程 | 080703 | 430102 | 4 | |
| | 080717T | 430205 | 4 | |
| | 080901 | 430201 | 4 | |
| 安 | 080904K | 430402 | 4 | |
| 大 | 080910T | 430204 | 4 | |
| 长 (方) | 080910H | 430203 | 4 | |

长

0931-8912405

兰州大学信息科学与工程学院 信息安全专业人才培养方案

大 1981 的本
, 1986 成 , 2000 、
电 并成 大
程 。 2004 , 程 采 2+2 方
安 方 本 , 2007 , 程
采 (安 方) 方
安 方 本 的 , 2014
程 采 安 方 安 方 本 的
。
范 地、
部 程 、 LINUX 、
甘 穿戴 备 点 、 甘 电 点
、 甘 础 范 、 甘
才 地、 IBM 部等。 安
础 6 个
7 个, 安 1 个。
本 础, 的 部
“ 个 百 ” 奋 斗 标 步 动 , 持 “ 本
本”, 不 断 本 创 、 创 、 度 创
创 发 , 安 测 程 ,
防、 分 分 复 程 等

程，创创，促
，成，
安高才，“办
本，本才”的。

本发、
安大“”，彻党的
方，的程、创创、
，的础、的
+、的防分、的

、
发的创才，干部
、高等、单、部
从安、的、发、

本毕达到标：

标 1：的础、程础、
础、防分础，地分
、安等的复程；

标 2：备程，、发，
并方案、定、程、
持发等，策创；

标 3：，奉、吃
服的；道德，的底
；

+ 标 4：的，

队分、；

标5: 不断调的，
步、发发。

才标标，本毕的
本：

1. 程：、程础
、安等复程
。

1.1 、程础
对、安等复程的表。

1.2 对、安等的对
并。

1.3 、程础
、分、安等的复程
，对方案比改。

2. 分：、
段，对、安等复程
别、分表达，得。

2.1 对、安等的复程
抽分，别参。

2.2 方法对、
安等的复程表达。

2.3 ，对
方案，分比不的方案得。

3. / 发方案：法法范畴，

、安、等复程的方案，并
创。等
程的本方，
方的。



3.2 成、安等
定的单。

3.3 成、安等的
创。

3.4 法法范畴，、安、
等，分方案的。

4. 本的方法，
安等的
方法复程
步抽

感，崇 动， 程 道德 范，

+ 8.1 的 ，

8.2 ， 个 步 发 的辩 ，
服 的 。

8.3 诚 ， 程 道德 范；崇 动，
诚 动、创 动的 。

9. 个 队： 定的 队
， 多 背 的 队 承担个 、 队成 负
的 ， 成 承担的 。

9.1 多 背 的 队成 、 ，
成承担的 。

9.2 、 调 队 。

10. : 、 安 等 复 程
， 包 报告
稿、陈 发 、 表达 ， 并 备 定
的 ， 背 的 。

10.1 的 表达，包
、 、 、 辩 等，
的差 。

10.2 的 发 、 点，
背 的 。

11. : 并 本的 程
方法， 程 动 的 ， 并
多 。

11.1 并 本 的 程 方法，
程 。

11.2: 程 动 、 安 等
发 程 的 ， 并 多
。

12. : 的 ， 不断
发 的 。

12.1 的 ， 成 的 。

12.2 备 的 ， 读 ， 出 ，
。

本 12 毕 格毕 的
。 程 的 动 撑 毕 分
的二 标点， 从而 达到毕 ， 5
的 ， 步达到 标的 。

(一) 学制

(二) 学分

158 分

(三) 学位

本 程 大 成， 分 不
158, :
A : 必 程， 包 、 、
、 、 、 、 第二

等 , 必不 48 分。
B :

表一：课程体系结构与学时学分分配 表

| | | | | | | |
|--|---|-----|----------|------|----|-------|
| | | | | | | |
| | A | | | | 17 | 306 |
| | | | 1 | | 2 | 36 |
| | | | | | 12 | 216 |
| | | | | | 8 | 252 |
| | | | 2020 103 | | / | 36 |
| | | | 104 | 2020 | / | 36 |
| | | | | | 2 | 36 |
| | | | | | 2 | 36 |
| | | | 5 | | 5 | 90 |
| | | | | 0 | 36 | |
| | | 1-3 | 2 | | 0 | 18 |
| | | | | | 48 | 30.4% |

| | | | | | | | |
|---|---|----------|---|---|--------|------|-----|
| | | | | | | | |
| | | | | | | 0 | 18 |
| | | | | | 1 | 0 | 36 |
| B | | 4 | 3 | 2 | 8 | 8 | 144 |
| | | | | | 6 | 6 | 108 |
| | | C1 | | | | 43 | 900 |
| | | C2 | | | | 25 | 594 |
| | | C3 | | | | 4 | 144 |
| | D | | | | | 33 | 558 |
| | | | | | | 23.5 | 450 |
| | | Java C++ | | | Python | 21 | 684 |

Web

表二：公共课学时学分分配表

| | | | | | | |
|--|---|--------------------------|--|---|----|-----|
| | | | | | | |
| | 1309194 | | Value Morality and Rule of Law | 3 | 3 | 1 |
| | 1309061 | | Outline of Chinese Modern and Contemporary History | 3 | 3 | 2 |
| | 1309195 | | Basic Principles of Marxism | 3 | 3 | 3 |
| | 1309192 | | Introduction to Mao Zedong Thoughts and Theoretical System of Chinese Socialism | 3 | 3 | 4 |
| | 1309193 | | The Thought on Socialism with Chinese Characteristics for a New Era | 3 | 3 | 5 |
| | 1309064 1309065 1309066 1309067 1039198 | | Current Situations and Policies | / | 2 | 1-5 |
| | 1309110 | | The History of the Communist Party of China | 3 | 2 | |
| | 1309111 | | The History of the People's Republic of China | | | |
| | 1309112 | | The History of Reform and Opening up | | | |
| | 1309113 | | The History of Socialism | | | |
| | / | | College Foreign Languages | 3 | 12 | 1-4 |
| | 5051001 5051002 5051003 5051004 | 1/4 2/4 3/4 4/4 | Physical Education (1/4) Physical Education (2/4) Physical Education (3/4) Physical Education (4/4) | 2 | 4 | 1-4 |
| | 5605001 5605002 | | Military Theory Military Skills | / | 4 | 1-2 |
| | 1087203 | | Mental Health of College Students | 2 | 2 | 1-2 |
| | 101404001 1 101404001 | | Career Planning | | 2 | 1-6 |

| | | | | | |
|--|---------------------|--|---|---|-----|
| | | | | | |
| | 2 101404001 3 | | | | |
| | 701404001 | | Reading, Writing, and Communication | 0 | 1-7 |
| | 101404002 | | Frontier and Interdisciplinary Lectures | 0 | 1-6 |
| | 406107010 | | National Security Education | 0 | 1-6 |
| | 406107009 | | Summer School | 0 | 1-6 |

表三：第二课堂学时学分分配表

| | | | | | | |
|--|-----------|--|------------------------------------|---|---|-----|
| | | | | | | |
| | 406107001 | | Social Practice | 2 | 2 | 5 |
| | 406107002 | | Productive and Physical Labor | 2 | 2 | 1-8 |
| | 406107003 | | Ideological and Moral Cultivation | 1 | 1 | |
| | 406107004 | | Innovation and Entrepreneurship | 1 | 1 | |
| | 406107005 | | Volunteering and Public Service | 1 | 1 | |
| | 406107006 | | Recreational and Sports Activities | 0 | 0 | |
| | 406107007 | | Work Experience | 0 | 0 | |
| | 406107008 | | Skills and Specialties | 0 | 0 | |

表四：通识教育类、跨学科类课程学时学分分配表

| | | | | | | |
|--|--|--|--|--|---|--|
| | | | | | | |
| | | | | | 8 | |
| | | | | | | |
| | | | | | | |
| | | | | | 6 | |
| | | | | | | |

表五：专业必修课程学时学分分配表

| | | | | | | |
|----|-------------|--|---|-----|---|--|
| | | | | | | |
| C1 | 1401202B 1 | Advanced Mathematics () | 4 | 4 | 1 | |
| | 1401202B 2 | Advanced Mathematics () | 4 | 4 | 2 | |
| | 1402001B 1 | Physics () | 3 | 3 | 1 | |
| | 1402001B 2 | Physics () | 3 | 3 | 2 | |
| | 1401221B | Linear Algebra | 3 | 3 | 3 | |
| | 1401222 | Probability Theory and Mathematical Statistics | 3 | 3 | 4 | |
| | 104404001 | Introduction to Information Science | 2 | 1 | 1 | |
| | 304404001 | Programming Fundamentals | 5 | 2.5 | 1 | |
| | 2043155 | Discrete Mathematics | 4 | 4 | 2 | |
| | 304404002 | Electronic Circuit Foundation | 4 | 3 | 2 | |
| | 304404003 | Data Structure | 7 | 5.5 | 3 | |
| | 305404002 | Digital Logic | 4 | 3 | 3 | |
| | 2043259 | Introduction to Cyber Security | 2 | 2 | 3 | |
| | 2043046 | Mathematic Foundations of Information Security | 2 | 2 | 4 | |
| C2 | 305404007 | Computer Networks | 5 | 4 | 3 | |
| | 105404008 1 | Penetration Testing () | 2 | 1 | 3 | |
| | 105404007 | Cryptography | 3 | 2 | 4 | |
| | 205404001 | Foundation Experiment of Network Security | 2 | 1 | 4 | |
| | 305404006 | Principles of Computer Organization | 7 | 5.5 | 4 | |

| | | | | | | |
|----|-------------|--|---|---|-----|---|
| | | | | | | |
| | 2043054 | | Database Systems and Security | 2 | 2 | 5 |
| | 2043051 | | Operating System and Security | 3 | 3 | 5 |
| | 105404008 2 | | Penetration Testing () | 2 | 1 | 5 |
| | 107404025 | | Privacy Computing | 2 | 2 | 6 |
| | 2043317 | | Network Security Evaluation | 2 | 2 | 6 |
| | 4043075 | | Comprehensive Experiment of Network Security | 3 | 1.5 | 6 |
| C3 | 206404005 | | Comprehensive training in programming ability | - | 2 | |
| | 206404006 | | Comprehensive training in computer system ability | - | 2 | 7 |

表六：专业选修课程学时学分分配表

| | | | | | | |
|-----------|-----------|---------------------|--|---|---|---|
| | | | | | | |
| D1 | 2043023 | | Algorithms: Design and Analysis | 3 | 3 | 4 |
| | 107404018 | | Formal Language and Formal Methods | 2 | 2 | 4 |
| | 107404019 | | Computer Applied Mathematics | 2 | 2 | 5 |
| | 2043321 | | Computer Architecture | 2 | 2 | 5 |
| | 2043016 | | Software Engineering | 4 | 3 | 6 |
| | 2043075 | | Software Security | 2 | 2 | 6 |
| | 107404030 | | IoT Security | 2 | 2 | 6 |
| | 2043081 | | Intelligent Terminal Security | 2 | 2 | 6 |
| | 107404031 | | DigitalData Forensics | 2 | 2 | 6 |
| | 107404032 | | Data Security | 2 | 2 | 6 |
| | 107404033 | | IndustryControl Security | 2 | 2 | 7 |
| | 2043167 | | Security of Wireless Communication Network | 2 | 2 | 7 |
| | 107404034 | | Information Security Engineering | 2 | 2 | 7 |
| | 107404049 | | Social Cyber-Security | 2 | 2 | 7 |
| | 607404001 | | Improvement of Computer System Ability | 2 | 2 | 7 |
| 607404001 | * | Innovative Practice | - | 1 | - | |
| D2 | 2043253 | | Principles of Modern Communications | 2 | 2 | 5 |
| | 2043106 | | Introduction to Artificial Intelligence | 2 | 2 | 5 |
| | 2043292 | | Introduction to Data Science | 2 | 2 | 5 |
| | 107404022 | | Affective Computing | 2 | 2 | 5 |

表七：荣誉学士学位课程学时学分分配表

| | 109404001 | | Advanced Computer Architecture | 3 | 3 | |
|--|-----------|--|---------------------------------------|---|---|--|
| | 109404002 | | Modern Algebra | 3 | 3 | |
| | 109404003 | | Modern Optimization Algorithm | 3 | 3 | |
| | 109404004 | | Advanced Artificial Intelligence | 3 | 3 | |
| | 109404005 | | Network Theory and Technology | 3 | 3 | |
| | 109404006 | | Data Warehouse and Data Mining | 3 | 3 | |
| | 109404007 | | Object-oriented method and technology | 3 | 3 | |

：达到 的 ， ， 定 ， 得 颁发的 。

- (1) 处分。
- (2) 1-7 点 本 的 10%。
- (3) 1-7 成表 程 。
- (4) 毕 等 。

表八：教学计划一览表

| | | 1309194 | | Value Morality and Rule of Law | 3 | 3 | 54 | 0 | 54 | 0 | 0 | 54 | | | | | | |
|--|--|---|--|---|---|---|----|---|----|---|---|-----|-----|-----|-----|-----|--|--|
| | | 1309061 | | Outline of Chinese Modern and Contemporary History | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | 54 | | | | | |
| | | 1309195 | | Basic Principles of Marxism | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | 54 | | | | |
| | | 1309192 | | Introduction to Mao Zedong Thoughts and Theoretical System of Chinese Socialism | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | 54 | | | |
| | | 1309193 | | The Thought on Socialism with Chinese Characteristics for a New Era | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | | 54 | | |
| | | 1309064 1309065 1309066 1309067 1039198 | | Current Situations and Policies | 2 | | 36 | 0 | 36 | 0 | 0 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------|-----|---|----|----|-----|----|-----|---|-----|--------|----|----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1309110 | | The History of the Communist Party of China | 2 | 3 | 36 | 18 | 18 | 0 | 0 | | | | | | | | | | | | | | | | | | | |
| | | 1309111 | | The History of the People's Republic of China | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1309112 | | The History of Reform and Opening up | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1309113 | | The History of Socialism | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | / | | College Foreign Languages | 12 | 12 | 216 | 0 | 216 | 0 | 0 | 54 | 54 | 54 | 54 | | | | | | | | | | | | | | | |
| | | 5051001 | 1/4 | Physical Education(1/4) | 4 | 8 | 144 | 0 | 144 | 0 | 0 | 36 | 36 | 36 | 36 | | | | | | | | | | | | | | | |
| | | 5051002 | 2/4 | Physical Education(2/4) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 5051003 | 3/4 | Physical Education(3/4) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 5051004 | 4/4 | Physical Education(4/4) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 5605001 | | Military Theory | 4 | | 148 | 18 | 18 | 0 | 112 | 36+112 | | | | | | | | | | | | | | | | | | |
| | | 5605002 | | Military Skills | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1087203 | | Mental Health of College Students | 2 | 2 | 36 | 30 | 6 | 0 | 0 | 36 | | | | | | | | | | | | | | | | | | |
| | | 101404001 | | Career Planning | 2 | | 54 | | 18 | | 36 | | | | | | | | | | | | | | | | | | | |

| | | 1 101404001 | | | | | | | | | | | | | | | | | |
|--|--|----------------|-------------------------------------|---|---|----|---|----|---|----|----|--|--|--|----|--|--|--|--|
| | | 2 101404001 | | | | | | | | | | | | | | | | | |
| | | 3 | | | | | | | | | | | | | | | | | |
| | | 406107001 | Social Practice | 2 | 2 | 72 | 0 | 36 | 0 | 36 | | | | | 36 | | | | |
| | | 406107002 | Productive and Physical Labor | 2 | 2 | 72 | | | | 36 | 36 | | | | | | | | |
| | | 406107003 | Ideological and Moral Cultivation | 1 | 1 | 36 | | | | | | | | | | | | | |
| | | 406107004 | Innovation and Entrepreneurship | 1 | 1 | 36 | | | | | | | | | | | | | |
| | | 406107005 | Volunteering and Public Service | 1 | 1 | 36 | | | | | | | | | | | | | |
| | | 406107006 | Recreational and Sports Activities | 0 | 0 | | | | | | | | | | | | | | |
| | | 406107007 | Work Experience | 0 | 0 | | | | | | | | | | | | | | |
| | | 406107008 | Skills and Specialties | 0 | 0 | | | | | | | | | | | | | | |
| | | 701404001 | Reading, Writing, and Communication | 0 | | | | | | | | | | | | | | | |
| | | 101404002 | Frontier and | 0 | | | | | | | | | | | | | | | |

| | | | | | Interdisciplinary Lectures | | | | | | | | | | | | | | 2 |
|--|--|--|-----------|--|-----------------------------|---|---|-----|--|--|--|--|--|--|--|--|--|--|---|
| | | | 406107010 | | National Security Education | 0 | 0 | | | | | | | | | | | | |
| | | | 406107009 | | Summer School | 0 | 0 | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | 8 | | 144 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | 6 | | 108 | | | | | | | | | | | |

| | | | 2043259 | Introduction to Cyber Security | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | 36 | | | | | |
|--|--|--|----------------|--|-----|---|-----|---|----|---|----|--|--|-----|----|----|----|--|--|
| | | | 2043046 | Mathematic Foundations of Information Security | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | 36 | | | | |
| | | | 305404007 | Computer Networks | 4 | 5 | 90 | 0 | 54 | 0 | 36 | | | 90 | | | | | |
| | | | 105404008 1 | Penetration Testing () | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | 36 | | | | | |
| | | | 105404007 | Cryptography | 3 | 2 | 54 | 0 | 18 | 0 | 36 | | | | 54 | | | | |
| | | | 205404001 | Foundation Experiment of Network Security | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | 54 | | | | |
| | | | 305404006 | Principles of Computer Organization | 5.5 | 7 | 126 | 0 | 72 | 0 | 54 | | | 126 | | | | | |
| | | | 2043054 | Database Systems and Security | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | 36 | | | |
| | | | 2043051 | Operating System and Security | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | 54 | | | | |
| | | | 105404008 2 | Penetration Testing () | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | 36 | | | | |
| | | | 107404025 | Privacy Computing | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | 36 | | |
| | | | 2043317 | Network Security Evaluation | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | 36 | | |

| | | | | | | | | | | | |
|--|-----------|---|-----|----|----|---|----|---|----|--|----|
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | 4043075 | Comprehensive Experiment of Network Security | 1.5 | 3 | 54 | 0 | 0 | 0 | 54 | | 54 |
| | 206404005 | Comprehensive training in programming ability | 2 | 36 | 72 | 0 | 0 | 0 | 72 | | 2 |
| | 206404006 | Comprehensive training in computer system ability | 2 | 36 | 72 | 0 | 0 | 0 | 72 | | 72 |
| | 2043023 | Algorithms: Design and Analysis | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | 54 |
| | 107404018 | Formal Language and Formal Methods | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | 36 |
| | 107404019 | Computer Applied Mathematics | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | 36 |
| | 2043321 | Computer Architecture | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | 36 |
| | 305404010 | Software Engineering | 3 | 4 | 72 | 0 | 36 | 0 | 36 | | 72 |
| | 2043075 | Software Security | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | 36 |
| | 107404030 | IoT Security | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | 36 |
| | 2043081 | Intelligent Terminal Security | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | 36 |
| | 107404031 | DigitalData Forensics | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | 36 |
| | 107404032 | Data Security | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | 36 |

| | | 107404033 | | IndustryControl Security | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
|--|--|-----------|---|--|-----|---|----|---|----|---|----|--|--|--|--|--|--|----|
| | | 2043167 | | Security of Wireless Communication Network | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
| | | 107404034 | | Information Security Engineering | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
| | | 107404049 | | Social Cyber-Security | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
| | | 607404001 | | Improvement of Computer System Ability | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
| | | 607404001 | * | Innovative Practice | 1 | | | | | | | | | | | | | |
| | | 2043253 | | Principles of Modern Communications | 2 | 2 | 36 | 0 | 36 | 0 | | | | | | | | 36 |
| | | 2043106 | | Introduction to Artificial Intelligence | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
| | | 2043292 | | Introduction to Data Science | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
| | | 107404022 | | Affective Computing | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
| | | 2043327 | | Foundations of Cognitive Science | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
| | | 2043299 | | Machine Learning | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | | 36 |
| | | 305404009 | | Compiler Principles | 3.5 | 5 | 90 | 0 | 36 | 0 | 54 | | | | | | | 90 |

| | | | 2043079 | | Introduction to Electronic Commerce | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | 36 | | |
|--|--|--|------------------------|----------|---|-----|---|----|---|----|---|----|--|--|----|----|----|----|-----------|
| | | | 107404023 | | Distributed Systems and Data Management | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | 36 | | |
| | | | 107404026 | | Intelligent Retrieval | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | 36 | | |
| | | | 107404027 | | Block Chain Principle and Technology | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | | 36 | |
| | | | 305404003 305404004 | Java C++ | Object-Oriented Programming (C++/Java) | 2.5 | 5 | 90 | 0 | 0 | 0 | 90 | | | 90 | | | | C++/ Java |
| | | | 2043010 | | Assembly Language | 1.5 | 3 | 54 | 0 | 0 | 0 | 54 | | | | 54 | | | |
| | | | 2043291 | Python | Programming in Python | 1.5 | 3 | 54 | 0 | 0 | 0 | 54 | | | | 54 | | | |
| | | | 205404003 | * | Experiment of Operating System and Security | 1.5 | 3 | 54 | 0 | 0 | 0 | 54 | | | | 54 | | | |
| | | | 205404004 | * | Experiment of Database Systems and Security | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | 36 | | | |
| | | | 2043308 | * | Front-End Interaction Design | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | 36 | | | |

| | | | 2043178 | * | Super Computing Technology | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | | 36 | | |
|--|--|--|-----------|-------|---|---|---|----|---|----|---|----|--|--|--|--|----|----|----|
| | | | 2043183 | Web * | Databases on Web | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | | 36 | | |
| | | | 107404005 | * | Big Data Analysis and In-Memory Computing | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | | 36 | | |
| | | | 107404006 | * | Recommender System | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | | 36 | | |
| | | | 2043298 | * | Engineering Cartography | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | | 36 | | |
| | | | 2043323 | | Interfaces and Communication | 2 | 2 | 36 | 0 | 36 | 0 | 0 | | | | | 36 | | |
| | | | 2043258 | | Cloud Computing and Big Data Processing | 3 | 4 | 72 | 0 | 36 | 0 | 36 | | | | | 72 | | |
| | | | 107404028 | * | Social Media Data Analysis | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | | 36 | | |
| | | | 107404029 | * | Robot Development Practice | 1 | 2 | 36 | 0 | 0 | 0 | 36 | | | | | | 36 | |
| | | | 2043306 | | Graduation Design (Thesis) | 8 | | | | | | | | | | | | | 14 |

| | | 109404001 | Advanced Computer Architecture | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | | | | | | |
|--|--|-----------|---------------------------------------|-----|---|----|---|----|---|---|--|--|--|--|--|--|--|--|--|
| | | 109404002 | Modern Algebra | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | | | | | | |
| | | 109404003 | Modern Optimization Algorithm | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | | | | | | |
| | | 109404004 | Advanced Artificial Intelligence | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | | | | | | |
| | | 109404005 | Network Theory and Technology | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | | | | | | |
| | | 109404006 | Data Warehouse and Data Mining | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | | | | | | |
| | | 109404007 | Object-oriented method and technology | 3 | 3 | 54 | 0 | 54 | 0 | 0 | | | | | | | | | |
| | | | | 158 | | | | | | | | | | | | | | | |

表九：毕业要求对培养目标的支撑关系矩阵

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| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |

表十：课程体系中各个必修教学环节对毕业要求的支撑关系矩阵

(表 “H () \M (调) \L (覆盖)” 表 程对毕 的 撑 度)

| | 1 | | | 2. | | | 3. / | | | | 4. | | | 5. | | | | 6. | | 7. | | 8. | | | 9. | | 10. | | 11. | | 12. | | | | |
|--|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|--|--|--|
| | 1.1 | 1.2 | 1.3 | 2.1 | 2.2 | 2.3 | 3.1 | 3.2 | 3.3 | 3.4 | 4.1 | 4.2 | 4.3 | 5.1 | 5.2 | 5.3 | 5.4 | 6.1 | 6.2 | 7.1 | 7.2 | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 10.1 | 10.2 | 11.1 | 11.2 | 12.1 | 12.2 | | | |
| | | | | | | | | | | | | | | | | | | | | | | H | | | | | | | | | | | | | |
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| | | 1 | | | 2. | | | 3. / | | | | 4. | | | 5. | | | | 6. | | 7. | | 8. | | | 9. | | 10. | | 11. | | 12. | | | | |
|--|--|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|---|---|--|
| | | 1.1 | 1.2 | 1.3 | 2.1 | 2.2 | 2.3 | 3.1 | 3.2 | 3.3 | 3.4 | 4.1 | 4.2 | 4.3 | 5.1 | 5.2 | 5.3 | 5.4 | 6.1 | 6.2 | 7.1 | 7.2 | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 10.1 | 10.2 | 11.1 | 11.2 | 12.1 | 12.2 | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | L | | L | | | | | L | | | L | | | | | | | L | |
| | | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | 1 | | | 2. | | | 3. / | | | | 4. | | | 5. | | | | 6. | | 7. | | 8. | | | 9. | | 10. | | 11. | | 12. | | |
|--|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|--|
| | 1.1 | 1.2 | 1.3 | 2.1 | 2.2 | 2.3 | 3.1 | 3.2 | 3.3 | 3.4 | 4.1 | 4.2 | 4.3 | 5.1 | 5.2 | 5.3 | 5.4 | 6.1 | 6.2 | 7.1 | 7.2 | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 10.1 | 10.2 | 11.1 | 11.2 | 12.1 | 12.2 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Н | | | | | | | | | | | | | | | | | Н | | | Н | | | | | | | | | | Н | | |
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| | | 1 | | | 2. | | | 3. / | | | | 4. | | | 5. | | | | 6. | | 7. | | 8. | | | 9. | | 10. | | 11. | | 12. | | |
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| | | 1.1 | 1.2 | 1.3 | 2.1 | 2.2 | 2.3 | 3.1 | 3.2 | 3.3 | 3.4 | 4.1 | 4.2 | 4.3 | 5.1 | 5.2 | 5.3 | 5.4 | 6.1 | 6.2 | 7.1 | 7.2 | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 10.1 | 10.2 | 11.1 | 11.2 | 12.1 | 12.2 | |
| | | | | | | H | | H | | H | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | H | | | H | H | | | | | | | | | | | | | | | H | | | H | | | | | | |
| | | | | | | | H | | H | | H | H | | H | | | | | | | | | | | H | | | | | | | H | | |
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