# 学分制本科人才培养方案2021版

# 农业机械化及其自动化专业（属机械大类招生）

一、专业概况

**专业名称：农业机械化及其自动化专业**

**专业代码：082302**

农业机械化及其自动化专业属于新工科农业工程类专业，是农业工程与机械工程、农学与生命科学、信息科学等学科深度交叉融合的产物，是融合新一代信息技术，对现有农业工程、农业机械化及其自动化等专业的拓展和延伸。更注重智能化、信息化技术对农业生产系统的支撑作用，具有较高的专业区分度。该专业以农业机械设计与生产制造为基础，结合现代机械设计理论、计算机信息技术、物联网技术与经营管理知识，实现农机装备性能创新设计、生产制造与农业机械化规划与管理。

我校农业机械化及其自动化专业自1952年建校初期即开始大专招生，1956年开始面向全国招收“农业机械化专业”本科生，2011年列入第二批新疆维吾尔自治区重点产业紧缺人才专业建设计划，2013年入选国家第三批卓越工程师培养计划，2019年入选新疆维吾尔自治区一流本科专业建设点。本专业人才培养注重学生基础知识掌握、综合素质的提高、实践能力和应用创新能力培养。旨在培养适应新疆地方经济发展,掌握机械工程基础理论知识、农业装备构造原理、作物生产基础知识、农机运用管理知识、计算机与物联网技术的高素质复合应用型技术人才。

二、培养目标

培养政治素质过硬、品德优良、基础知识扎实、专业实践能力突出，具有创新创业思维，德智体美全面发展，掌握机械工程基础知识、农业装备构造原理、作物生产基础知识、农机运用管理知识，能够从事农机运用管理、农业机械设计、农机生产制造、企业运行管理、农机推广等高素质应用型工程技术人才。

三、毕业要求

本专业毕业生应获得以下几方面的知识、能力和素质。

|  |  |  |
| --- | --- | --- |
| **知识** | **能力** | **素质** |
| A1. 数学与自然科学  A2. 农业工程专业基础理论  A3. 农业工程专业知识及学科前沿发展趋势  A4. 实验与工程实践  A5. 工具性知识  A6. 人文社会科学  A7. 经济管理与法律法规 | B1. 领导和团队协作  B2. 沟通与交流  B3. 分析问题与解决问题  B4. 独立思考和判断  B5. 综合运用多学科理论、各种技术和现代工程工具  B6. 国际视野和国际理解能力  B7. 科学锻炼方法 | C1. 坚定信念和健全人格  C2. 身心健康  C3. 人文素养和社会责任感  C4. 职业道德  C5. 创新、创业精神  C6. 终身学习 |

（１）知识

A1. 数学与自然科学：具有从事工程工作所需的相关数学、自然科学知识；

A2. 农业专业基础理论：掌握扎实的农业工程专业的基本理论、基础知识；

A3. 农业工程专业知识及学科前沿发展趋势：掌握农业工程专业知识，具有专业新工艺、新装备、新技术的科研、开发、推广以及制造的能力，了解本专业的前沿发展现状和趋势。

A4. 实验与工程实践：具有制订实验方案、进行实验、分析和解释数据的能力，掌握农业机械化生产实习、金工实习等实践知识，具有在农业机械化生产实践中初步掌握并使用各种技术、技能的知识。

A5. 工具性知识：掌握外语、计算机信息技术及软件使用、文献检索等知识，了解相关知识的发展现状和趋势；

A6. 人文社会科学：了解一定的人文社会科学知识，对中国传统文化和人类文化精髓具有一定理解；

A7. 经济管理与法律法规：具有一定的经济管理知识。了解与本专业相关的职业和行业的生产、设计、研究与开发的法律、法规，熟悉环境保护和可持续发展等方面的方针、政策和法津、法规，能正确认识工程对于客观世界和社会的影响。

（２）能力

B1. 领导和团队协作：具有一定的组织管理能力，在团队中能有效发挥作用的能力；

B2. 沟通与交流：较强的表达能力和人际交往能力，能考虑他人的尊严、权利和需要；

B3. 分析问题与解决问题：在学习和工作中，具有分析问题与解决问题的能力，在参与工程设计中，具备影响因素分析、评估和选择完成工程任务所需的技术和方法，确定解决方案的能力；

B4. 独立思考和判断：在学习、工作和生活中具备独立思考并做出判断的能力；

B5. 综合运用多学科理论、各种技术和现代工程工具：掌握文献检索、资料查询及运用现代信息技术获取相关信息的基本方法，具有综合运用所学科学理论、各种技术手段和现代工程工具分析并解决工程问题的基本能力；

B6. 国际视野和国际理解能力：了解国际动态，关注全球性问题，理解和尊重世界不同文化的差异性和多样性；

B7. 科学锻炼方法: 掌握科学的体锻方法，具有良好的生活习惯，身体健康，达到国家大学生体质健康标准。

（３）素质

C1. 坚定信念和健全人格：热爱党、热爱社会主义、维护祖国统一，坚持科学发展观，具有“明德笃志，励学竞业”的新疆农业大学精神；

C2. 身心健康：具有健康的体魄和养成良好的生活习惯；

C3. 人文素养和社会责任感：具有较好的人文社会科学素养、较强的社会责任感；知识面宽广，具有对现代社会问题的认知、进而足以认识农业机械化及其自动化专业知识对于世界和社会影响的能力；

C4. 职业道德：具有良好的职业道德和现代工业社会的价值观念；

C5. 创新、创业精神：具有批判性思维和创意创新意识，以及对新产品、新技术和新设备进行研究、开发和设计的初步能力；

C6. 终身学习：具有适应发展的能力以及对终身学习的正确认识和学习能力。

四、学制与学位授予

学制4年，修业年限3－6年，最长学习年限包括休学期；本专业授予工学学士学位。

五、毕业要求学时学分

本专业最低毕业学分汉族班177.5+4学分，双语班177.5+4学分，其中4为第二课堂学分。

六、主干课程

工程制图、计算机绘图、理论力学、机械设计、机械原理、机械制图、材料成型技术基础、公差与技术测量、机械制造工艺学农业机械学、拖拉机构造、畜牧机械学、农产品加工与设备、农业工程装备导论。

七、课程体系设置、修读要求、学时学分统计

**课程体系设置表**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **课程**  **体系** | **课程类别** | **课程**  **性质** | **学分要求** | **备注** |
| **通识**  **教育** | 通识理论课 | 必修 | 60.5 | 22为计算机、数学、物理类课程学分 |
| 通识实践课 | 必修 | 5 | 军事训练、劳动、大学生社会实践 |
| **专业**  **教育** | 专业基础课 | 必修 | 41.5 | 为核心课打基础 |
| 专业核心课 | 必修 | 11.5 | 高度凝练核心课程，体现专业特色 |
| 专业选修课 | 选修 | 12 | 开设专业选修课程组，体现学生发展方向 |
| 专业实践课 | 必修 | 31 | 独立设置专业实验课，专业集中实践环节 |
| **素质**  **教育** | 素质教育限选课 | 选修 | 14 | 科学探索类、文学艺术历史类、社会分析与哲学类、创新创业类、安全教育类、心理健康教育类、军事理论类、其它专业推荐选修课，8大类里需在每类修够要求学分，累计至少14学分 |
| 素质教育任选课 | 选修 | 2 | 素质教育任选课累计至少修读2学分。  素质教育限选课修读超出14学分的部分可视作任选课学分 |
| **第二**  **课堂** | 第二课堂 | 选修 | 4 | 学生个人获得，参照第二课堂管理办法 |
| **合计学分** | | | **181.5** |  |

**修读要求：**

**(一)通识教育（64学分）**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **课程类别** | **课程代码** | **课程名称** | **学分** | **总**  **学时** | **讲课**  **学时** | **实验**  **学时** | **实践**  **学时** | **开课**  **学期** | **备注** |
| 通识理论课 |  | 中国近现代史纲要 | 3 | 48 | 40 | 0 | 8 | 1 |  |
|  | 思想道德修养与法律基础 | 3 | 48 | 40 | 0 | 8 | 2 |  |
|  | 马克思主义基本原理 | 3 | 48 | 40 | 0 | 8 | 3 |  |
|  | 形势与政策 | 2 | 32 | 32 | 0 |  | 1-6 |  |
|  | 新疆简明历史 | 2 | 32 | 28 | 0 | 4 | 4 |  |
|  | 毛泽东思想和中国特色社会主义理论体系概论 | 5 | 80 | 60 | 0 | 20 | 5 |  |
|  | 大学英语Ⅰ | 4 | 64 | 64 | 0 |  | 1 |  |
|  | 大学英语Ⅱ | 4 | 64 | 64 | 0 |  | 2 |  |
|  | 体育Ⅰ | 1.5 | 24 | 24 | 0 |  | 1 |  |
|  | 体育Ⅱ | 2 | 32 | 32 | 0 |  | 2 |  |
|  | 体育Ⅲ | 1.5 | 24 | 24 | 0 |  | 3 |  |
|  | 体育Ⅳ | 2 | 32 | 32 | 0 |  | 4 |  |
|  | 体育5 | 0.5 | 8 | 8 | 0 |  | 5 |  |
|  | 体育6 | 0.5 | 8 | 8 | 0 |  | 6 |  |
|  | 体育7 | 0.5 | 8 | 8 | 0 |  | 7 |  |
|  | 体育8 | 0.5 | 8 | 8 | 0 |  | 8 |  |
|  | 大学生心理健康教育 | 1 | 16 | 16 | 0 |  | 1 |  |
|  | 大学生职业生涯规划 | 1 | 16 | 16 | 0 |  | 2 |  |
|  | 大学生就业指导 | 1 | 16 | 16 | 0 |  | 5 |  |
|  | **高等数学Ⅲ(1)** | **4.5** | **72** | **72** | **0** |  | 1 |  |
|  | **高等数学Ⅲ(2)** | **5.5** | **88** | **88** | **0** |  | 2 |  |
|  | 大学物理 | 4 | 64 | 48 | 16 |  | 1 |  |
|  | 线性代数 | 2 | 32 | 32 | 0 |  | 2 |  |
|  | 概率统计 | 3.5 | 56 | 56 | 0 |  | 3 |  |
|  | C语言程序设计 | 3 | 48 | 24 | 24 |  | 4 |  |
| **小计** | | 60.5 | 968 | 880 | 40 | 48 |  |  |
| 通识实践课 |  | 军事训练 | 2 | 60 | 0 | 0 | 60 | 1 |  |
|  | 劳动 | 2 | 60 | 0 | 0 | 60 | 3 |  |
|  | 大学生社会实践 | 1 | 30 | 0 | 0 | 30 | 7 |  |
| **合计** | | **5** | **150** | **0** | **0** | **150** |  |  |
| **合计** | | | 65.5 | 1118 | 880 | 40 | 198 |  |  |

**(二)专业教育(96学分)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **课程类别** | **课程代码** | **课程名称** | **学分** | **总**  **学时** | **讲课**  **学时** | **实验**  **学时** | **实践**  **学时** | **开课**  **学期** | **备注** |
| 专业基础课 |  | **画法几何及机械制图（1）** | **3.5** | **56** | **56** | **0** |  | 2 |  |
|  | **画法几何及机械制图（2）** | **3** | **48** | **48** | **0** |  | 3 | 学期上 |
|  | **理论力学** | **3** | **48** | **48** | **0** |  | 3 |  |
|  | **材料力学** | **4** | **64** | **64** | **0** |  | 4 |  |
|  | **电工技术Ⅰ** | **2.5** | **40** | **26** | **14** |  | 3 |  |
|  | **电子技术Ⅰ** | **2** | **32** | **20** | **12** |  | 4 | 学期上 |
|  | **机械原理** | **3.5** | **56** | **50** | **6** |  | 4 |  |
|  | **机械设计** | **3** | **48** | **42** | **6** |  | 5 |  |
|  | 工程材料 | 2 | 32 | 26 | 6 |  | 3 |  |
|  | 控制工程基础 | 2 | 32 | 32 | 0 |  | 4 | 学期下 |
|  | 材料成型技术基础 | 2 | 32 | 32 | 0 |  | 4 |  |
|  | 公差与技术测量 | 2 | 32 | 26 | 6 |  | 5 |  |
|  | **机械制造工艺学** | **2** | **32** | **32** | **0** |  | 6 |  |
|  | 学科导论 | 1 | 16 | 16 | 0 |  | 2 |  |
|  | 农学基础 | 2 | 32 | 32 | 0 |  | 3 |  |
|  | 流体力学 | 2 | 32 | 32 | 0 |  | 3 |  |
|  | 工程热力学与传热学 | 2 | 32 | 16 | 16 |  | 4 |  |
| **小计** | | 41.5 | 664 | 598 | 66 |  |  |  |
| 专业核心课 |  | **农业物联网技术** | **2** | **32** | **32** | **0** |  | 4 |  |
|  | **农业机械学** | **3** | **48** | **40** | **8** |  | 6 |  |
|  | **汽车拖拉机构造** | **3** | **48** | **40** | **8** |  | 6 |  |
|  | **畜牧机械学** | **1.5** | **24** | **24** | **0** |  | 6 |  |
|  | **农产品加工与设备** | **2** | **32** | **24** | **8** |  | 7 |  |
| **小计** | | 11.5 | 184 | 160 | 24 |  |  |  |
| 专业选修课 |  | 液压传动 | 2 | 32 | 22 | 10 |  | 5 |  |
|  | **单片机原理及应用** | 2 | 32 | 32 | 0 |  | 5 |  |
|  | **人工智能（含图像处理）** | **4** | **64** | **64** | **0** |  | 5 |  |
|  | **智能传感与检测技术** | **2** | **32** | **24** | **8** |  | 6 |  |
|  | **农业智能生产系统** | **2** | **32** | **32** | **0** |  | 7 |  |
| **小计** | | **12** | **192** | **174** | **18** |  |  |  |
| 专业实践课 |  | 金工实习 | 2 | 60 | 0 |  | 60 | 3-4 |  |
|  | 工程制图测绘 | 1 | 30 | 0 |  | 30 | 3 | 下 |
|  | 认识实习 | 1 | 30 | 0 |  | 30 | 1-6 |  |
|  | 电工电子课程设计 | 2 | 60 | 0 |  | 60 | 4 | 下 |
|  | 机械设计课程设计 | 3 | 90 | 0 |  | 90 | 5 |  |
|  | 春种实习 | 2 | 60 | 0 |  | 60 | 6 |  |
|  | 收获及维修实习 | 3 | 90 | 0 |  | 90 | 7 |  |
|  | 汽车拖拉机拆装实习 | 2 | 60 | 0 |  | 60 | 6 |  |
|  | 农机制造工程实习 | 2 | 60 | 0 |  | 60 | **7** | **上** |
|  | 农机制造工程课程设计 | 2 | 60 | 0 |  | 60 | 7 | **上** |
|  | 专业文献综述 | 1 | 30 | 0 |  | 30 | 7 | **上** |
|  | 毕业设计(论文) | 6 | 180 | 0 |  | 180 | 7 |  |
|  | 毕业实习 | 4 | 120 | 0 |  | 120 | 8 | 下 |
| **小计** | | **31** | **930** | **0** |  | **930** |  |  |
| **合计** | | | **96** | **1970** | **932** | **108** | **930** |  |  |

**(三)素质教育（16学分）**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **课程**  **类别** | **课程名称** | **学分** | **总学时** | **讲课**  **学时** | **实验**  **学时** | **实践**  **学时** | **学期** | **备注** |
| 素质教育限选课 | 科学探索类 | 2 | 32 | 32 |  |  | 自定 | 学生需在每一类课程里修够要求学分。一共  需要获得至少14学分  设置：计算机绘图与solidworks三维成型设计 2学分（5-7学期） |
| 文学艺术历史类 | 2 | 32 | 32 |  |  | 自定 |
| 社会分析与哲学类 | 2 | 32 | 32 |  |  | 自定 |
| 其它专业推荐选修课 | 2 | 32 | 32 |  |  | 自定 |
| 安全教育类 | 2 | 32 | 32 |  |  | 自定 |
| 创新创业类 | 1 | 16 | 16 |  |  | 自定 |
| 心理健康教育类 | 1 | 16 | 16 | 0 | 0 | 大学生心理健康教育 |
| 军事理论类 | 2 | 32 | 32 |  |  | 1、2 |
| 素质教育任选课 | 人文科学 | 2 | 32 | 32 |  |  | 自定 | 素质教育任选课累计至少修读2学分。  素质教育限选课修读超出14学分的部分可视作任选课学分；  考虑专业认证，选择自然科学类课程 |
| 社会科学 |
| 自然科学 |
| 艺术体育 |
| 应用技术 |
| **合计最低修读学分** | | **16** | **256** | **256** |  |  |  |  |

**(四)第二课堂（4学分）**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **课程类别** | **课程名称** | **学分** | **总学时** | **讲课学时** | **实验学时** | **实践学时** | **学期** | **备注** |
| 第二课堂 | 按照第二课堂管理办法 | 4 | - | - | - | - | - |  |
| **合计** | | **4** |  |  |  |  |  |  |

**（五）课程分类学时学分统计**

**课程分类学时学分统计表**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **课程类别**  **毕业要求** | **通识教育** | | **专业教育** | | | | **素质教育** | |
| **通识**  **理论课** | **通识**  **实践课** | **专业**  **基础课** | **专业**  **核心课** | **专业**  **选修课** | **专业**  **实践课** | **素质教育**  **限选课** | **素质教育**  **任选课** |
| 毕业要求最低学时 | 968 | 150 | 664 | 184 | 192 | 930 | 224 | 32 |
| 毕业要求最低学分 | 60.5 | 5 | 41.5 | 11.5 | 12 | 31 | 14 | 2 |
| 最低学分占比 | 33.33 | 2.75 | 22.87 | 6.34 | 6.61 | 17.02 | 7.71 | 1.10 |

八、课程对培养目标、毕业要求的支撑关系矩阵

| 课程  性质 | 课程名称 | 知识贡献 | | | | | | | | | | | | | | | | | | | 能力贡献 | | | | | | | | | | | | | | | | | | | | 素质贡献 | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A1 | | | A2 | | | A3 | | | A4 | | | A5 | | A6 | | A7 | | | B1 | | | B2 | | | B3 | | | B4 | | | B5 | | | B6 | | | B7 | | C1 | | | C2 | | | C3 | | C4 | | | C5 | | | C6 | | |
| T | | P | T | | P | T | | P | T | | P | T | P | T | P | T | | P | T | | P | T | | P | T | | P | T | | P | T | | P | T | | P | T | P | T | P | | T | | P | T | P | T | | P | T | | P | T | | P |
| 通  识  教  育 | 中国近现代史纲要 |  | |  |  | |  |  | |  |  | |  |  |  | H |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | L |  | L |  | |  | |  |  |  | L | |  |  | |  | L | |  |
| 思想道德修养与法律基础 |  | |  |  | |  |  | |  |  | |  |  |  | H |  |  | |  | L | |  |  | |  |  | |  |  | |  |  | |  |  | |  | L |  | H |  | |  | |  |  |  | M | |  |  | |  | L | |  |
| 马克思主义基本原理 |  | |  |  | |  |  | |  |  | |  |  |  | H |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | L |  | H |  | |  | |  |  |  | M | |  |  | |  | L | |  |
| 形势与政策 |  | |  |  | |  |  | |  |  | |  |  |  | H |  |  | |  |  | |  | M | |  |  | |  |  | |  |  | |  |  | |  |  |  |  |  | | M | |  |  |  | M | |  |  | |  | L | |  |
| 毛泽东思想和中国特色社会主义理论体系概论 |  | |  |  | |  |  | |  |  | |  |  |  | H |  |  | |  | M | |  |  | |  |  | |  |  | |  |  | |  |  | |  | L |  | H |  | |  | |  |  |  | M | |  |  | |  | L | |  |
| 新疆简明历史 |  | |  |  | |  |  | |  |  | |  |  |  | H |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | L |  | H |  | |  | |  |  |  | L | |  |  | |  | L | |  |
| 大学英语Ⅰ |  | |  |  | |  |  | |  |  | |  | H |  |  |  |  | |  | L | |  |  | |  |  | |  |  | |  |  | |  | H | |  | M |  |  |  | |  | |  | M |  | M | |  |  | |  |  | |  |
| 大学英语Ⅱ |  | |  |  | |  |  | |  |  | |  | H |  |  |  |  | |  | L | |  |  | |  |  | |  |  | |  |  | |  | H | |  | M |  |  |  | |  | |  | M |  | M | |  |  | |  |  | |  |
| 体育Ⅰ |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | M |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| 体育Ⅱ |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | M |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| 体育Ⅲ |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | M |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| 体育Ⅳ |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | M |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| 体育5 |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | M |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| 体育6 |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | M |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| 体育7 |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | M |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| 体育8 |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | M |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| 大学生职业生涯规划 |  | |  |  | |  |  | |  |  | |  |  |  | M |  | M | |  |  | |  |  | |  |  | |  |  | |  | M | |  |  | |  |  |  |  |  | |  | |  |  |  | H | |  |  | |  |  | |  |
| 大学生创业就业指导 |  | |  |  | |  |  | |  |  | |  |  |  | M |  | M | |  |  | |  |  | |  |  | |  | M | |  |  | |  |  | |  |  |  |  |  | |  | |  |  |  | H | |  |  | |  | L | |  |
| 大学生心理健康教育 |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | M |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| C语言程序设计 |  | |  |  | |  |  | |  |  | |  | H |  |  |  | M | |  |  | |  |  | |  | M | |  |  | |  |  | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | M | |  |  | |  |
| 高等数学Ⅲ(1) | H | |  |  | |  |  | |  |  | |  | H |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | M | |  |  | |  | M |  |  |  | |  | |  |  |  |  | |  | M | |  | H | |  |
| 高等数学Ⅲ(2) | H | |  |  | |  |  | |  |  | |  | H |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | M | |  |  | |  | M |  |  |  | |  | |  |  |  |  | |  | M | |  | H | |  |
| 线性代数 | H | |  |  | |  |  | |  |  | |  | H |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | M | |  |  | |  | M |  |  |  | |  | |  |  |  |  | |  | M | |  | M | |  |
| 概率统计 | H | |  |  | |  |  | |  |  | |  | H |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | M | |  |  | |  | M |  |  |  | |  | |  |  |  |  | |  | M | |  | M | |  |
| 大学物理（含实验） | H | |  | H | |  |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | M | |  |  | |  | M |  |  |  | |  | |  |  |  |  | |  | M | |  | L | |  |
| 军事训练 |  | |  |  | |  |  | |  |  | |  |  |  | M |  |  | |  |  | |  | M | |  |  | |  |  | |  |  | |  |  | |  |  |  |  |  | | H | |  |  |  |  | |  |  | |  |  | |  |
| 劳动 |  | |  |  | |  |  | |  |  | |  | M |  | M |  |  | |  | H | |  |  | |  |  | |  |  | |  | M | |  |  | |  |  |  | M |  | |  | |  |  |  | L | |  |  | |  |  | |  |
| 大学生社会实践 |  | |  |  | |  |  | |  |  | |  | M |  | M |  | L | |  | H | |  |  | |  |  | |  |  | |  | M | |  |  | |  |  |  |  |  | |  | |  |  |  | L | |  |  | |  |  | |  |
| 专业教育 | 画法几何及机械制图（1） |  | |  |  | |  | H | |  |  | |  |  |  |  |  |  | |  | M | |  |  | |  |  | |  |  | |  | M | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 画法几何及机械制图（2） |  | |  |  | |  | H | |  |  | |  |  |  |  |  |  | |  | M | |  |  | |  |  | |  |  | |  | M | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 理论力学 | M | |  | H | |  |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | H | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 流体力学 | M | |  | M | |  |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | |  | H | |  |  | |  | M | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 工程热力学与传热学 | M | |  | M | |  |  | |  | H | |  |  |  |  |  |  | |  |  | |  |  | |  | H | |  |  | |  | M | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 材料力学 | M | |  | H | |  |  | |  | H | |  |  |  |  |  |  | |  |  | |  |  | |  | H | |  |  | |  | H | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 电工技术Ⅰ | L | |  | H | |  |  | |  | H | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | H | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 电子技术Ⅱ | L | |  | H | |  |  | |  | H | |  |  |  |  |  |  | |  | M | |  |  | |  |  | |  |  | |  | H | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 机械原理 |  | |  |  | |  | H | |  | H | |  |  |  |  |  |  | |  | M | |  |  | |  |  | |  |  | |  | H | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 机械设计 |  | |  |  | |  |  | |  | H | |  |  |  |  |  |  | |  |  | |  | H | |  | H | |  |  | |  |  | |  |  | |  |  |  |  |  | |  | |  |  |  | H | |  | H | |  |  | |  |
| 材料成型技术基础 |  | |  |  | |  | H | |  | H | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | H | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 工程材料 |  | |  |  | |  | H | |  | H | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | H | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 公差与技术测量 |  | |  |  | |  | H | |  | H | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  | H | |  |  | |  |  |  |  |  | |  | |  |  |  |  | |  | H | |  |  | |  |
| 机械制造工艺学 |  |  | |  |  | | H |  | | H |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | | H |  | |  |  | |
| 控制工程基础 |  |  | | H |  | |  |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | | M |  | | M |  | | M |  | |  |  | |  |  |  | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 农学基础 |  |  | | H |  | |  |  | | H |  | |  |  |  |  |  |  | |  |  | |  |  | | H |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  | H |  | | H |  | |  |  | |
| 农业机械学 |  |  | |  |  | | H |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | | H |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | | H |  | |  |  | |
| 汽车拖拉机构造 |  |  | |  |  | | H |  | |  |  | |  |  |  |  |  |  | | H |  | |  |  | | H |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | | H |  | |  |  | |
| 畜牧机械学 |  |  | |  |  | | H |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | | H |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | | H |  | |  |  | |
| 农产品加工与设备 |  |  | |  |  | | H |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | | H |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | | H |  | |  |  | |
| 农业物联网技术 |  |  | |  |  | | H |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | | H |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | | H |  | |  |  | |
| 单片机原理与应用 |  |  | | H |  | |  |  | | H |  | |  |  |  |  |  |  | |  |  | |  |  | | H |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  | H |  | | H |  | |  |  | |
| 液压传动 |  |  | | H |  | |  |  | | H |  | |  |  |  |  |  |  | |  |  | |  |  | | H |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  | H |  | | H |  | |  |  | |
| 智能传感与检测技术 |  |  | | H |  | |  |  | | H |  | |  |  |  |  |  |  | |  |  | |  |  | | H |  | |  |  | | H |  | |  |  | |  |  |  | |  |  |  | |  |  | H |  | | H |  | |  |  | |
| 农业智能生产系统 |  |  | |  |  | | H |  | | M |  | |  |  |  |  |  |  | |  |  | |  |  | | M |  | |  |  | | M |  | |  |  | |  |  |  | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 人工智能（含图像处理） |  |  | |  |  | |  |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | |  |  | |  |  | |
| 金工实习 |  |  | |  |  | | M |  | |  |  | |  |  |  |  |  |  | | L |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 工程制图测绘 |  |  | |  |  | | M |  | |  |  | |  |  |  |  |  |  | | M |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 认识实习 |  |  | |  |  | | M |  | |  |  | |  |  |  |  |  |  | | L |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 机械设计课程设计 |  |  | |  |  | | M |  | | M |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 电工电子课程设计 |  |  | |  |  | | M |  | | M |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 春种实习 |  |  | |  |  | |  |  | | M |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | | M |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 收获及维修实习 |  |  | |  |  | |  |  | | M |  | |  |  |  |  |  |  | | H |  | |  |  | | M |  | |  |  | |  |  | |  |  | | M |  | M | |  |  |  | | M |  | M |  | | M |  | |  |  | |
| 汽车拖拉机拆装实习 |  |  | |  |  | | M |  | | M |  | |  |  |  |  |  |  | | H |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 农机制造工程实习 |  |  | |  |  | | M |  | | M |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 农机制造工程课程设计 |  |  | |  |  | | M |  | | M |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 专业文献综述 |  |  | |  |  | | M |  | | M |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 毕业实习 |  |  | |  |  | | M |  | | M |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 毕业论文、答辩 |  |  | |  |  | | M |  | | M |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | | M |  | | M |  | |  |  | |  |  | M | |  |  |  | |  |  | M |  | | M |  | |  |  | |
| 素质教育 | 科学探索类 | M |  | |  |  | | M |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | | L |  | | M |  | |  |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | | M |  | | M |  | |
| 文学艺术历史类 |  |  | |  |  | |  |  | |  |  | |  |  | H |  |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | | M |  | |  |  |  | |  | H |  | |  |  |  |  | |  |  | |  |  | |
| 社会分析与哲学类 |  |  | |  |  | |  |  | |  |  | |  |  | H |  |  |  | |  |  | |  |  | | L |  | |  |  | |  |  | | L |  | | M |  |  | |  |  |  | |  |  |  |  | |  |  | | L |  | |
| 其它专业推荐选修课 | L |  | | L |  | | L |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | |  |  | |  |  | |
| 安全教育类 |  |  | |  |  | |  |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  |  | |  |  |  | | M |  |  |  | |  |  | |  |  | |
| 创新创业类 |  |  | |  |  | |  |  | |  |  | |  |  |  |  |  |  | | H |  | | H |  | | L |  | | M |  | | L |  | |  |  | |  |  |  | |  |  |  | | H |  | H |  | | M |  | | M |  | |
| 心理健康教育类 |  |  | |  |  | |  |  | |  |  | |  |  |  |  |  |  | |  |  | | H |  | | M |  | |  |  | |  |  | |  |  | |  |  | H | |  |  |  | | M |  |  |  | |  |  | | L |  | |
| 军事理论类 |  |  | |  |  | |  |  | |  |  | |  |  |  |  |  |  | | M |  | |  |  | |  |  | |  |  | |  |  | |  |  | | H |  |  | |  |  |  | |  |  |  |  | |  |  | |  |  | |
| 素质教育任选课 |  | |  |  |  | |  |  | | L |  | |  |  | M |  |  |  | |  |  | |  |  | |  |  | | M |  | |  |  | |  |  | | L |  | M | |  | M |  | | M |  |  |  | |  |  | |  |  | |
| 第二课堂 | 按照第二课堂管理办法 |  | |  |  |  | |  |  | |  |  | |  |  |  |  |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  |  | |  |  |  | |  |  |  |  | |  |  | |  |  | |

注：1.表中H、M、L分别表示课程与毕业能力关联度的强、中、弱程度

2.毕业要求中（T）为理论，（P）为实践。

3.A1-C6分别对应人才培养方案中“毕业要求”中的事项