

《医学统计与数据分析》教学大纲

一、课程基本信息

课程名称/英文名称	医学统计与数据分析/ Medical Statistics and Data Analysis	课程代码	BME1323
课程层次	本科生课程	学分/学时	3.0/48
主要面向专业	生物医学工程	授课语言	中文, English
先修课程	无	建议先修说明	无
开课单位	生物医学工程学院	课程负责人	万之瑜

二、课程简介

《医学统计与数据分析》是生物医学工程专业本科生的一门专业选修课。本课程聚焦运用数理统计的原理、方法及统计工具来分析生物医学工程领域的生物医学大数据，注重实用性。通过 48 学时的教学，应达到如下教学目的：1. 理解并掌握统计学的概念、理论与数学基础；2. 了解医学统计学的产生、发展及研究对象与作用；3. 可针对研究的具体目标，准确搜集、整理、分析与提炼信息与数据；4. 掌握医学统计学的重要方法，进行合理的统计设计与研究；5. 可采用 R 和 Python 编程语言处理基本的统计分析。通过掌握 Python 语言对医学大数据的处理分析方法和项目实践经历，为未来在医学人工智能领域的研究和工程实践打好基础。

三、课程教学目标

1. 知识目标

- 1.1. 了解医学统计学的发展、研究对象及其在生物医学中的作用。
- 1.2. 掌握统计学基本理论与数学基础。
- 1.3. 理解并掌握统计推断、方差分析、相关与回归分析、数据分类、聚类与降维、时间序列分析及数据可视化等常用方法。

2. 能力目标

- 2.1. 掌握试验设计方法，能够分析科学问题并开展统计实验设计。
- 2.2. 具备数据搜集、整理、分析、解释与结果展示能力。
- 2.3. 熟练使用 R 和 Python 编程语言进行统计分析与数据处理。
- 2.4. 能够运用统计学方法解决生物学中的实际问题。

3. 综合素质目标

- 3.1. 培养数学、生物、医学与计算机交叉融合的研究意识与实践能力。
- 3.2. 提升团队协作、人际沟通与学术交流能力。
- 3.3. 培养严谨的数据分析思维与科学研究素养。

四、课程教学方法

本课程以课堂讲授为基础，通过小组讨论增强学生对于理论的理解，通过案例分析和项目实践增强学生对于理论和技术的应用，提高对实际生物学场景中复杂的统计分析问题的解决能力。采用课堂讲授、随堂测试、课后作业、案例教学、期末考试、课程项目等多种方式结合。突出启发式的基于理解的教学方法，与国际接轨，提高学生的主动学习的热情和科研兴趣。统计基础知识、理论及概念，以及统计算法和统计软件的介绍以课堂讲授与讨论为主。在讲授理论知识的基础上，结合实际生物学领域的案例帮助学生理解，并以课程项目实践作为启发式和实践式教学材料，引导学生加深对基础知识的认识，开展思考、讨论与实践操作。同时可结合网络公开课、专家讲座等多种方式进行教学。授课语言口语中文为主，书写英文为主。

五、课程教学内容与安排

以教学周方式安排教学内容

时间	章节名称	主要教学内容 (主要知识点)	学时安排	教学方法 (仅列名称)
第 1 周	一、绪论(a)	课程介绍。 医学统计学简介。 统计学的概念。	2	课堂讲授+ 案例讨论+ 分组讨论

第 2 周第 1 次	一、绪论(b)	统计学实验设计方法。 描述性统计。	2	课堂讲授+ 案例讨论
第 2 周第 2 次	二、数据可视化 (a)	进行随堂测试。 R 语言简介。	2	课堂讲授+ 课后作业
第 3 周	二、数据可视化 (b)	Python 语言简介。	2	课堂讲授+ 课后作业
第 4 周第 1 次	三、概率与概率 分布(a)	随机试验设计与样本。 贝叶斯推断。 ROC 曲线。 离散概率分布。	2	课堂讲授+ 课后作业
第 4 周第 2 次	三、概率与概率 分布(b)	连续概率分布。 点估计。 置信区间。	2	课堂讲授+ 课后作业
第 5 周	四、假设检验(a)	单样本推断。	2	课堂讲授+ 课后作业
第 6 周第 1 次	四、假设检验 (b)	双样本推断。	2	课堂讲授+ 课后作业
第 6 周第 2 次	四、假设检验(c)	检验功效与样本数估计。	2	课堂讲授+ 课后作业
第 7 周	五、非参数检验	秩和检验。 卡方检验。	2	课堂讲授+ 课后作业
第 8 周第 1 次	六、方差分析(a)	单因素方差分析。 双因素方差分析。 方差分析多重比较。	2	课堂讲授+ 课后作业
第 8 周第 2 次	六、方差分析 (b)	2x2 析因设计。 方差齐性检验。	2	课堂讲授+ 课后作业

第 9 周	生物医学工程中的应用案例（含 嘉宾讲座 ）	真实世界研究。 健康医疗大数据。 数据安全与隐私保护。	2	课堂讲授+ 案例讨论
第 10 周第 1 次	七、数据分类(a)	KNN 算法。 支持向量机。 开始课程项目选题。	2	课堂讲授+ 课后作业
第 10 周第 2 次	七、数据分类 (b)	朴素贝叶斯。 决策树与随机森林。 完成团队组建。	2	课堂讲授+ 课后作业
第 11 周	八、回归分析(a)	线性回归。 正则化回归。	2	课堂讲授+ 课后作业
第 12 周第 1 次	八、回归分析 (b)	多项式回归。 Logistic 回归。	2	课堂讲授+ 课后作业
第 12 周第 2 次	九、有监督学习 (a)	神经网络介绍。 卷积神经网络。 随机梯度下降。 各团队完成课程项目题目选择。	2	课堂讲授
第 13 周	九、有监督学习 (b)	循环神经网络。 Transformer。 生成模型。	2	课堂讲授
第 14 周第 1 次	十、无监督学习 (a)	层级聚类。 高斯混合模型。 各团队提交开题报告。	2	课堂讲授
第 14 周第 2 次	十、无监督学习 (b)	K-means 算法。 自监督学习模型。	2	课堂讲授
第 15 周	十一、数据降维	相关分析。 主成分分析。	2	课堂讲授

第 16 周第 1 次	十二、时间序列 分析	生存分析。 隐马尔可夫模型。 马尔可夫蒙特卡洛。	2	课堂讲授
第 16 周第 2 次	课程项目汇报	分组汇报及点评。	2	分组汇报

六、考核方式和成绩评定方法

本课程除了期末考试和课后作业以外，主要采用基于团队课程项目（team-based course project）的方式考核学生对教学内容的掌握。每 1-2 个学生组成团队来完成课程项目，各个团队将从课程负责人制定的选题列表选定某一自己感兴趣的项目，开展文献调研，查找现有的解决方案，发现并总结尚存的问题，并提出自己的解决思路，然后搜寻相关数据集进行实验验证。每一个团队都需要有基于数据的实验结果，并进行口头汇报和墙报展示，最后以英文论文的形式提交项目报告。在提前告知并得到课程负责人同意的前提下，学生也可在选题列表之外自寻项目进行研究。课程项目的日程安排如下：

教学周	课程项目设计计划
10	发布课程项目选题，学生开始组队。
10	学生组队完成，开始选择课程项目题目。
12	各团队 完成项目选题 ，开始准备开题报告。
14	每个团队上交 开题报告 （4-page proposal）。
14	老师和助教对各团队开题报告开展中期评定，并反馈指导意见给各团队。学生基于反馈意见，准备最终课程项目报告（final course project report）。
16	每个团队提前录制并提交 10 分钟左右的 口头课程汇报 视频。所有团队进行墙报展示，评分顺序不提前确定。注意：墙报展示前，所有团队须提交 PPT 及汇报视频。授课老师及助教对各团队口头课程汇报及墙报展示进行公平公正的打分和排名。
17	学生上交 最终课程项目论文 （更新后的 10-page paper）。（注意：报告作者排名不分先后，但需要在报告中标明各人负责的部分和个人贡献。）
18	授课老师和助教对最终课程项目论文开展期末评定。

课程项目的打分比例为：中期评定开题报告（10%）+口头汇报（20%）+墙报展示（30%）+课程项目论文（40%）。初步项目计划及课程项目报告的打分由助教参与评分，由授课老师最终确定。口头汇报和墙报展示的得分由授课老师（60%）、及助教（40%）加权平均获得。

总体考核比例如下表所示：

1	课程项目	30%
2	课后作业	30%
3	期末考试	30%
4	随堂测试	5%
5	出勤与课堂表现	5%
	总分	100%

测试及提交的作业以英文为主。一共 6 次课后作业，包含问答题、计算题及编程题等，不允许交流合作。使用生成式 AI 工具（如 ChatGPT、DeepSeek 等）需要申明及记录版本号。6 次作业的权重相等。随堂测试（闭卷）测验第 1 周的学习效果。课后作业及随堂测试的成绩和评语在四周内反馈给学生。

出勤率采取打卡及抽查相结合的方式，教室中设置打卡机制，并且授课老师在上课时可能随机抽取学生回答问题。如果发现学生缺席、不在现场并且没有请假，扣除总成绩的 1%，最多扣 5%。请事假的学生可以酌情免除扣除出勤分数。上课不积极参与的学生将扣除总成绩的 1%。严重扰乱课堂纪律的学生，课程总成绩最多可扣除 5%。

每位学生的所有作业（包括课后作业、开题报告及课程项目论文）共享总共一周的宽限期。宽限期使用完后，每延迟一天提交，将扣除约一分（即总成绩的 1%）。不满一天按照一天计算。作业可能设有加分项或加分题。

最终的总成绩按百分制换算至等级制。换算关系参考下表所示：

等级	A+	A	A-	B+	B	B-	C+	C	C-	F	EXC	P	NP	N
绩点	4.0	4.0	3.7	3.3	3.0	2.7	2.3	2	1.7	0	N/A	N/A	N/A	N/A
参考百分制转换关系	95-100	90-94	85-89	80-84	75-79	70-74	67-69	63-66	60-62	0-59	根据课程规定	>=60	<60	未有成绩记录

建议如果班级规模大于 30 人，A-及以上不超过 40%，不及格率不超过 10%。

七、教材和参考书目

（需符合《上海科技大学教材选用管理办法》文件要求）

(一) 推荐教材 (说明: 书名、作者、出版社、出版年月、ISBN 为必填项; 译者为选填项)

推荐教材 1:

*书名: Fundamentals of Biostatistics	*作者: Bernard Rosner	译者:	*ISBN: 9781305268920
*出版社: Cengage Learning	*出版年月: 2015 年 8 月	*版次: 第 8 版	

推荐教材 2:

*书名: 医学统计学	*作者: 李晓松	译者:	*ISBN : 9787040540468
*出版社: 高等教育出版社	*出版年月: 2020 年 5 月	*版次: 第 4 版	

推荐教材 3:

*书名: 医学统计学	*作者: 颜艳、王彤	译者:	*ISBN : 9787117303859
*出版社: 人民卫生出版社	*出版年月: 2021 年 1 月	*版次: 第 5 版	

(推荐教材信息可复制以上表格依次添加)

(二) 参考书目

参考书目 1:

*书名: 医学统计学实习指导	*作者: 赵星、张菊英	译者:	*ISBN : 9787040549386
*出版社: 高等教育出版社	*出版年月: 2020 年 8 月	*版次: 第 4 版	

参考书目 2:

*书名：医学统计学习题解答	*作者：颜艳、王彤	译者：	*ISBN： 9787117337465
*出版社：人民卫生出版社	*出版年月：2022 年 10 月	*版次：第 5 版	

参考书目 3:

*书名：Python 医学实用统计分析	*作者：潘兴强、陈根浪	译者：	*ISBN： 9787117341417
*出版社：人民卫生出版社	*出版年月：2023 年 1 月	*版次：第 1 版	

参考书目 4:

*书名：Python 医学数据分析入门	*作者：赵军、刘文婷	译者：	*ISBN： 9787115575432
*出版社：人民邮电出版社	*出版年月：2022 年 1 月	*版次：第 1 版	

参考书目 5:

*书名：Probabilistic Machine Learning: An Introduction	*作者：Kevin Patrick Murphy	译者：	*ISBN： 9780262046824/ 9780262369305
*出版社：The MIT Press	*出版年月：2022 年 3 月	*版次：第 1 版	

（参考书目信息可复制以上表格依次添加）

八、学术诚信教育

本课程高度重视学术诚信，严禁抄袭、作弊等行为。

“在学习、科研、实习实践等活动中，学生应恪守学术道德，坚守学术诚信，保护知识产权，坚持勇于创新、求真务实的科学精神，努力培养自己严谨求实、诚实自律、真诚协作的科学态度，成为良好学术风气的维护者、严谨治学的力行者、优良学术道德的传承者。”

（具体请参见《上海科技大学学生学术诚信规范与管理办法（试行）》文件要求，如果教师有更具体的要求，请详细列出。）

九、其他说明（可选）

（【建议文字格式】中文：宋体，小四；英文：Times New Roman，小四；1.5 倍行间距；首行缩进 2 字符。）

Medical Statistics and Data Analysis

Syllabus

1. Basic Course Information

Course Name	Medical Statistics and Data Analysis	Course Code	BME1323
Course Level*	Undergraduate	Credit/Contact Hour	3.0/48
Major	Biomedical Engineering	Teaching Language	Chinese, English
Prerequisite	N/A	Prerequisite suggestion	N/A
School/Institute	School of Biomedical Engineering	Instructor**	Zhiyu Wan

Notes: *Course level includes undergraduate, graduate, or undergraduate/graduate.

**If multiple instructors are involved, please list the name of team leader.

2. Course Introduction

Medical Statistics and Data Analysis is a professional elective course for undergraduate students majoring in Biomedical Engineering. The course focuses on applying the principles and methods of mathematical statistics, together with statistical tools, to the analysis of biomedical big data in the field of biomedical engineering, with an emphasis on practical applications.

Through 48 hours of instruction, the course aims to enable students to: (1) understand and master fundamental statistical concepts, theories, and mathematical foundations; (2) understand the origins, development, research scope, and roles of medical statistics; (3) accurately collect, organize, analyze, and extract information and data according to specific research objectives; (4) master important methods in medical statistics and conduct appropriate statistical design and research; and (5) use R and Python programming languages to perform basic statistical analyses.

By mastering Python-based methods for processing and analyzing medical big data and gaining hands-on experience through project-based practice, students will establish a solid foundation for future research and engineering applications in the field of medical artificial intelligence.

3. Learning Goals

3.1. Knowledge Goals

3.1.1. Understand the development, scope of study, and role of medical statistics in biomedicine.

3.1.2. Master the fundamental theories and mathematical foundations of statistics.

3.1.3. Understand and master commonly used methods, including statistical inference, analysis of variance, correlation and regression analysis, data classification, clustering and dimensionality reduction, time-series analysis, and data visualization.

3.2. Skill Goals

3.2.1. Master experimental design methods and be able to analyze scientific questions and develop appropriate statistical study designs.

3.2.2. Develop the ability to collect, organize, analyze, and interpret data, as well as present analytical results effectively.

3.2.3. Proficiently use R and Python programming languages for statistical analysis and data processing.

3.2.4. Apply statistical methods to solve practical problems in biomedicine.

3.3. Comprehensive Competency Goals

3.3.1. Develop interdisciplinary research awareness and practical capabilities integrating mathematics, biology, medicine, and computer science.

3.3.2. Enhance teamwork, interpersonal communication, and academic communication skills.

3.3.3. Cultivate rigorous data-analytical thinking and scientific research competence.

4. Instructional Pedagogy

This course is primarily delivered through classroom lectures. Group discussions are used to deepen students' understanding of theoretical concepts, while case studies and project-based practice strengthen their ability to apply statistical theories and techniques and solve complex data-analysis problems in real-world biomedical settings.

A combination of teaching and assessment approaches is adopted, including classroom lectures, in-class quizzes, homework assignments, case-based teaching, a final examination, and course projects. The course emphasizes heuristic and understanding-based teaching approaches aligned with

international standards, with the aim of promoting active learning and stimulating students' interest in scientific research.

Fundamental statistical knowledge, theories, concepts, algorithms, and statistical software are mainly introduced through lectures and classroom discussions. Building on theoretical instruction, real-world biomedical cases are incorporated to facilitate understanding. Course projects serve as heuristic and practice-oriented learning activities, guiding students to deepen their understanding of fundamental concepts through independent thinking, discussion, and hands-on practice.

Massive online open courses, expert lectures, and other supplementary teaching formats may also be incorporated. Spoken instruction will be delivered primarily in Chinese, while written materials will be presented primarily in English.

5. Course Content and Schedule

(You might choose one of the two course structures listed below. Please list practical training if any.)

Course Structure by Week

Week	Chapter	Teaching Contents	Contact Hours	Teaching Modes
Week 1	I. Course Introduction (a)	Course introduction. Introduction to medical statistics. Concepts of statistics.	2	Lectures, case discussions, and group discussions
Week 2, Lecture 1	I. Course Introduction (b)	Statistical experimental design approaches. Descriptive statistics.	2	Lectures and case discussions
Week 2, Lecture 2	II. Data Visualization (a)	In-class quiz. Introduction to R.	2	Lectures and homework
Week 3	II. Data Visualization (b)	Introduction to Python.	2	Lectures and homework

Week 4, Lecture 1	III. Probability and Probability Distributions (a)	Randomized experimental design and sampling. Bayesian inference. Receiver operating characteristic (ROC) curves. Discrete probability distributions.	2	Lectures and homework
Week 4, Lecture 2	III. Probability and Probability Distributions (b)	Continuous probability distributions. Point estimations. Confidence intervals.	2	Lectures and homework
Week 5	IV. Hypothesis Testing (a)	One-Sample Inference.	2	Lectures and homework
Week 6, Lecture 1	IV. Hypothesis Testing (b)	Two-sample inference.	2	Lectures and homework
Week 6, Lecture 2	IV. Hypothesis Testing (c)	Statistical power and sample size estimation.	2	Lectures and homework
Week 7	V. Nonparametric Tests	Rank-sum tests. Chi-square tests.	2	Lectures and homework
Week 8, Lecture 1	VI. Analysis of Variance (a)	One-way analysis of variance. Two-way analysis of variance. Multiple comparisons in analysis of variance.	2	Lectures and homework
Week 8, Lecture 2	VI. Analysis of Variance (b)	2×2 factorial design. Tests for homogeneity of variance.	2	Lectures and homework

Week 9	Case Studies in Biomedical Engineering (including Guest Lecture)	Real-world studies. Healthcare big data. Data security and privacy protection. Guest lecture.	2	Lectures and case discussions
Week 10, Lecture 1	VII. Data Classification (a)	K-nearest neighbors (KNN) algorithm. Support vector machines. Announce course project topics.	2	Lectures and homework
Week 10, Lecture 2	VII. Data Classification (b)	Naive bayes. Decision trees and random forests. Complete team formation.	2	Lectures and homework
Week 11	VIII. Regression Analysis (a)	Linear regression. Regularized regression.	2	Lectures and homework
Week 12, Lecture 1	VIII. Regression Analysis (b)	Polynomial regression. Logistic regression.	2	Lectures and homework
Week 12, Lecture 2	IX. Supervised Learning (a)	Introduction to neural networks. Convolutional neural networks. Stochastic gradient descent. Complete project topic selection.	2	Lectures
Week 13	IX. Supervised Learning (b)	Recurrent neural networks. Transformers. Generative models.	2	Lectures
Week 14, Lecture 1	X. Unsupervised Learning (a)	Hierarchical Clustering. Gaussian Mixture Models.	2	Lectures

		Submission of team project proposals.		
Week 14, Lecture 2	X. Unsupervised Learning (b)	K-means clustering. Self-supervised learning models.	2	Lectures
Week 15	XI. Dimensionality Reduction	Correlation analysis. Principal component analysis.	2	Lectures
Week 16, Lecture 1	XII. Time-Series Analysis	Survival analysis. Hidden Markov models. Markov chain Monte Carlo.	2	Lectures
Week 16, Lecture 2	Course Project Presentation	Group presentations and feedbacks.	2	Group presentations

Course Structure by Chapter

Chapter	Teaching Contents	Week	Contact Hours	Teaching Modes
/	/	/	/	/

6.Grading Policy

In addition to the final examination and homework assignments, this course primarily assesses students' mastery of the course content through team-based course projects. Each team will consist of 1 to 2 students. Teams will select a topic of interest from a list prepared by the course coordinator, conduct a literature review, identify existing solutions, summarize unresolved problems, propose their own approaches, and locate relevant datasets for experimental validation.

Each team is required to produce data-driven experimental results, deliver an oral presentation and an poster presentation, and submit a final project report in the form of an English-language academic

paper. With prior notification and approval from the course coordinator, students may also propose and investigate a project topic outside the provided list.

The course project schedule is as follows:

Week	Course Project Planning
10	Announce course project topics, and students begin forming teams.
10	Students complete team formation and begin selecting course project topics.
12	Each team completes project topic selection and begins preparing a preliminary project proposal.
14	Each team submits a 4-page preliminary project proposal .
14	The instructor and teaching assistants conduct a mid-term evaluation of each team's preliminary project proposal and provide feedback and guidance to each team. Students then prepare their final course project based on the feedback.
16	Each team must record and submit an approximately 10-minute video of oral presentation for the course project in advance. All teams will present their posters, and the order of evaluation will not be announced in advance. Note: All teams must submit their presentation slides and recorded videos before the poster presentation begins. The course instructor and teaching assistants will evaluate and rank all team presentations and posters in a fair and impartial manner.
17	Students submit the final course project paper (an updated 10-page paper. Note: co-authors are listed without ranking, but each co-author's responsibilities and contributions must be specified in the report).
18	The instructor and teaching assistants conduct a final evaluation of the course project papers.

The grading breakdown for the course project is as follows: mid-term evaluation (10%) + oral presentation performance (20%) + poster presentation performance (30%) + course project paper (40%). The grading for the preliminary project proposal and the project paper is assisted by the teaching assistant and is finally determined by the instructor. The score for the oral presentation

performance and the score for the poster presentation performance are obtained through a weighted average from the instructor (60%) and teaching assistants (40%).

The overall assessment breakdown is shown in the table below:

1	Course Project	30%
2	Homework Assignments	30%
3	Final Exam	30%
4	In-class quiz	5%
5	Attendances and Classroom Performance	5%
	Total	100%

Tests and submitted assignments are primarily in English. There are 6 homework assignments, which include Q&A, calculation, and programming tasks, etc. Collaboration is not allowed. Use of generative AI tools such as ChatGPT or DeepSeek need to be disclosed and documented the versions. Each homework assignment carries equal weight. In-class quiz (closed-book) is given 1 time, in week 2, covering material in week 1. Grades and comments for the quiz and homework assignments are provided within four weeks.

Attendance is checked using QR codes and/or randomly checked by selecting students to answer questions in class; if a student is absent without prior notice, 1% is deducted from their overall grade, up to a maximum of 5%. Students who have excused absences may have no attendance points deducted as appropriate. Students who do not actively participate in class will be deducted 1% of their overall grade. Students who seriously disrupt classroom discipline will have at most 5% deducted from their final course grade.

Each student has a one-week grace period in total for all their submissions (including homework assignments, the project proposal report, the course project paper). For each additional day of delay, approximately one point (i.e., 1% of the overall grade) will be deducted from the submission. Any period of less than one day will be counted as one full day. Homework assignments may have bonus points or questions.

The final overall score will be converted from a percentage to a letter grade. The conversion relationship is shown in the table below:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	F	EXC	P	NP	N
Grade Point	4.0	4.0	3.7	3.3	3.0	2.7	2.3	2	1.7	0	N/A	N/A	N/A	N/A
Reference Percentage-to-Grade Conversion Scale	95-100	90-94	85-89	80-84	75-79	70-74	67-69	63-66	60-62	0-59	As per the course syllabus	>=60	<60	No grade record

It is recommended that if the class size exceeds 30 students, no more than 40% should receive an A- or above, and the failure rate should not exceed 10%.

7. Textbook & Recommended Reading

(1) Textbook

Recommended Textbook 1:

*Book Name: Fundamentals of Biostatistics	* Authors: Bernard Rosner	Translator:	*ISBN: 9781305268920
* Publisher: Cengage Learning	*Publication Month: 2015.08	* Version: 8	

Recommended Textbook 2:

*Book Name: 医学统计学	* Authors: 李晓松	Translator:	*ISBN: 9787040540468
* Publisher: 高等教育出版社	*Publication Month: 2020.05	* Version: 4	

Recommended Textbook 3:

*Book Name: 医学统计学	* Authors: 颜艳、王彤	Translator:	*ISBN: 9787117303859
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* Publisher: 人民卫生出版社	*Publication Month: 2021.01	* Version: 5	
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(2) Recommended Reading

Recommended Reading 1:

*Book Name: 医学统计学实习指导	*Author: 赵星、张菊英	Translator:	*ISBN: 9787040549386
*Publisher: 高等教育出版社	*Publication Month: 2020.8	*Version: 4	

Recommended Reading 2:

Book Name: 医学统计学习题解答	Author: 颜艳、王彤	Translator:	ISBN: 9787117337465
Publisher: 人民卫生出版社	Publication Month: 2022.10	Version: 5	

Recommended Reading 3:

Book Name: Python 医学实用统计分析	Authors: 潘兴强、陈根浪	Translator:	ISBN: 9787117341417
Publisher: 人民卫生出版社	Publication Month: 2023.01	Version: 1	

Recommended Reading 4:

Book Name: Python 医学数据分析入门	Authors: 赵军、刘文婷	Translator:	ISBN: 9787115575432
Publisher: 人民邮电出版社	Publication Month: 2022.01	Version: 1	

Recommended Reading 5:

Book Name: Probabilistic Machine Learning: An Introduction	Authors: Kevin Patrick Murphy	Translator:	ISBN: 9780262046824/ 9780262369305
Publisher: The MIT Press	Publication Month: 2022.03	Version: 1	

8. Academic Integrity

This course places a strong emphasis on academic integrity. Plagiarism, cheating, and other forms of academic misconduct are strictly prohibited.

“In learning, research, internships, practical training, and other academic activities, students shall uphold academic ethics and integrity, protect intellectual property rights, and embrace a scientific spirit characterized by innovation, truth-seeking, and pragmatism. Students shall strive to cultivate a rigorous, honest, self-disciplined, and collaborative approach to scholarship, becoming defenders of a sound academic environment, committed practitioners of rigorous scholarship, and inheritors of high standards of academic ethics.”

For further details, please refer to the ShanghaiTech University Regulations on Student Academic Integrity and Its Administration (Trial). Any additional course-specific requirements established by the instructor should be listed in detail.

9. Other Information (Optional)