

# STAT 372 Open Textbook (R)

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# Contents

<b>1</b>	<b>Preamble</b>	<b>5</b>
<b>2</b>	<b>Introduction</b>	<b>7</b>
	Learning Outcomes . . . . .	7
2.1	Introduction . . . . .	7
2.2	Some Examples . . . . .	7
2.3	Multivariate Methods Covered in STAT 372 . . . . .	7
2.4	Review: Univariate Analysis . . . . .	7
	Revisit Learning Learning Outcomes . . . . .	8
<b>3</b>	<b>Matrix Algebra</b>	<b>9</b>
	Learning Outcomes . . . . .	9
3.1	Some Basic Operations on Vectors . . . . .	9
3.2	Basic Operations on Matrix . . . . .	9
3.3	Eigenvalues and Eigenvectors . . . . .	9
3.4	Spectral (Eigen) Decomposition . . . . .	9
3.5	Singular-Value Decomposition . . . . .	9



# Chapter 1

## Preamble

Some text here to generally describe the contents of the book - placeholder

```
#install.packages("bookdown")  
#install.packages("knitr")  
#tinytex::install_tinytex()  
library(knitr)  
library(bookdown)
```



# Chapter 2

## Introduction

Placeholder

### Learning Outcomes

#### 2.1 Introduction

#### 2.2 Some Examples

Example 1: Storm Survival of Sparrows

Example 2: Spam or E-mail?

Example 3: Classification of Iris

#### 2.3 Multivariate Methods Covered in STAT 372

#### 2.4 Review: Univariate Analysis

##### 2.4.1 Random Variable and Its Distribution

##### 2.4.1.1 Discrete Random Variable

Definition

## **Expected Value and Variance of a Random Variable or a Function of a Random Variable**

**Definition**

**Definition**

### **2.4.2 Properties of Expectation and Variance**

### **2.4.3 Continuous Random Variables**

#### **2.4.3.1 Expected Values and Variance for Continuous Random Variables**

## **Revisit Learning Learning Outcomes**



## Chapter 3

# Matrix Algebra

Placeholder

### Learning Outcomes

**3.1 Some Basic Operations on Vectors**

**3.2 Basic Operations on Matrix**

**3.3 Eigenvalues and Eigenvectors**

**3.4 Spectral (Eigen) Decomposition**

**3.5 Singular-Value Decomposition**