

Sponsored by Lavu Educational Society, Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad. Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301 Phone: +91 96529 10002/3

## DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE YEAR AND SEMESTER (II-I)

### **SUBJECT: DISCRETE MATHEMATICS – AIDC201**

After going through this course the student got a thorough knowledge on

CO. No	COURSE OUTCOMES	BT Level
AIDC201.1	Ability to understand and construct precise mathematical proofs.	1
AIDC201.2	Ability to use logic and set theory to formulate precise statements.	5
AIDC201.3	Ability to analyze and solve counting problems on finite and discrete structures.	4
AIDC201.4	Ability to describe and manipulate sequences.	4
AIDC201.5	Ability to apply graph theory in solving computing problems.	4

### **MAPPING:**

CO. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC201.1	2	3	3	3	1	1	-	2	2	3	2	-	2	3	-
AIDC201.2	2	2	3	3	2	1	2	1	2	-	1	3	2	3	2
AIDC201.3	2	2	3	3	3	1	1	1	2	2	1	3	1	2	2
AIDC201.4	1	3	3	3	3	1	3	-	2	1	2	1	-	1	1
AIDC201.5	2	3	2	3	2	1	1	2	2	2	1	2	1	1	3
Average	1.8	2.6	2.8	3	2.2	1	1.4	1.2	2	1.4	1.4	1.8	1.2	2.2	1.6



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## **SUBJECT: DATA STRUCTURES (AIDC202)**

Upon completion of the course the students get an idea of:

CO. No	COURSE OUTCOME	BT LEVEL
AIDC202.1	Develop a program using linear data structures such as array and circular queue	3
AIDC202.2	Develop a program for basic operations of Stack and its applications	3
AIDC202.3	Construct a program using Non-linear data structures and theirapplications such as trees and graphs	3
AIDC202.4	Construct a program using linear data structures for Linked Lists	3
AIDC202.5	Ability to Implement searching and sorting algorithms	3

### **MAPPING**

CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PS01	PS02	PSO3
<b>AIDC202.1</b>	3	2	1	1	-	2	1	2	1	3	-	1	3	2	3
<b>AIDC202.2</b>	3	2	1	1	2	-	1	-	1	-	2	1	3	3	3
AIDC202.3	3	2	1	1	-	2	-	2	2	3	2	1	3	3	3
<b>AIDC202.4</b>	3	2	1	1	2	-	1	1	2	-	-	1	2	3	3
AIDC202.5	3	2	1	1	2	3	2	1	-	1	1	1	2	3	3
Avg.	3	2	1	1	1.2	1.4	1	1.2	1.2	1.4	1	1	2.6	2.8	3



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### **SUBJECT: MSF AIDC203**

CO. No.	COURSE OUTCOMES	BT Level
AIDC203.1	Apply the number theory concepts to cryptography domain	4
AIDC203.2	Apply the concepts of probability and distributions to some case studies	4
AIDC203.3	Correlate the material of one unit to the material in other units	3
AIDC203.4	Resolve the potential misconceptions and hazards in each topic of study.	3
AIDC203.5	Known about the logic families and realization of logic gates.	1

## Mapping Course Outcomes leading to the Achievement of the Program Outcomes

СО	P01	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC203.1	2	2	3	3	1	1	2	1	2	1	1	2	1	2	2
AIDC203.2	1	2	3	3	1	1	3	1	2	1	1	1	2	2	3
AIDC203.3	2	2	3	3	3	-	2	2	2	-	2	1	2	-	2
AIDC203.4	1	1	3	3	1	1		3	2	2	1	3	1	2	-
AIDC203.5	1	3	2	3	2	1	1	1	2	3	2	1	1	3	1
Average	1.4	2	2.8	3	1.6	0.8	1.6	1.6	2	1.4	1.4	1.6	1.4	1.8	1.6



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## **Subject: Computer Organization & Architecture (AIDC204)**

Upon completion of the course the students get an idea of:

CO. No.	COURSE OUTCOMES	BT Level
AIDC204.1	Understand the basics of instructions sets and their impact on processor design.	5
AIDC204.2	Demonstrate an understanding of the design of the functional units of a digital computer system	5
AIDC204.3	Evaluate cost performance and design trade-offs in designing and constructing a computer processor including memory	2
AIDC204.4	Design a pipeline for consistent execution of instructions with minimum hazards	1
AIDC204.5	Recognize and manipulate representations of numbers stored in digital computers	5

## Mapping:

CO. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC204.1	3	3	3	1	2	-	2	2	1	2	1	2	3	3	3
AIDC204.2	2	2	3	2	2	1	1	3	2	-	1	3	3	2	3
AIDC204.3	3	3	3	2	2	-	1	2	2	1	1	3	2	3	3
AIDC204.4	2	2	3	1	3	2	-	2	1	-	1	2	2	1	3
AIDC204.5	3	3	3	2	1	1	2	-	2	1	1	3	3	3	3
Average	2.6	2.6	3	1.6	2	0.5	1.2	1.8	1.6	0.8	1	2.6	2.6	2.4	3



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## **SUBJECT: PYTHON PROGRAMMING (AIDC205)**

Upon completion of the course the students get an idea of:

CO. No.	Course Outcomes	BT Levels
AIDC205.1	Examine Python syntax and semantics and be fluent in the use of Python flow control and functions.	2
AIDC205.2	Demonstrate proficiency in handling Strings and File Systems.	2
AIDC205.3	Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular Expressions.	4
AIDC205.4	Interpret the concepts of Object-Oriented Programming as used in Python.	5
AIDC205.5	Implement exemplary applications related to Network programming, WebServices and Databases in Python.	6

### **Mapping**

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC205.1	3	2	2	2	1	1	1	1	2	1	2	1	2	2	3
AIDC205.2	2	3	2	2	1	1	1	1	2	1	2	1	2	2	3
<b>AIDC205.3</b>	3	2	2	2	2	2	1	1	3	1	3	1	2	3	3
<b>AIDC205.4</b>	3	2	2	2	2	2	1	1	1	1	3	1	3	3	3
AIDC205.5	3	2	1	2	2	2	1	1	1	1	1	1	3	3	3
Average	2.7	2.2	2	2	1.5	1.5	1	1	1.8	1	2.2	1	2.4	2.6	3



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## SUBJECT: BUSINESS ECONOMICS AND FINANCIAL ANALYSIS (AIDC205)

Upon completion of the course the students get an idea of:

CO. No.	Course Outcomes	BT Levels
AIDC205.1	The students will understand the various Forms of Business and the impact of economic variables on the Business.	2
AIDC205.2	Understand the elasticity of the demand of the product, different types, and measurement of elasticity of demand and factors influencing on elasticity of demand and supply	2
AIDC205.3	Recognize the Production function, features of Iso-Quants and Iso-Costs, Market Structure, Pricing aspects are learnt.	1
AIDC205.4	The Students can study the firm's financial position by analyzing the Financial Statements of a Company.	4
AIDC205.5	Evaluate different types of financial ratios knowing liquidity, solvency and profitability position of business.	5

## Mapping:

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC205.1	1	2	2	-	1	2	1	2	2	1	2	2	2	2	2
AIDC205.2	1	-	2	2	-	2	1	2	2	1	2	2	1	2	2
AIDC205.3	2	1	1	1	1	1	2	1	2	1	3	-	2	2	2
AIDC205.4	2	1	1	1	2	1	2	1	2	1	3	-	2	1	2
AIDC205.5	2	1	1	1	2	1	2	1	2	1	3	1	-	1	2
Avg.	1.6	1	1.4	1	1.2	1.4	1.6	1.4	2	1	2	1	1.4	1.6	2



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## **SUBJECT: DATA STRUCTURES LAB(AIDC206)**

Upon completion of the course the students get an idea of

CO. No	COURSE OUTCOME	BT LEVELS
AIDC206.1	Implement linear and non linear data structures using linked list.	1
AIDC206.2	Apply various data structures such as stack, queue and tree to solve the Problems	4
AIDC206.3	Implement various searching and sorting techniques	1
AIDC206.4	Analyze the complexity of the algorithms	3
AIDC206.5	Choose appropriate data structures while designing the applications	2

### **MAPPING**

CO. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC206.1	2	2	3	1	1	2	2	2	1	2	3	2	1	2	2
AIDC206.2	2	2	3	2	3	3	2	2	2	2	3	2	1	2	2
AIDC206.3	3	2	3	1	2	3	3	2	2	2	2	2	2	2	2
<b>AIDC206.4</b>	3	2	1	2	1	1	3	2	3	1	1	2	2	2	2
AIDC206.5	2	2	-	1	3	1	1	2	2	1	3	2	2	2	2
Average	2.4	2	2	1.4	2	2	2.2	2	3	1.6	2.4	2	1.6	2	2



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### **SUBJECT: PYTHON PROGRAMMING LAB-AIDC208**

After going through this course the student got a thorough knowledge on

CO. No.	COURSE OUTCOME	ВТ
		Level
AIDC208.1	Students will be able to describe the number, math functions, strings, list, tuples and dictionaries in	1
	python.	
AIDC208.2	Students will be able to acquire the skills to apply different decision-making statements and functions	3
	in python.	
AIDC208.3	Students will be able to interpret object-oriented programming in python.	5
AIDC208.4	Students will be able to develop skill to understand and summarize different file handling operations.	6
AIDC208.5	Students will be able to demonstrate the ability to design GUI applications in python and evaluate	3
	different database operations.	

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC208.1	3	2	2	3	3	2	3	2	2	3	2	2	2	3	2
AIDC208.2	3	2	3	3	2	3	2	2	3	3	2	2	3	3	3
AIDC208.3	3	2	3	2	3	3	3	2	2	3	2	2	2	2	3
AIDC208.4	3	2	3	2	2	2	2	2	3	-	-	2	3	3	3
AIDC208.5	3	2	3	-	3	3	2	2	2	3	-	2	3	3	3
Average	3	2	2.8	2	2.6	2.6	2.4	2	2.4	2.4	1.2	2	2.6	2.8	2.8



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## **SUBJECT: GENDER SENSITIZATION (AIDC209)**

Upon completion of the course the students get an idea of:

CO. No.	Course Outcome	Bloom's level
AIDC209.1	Apply the concepts of probability and distributions tosome case studies. Apply the concepts of discreteprobability distributions.	3
AIDC209.2	Apply the concepts of continuous probability distributions.	3
AIDC209.3	Assess the sampling theory and making inferences.	5
AIDC209.4	Correlate the material of one unit to the material inother units.	2
AIDC209.5	Resolve the potential misconceptions and hazards ineach topic of study.	1

#### **MAPPING**

CO. No.	P01	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PSO3
AIDC209.1	3	2	3	-	3	1	-	1	1	-	-	2	2	1	3
AIDC209.2	3	2	2	2	-	-	2	-	2	1	-	2	2	2	3
AIDC209.3	3	2	3	1	2	2	-	2	-	2	3	-	1	2	3
AIDC209.4	3	2	2	-	1	-	1	1	1	2	1	1	2	2	3
AIDC209.5	3	2	3	3	1	1	3	1	1	-	3	-	1	1	3
AVERAGE	3	2	2.5	1.2	1.4	0.8	1.2	1	1	1	1.4	1	1.6	1.6	3



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## **AIDS (2-2)**

### **Subject: Formal Languages and Automata Theory (AIDC210)**

Upon completion of the course the students get an idea of:

CO. No.	Course Outcomes	BT Levels
AIDC210.1	Able to understand the concept of abstract machines and their power to recognize the languages.	5
AIDC210.2	Able to employ finite state machines for modeling and solving computing problems.	4
AIDC210.3	Able to design context free grammars for formal languages.	1
AIDC210.4	Able to distinguish between decidability and undecidability.	3
AIDC210.5	Able to gain proficiency with mathematical tools and formal methods.	4

## Mapping:

CO. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC210.1	3	3	2	1	2	2	2	1	1	2	1	3	3	3	3
AIDC210.2	-	3	1	2	1	1	2	2	2	-	1	2	3	2	3
AIDC210.3	2	2	1	2	2	-	1	1	2	1	1	2	3	2	3
<b>AIDC210.4</b>	1	2	2	2	2	2	-	2	1	-	1	2	2	1	3
AIDC210.5	2	2	2	2	2	1	2	1	2	1	1	3	2	3	3
Average	1.6	2.4	1.6	1.8	1.8	1.2	1.4	1.4	1.6	0.8	1	2.4	2.6	2.2	3



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## **SUBJECT: SOFTWARE ENGINEERING (AIDC211)**

Upon completion of the course the students get an idea of:

CO. No.	COURSE OUTCOMES	BT
		Level
AIDC211.1	Outline the framework activities for a given project.	1
AIDC211.2	Examine Right process model for a given project.	2
AIDC211.3	Analyze various system models for a given Context	3
AIDC211.4	Understand various testing techniques for a given project.	5
AIC211.5	Identify various risks in project development.	5

### MAPPING:

CO. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC211.1	3	3	3	1	2	3	2	2	1	2	1	2	3	3	3
<b>AIDC211.2</b>	2	3	3	2	2	1	1	3	2	2	1	3	3	2	3
AIDC211.3	2	3	3	2	2	-	1	2	2	1	1	3	2	3	3
<b>AIDC211.4</b>	2	2	3	3	3	2	-	2	2	-	1	2	2	2	3
AIDC211.5	3	3	3	2	2	1	2		2	1	1	3	3	3	3
Average	2.8	2.8	3	2	2.2	1.4	1.2	1.8	1.8	0.8	1.2	2.6	2.6	2.6	3



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### **SUBJECT: OPERATING SYSTEM – AIDC212**

After going through this course the student gets a thorough knowledge on

CO. No.	COURSE OUTCOMES	BT
		Level
AIDC212.1	Understand the concepts of OS, the basic principles used in the design of modern operating system and process.	2
AIDC212.2	Understand the concepts of threads and mechanisms for synchronization.	2
AIDC212.3	Understand the concepts related to deadlock and memory management.	2
AIDC212.4	Understand the concepts of virtual memory management, file system.	2
AIDC212.5	Understand the concepts of secondary storage structure, protection andcase study of Linux operating system.	2

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC212.1	1	2	-	2	2	1	3	2	2	1	1	2	2	2	3
<b>AIDC212.2</b>	2	2	3	1	2	1	3	2	3	1	2	2	3	2	1
<b>AIDC212.3</b>	2	1	2	3	2	3	3	2	2	2	1	2	2	2	1
<b>AIDC212.4</b>	2	2	2	2	1	2	3	2	3	2	2	2	1	2	2
<b>AIDC212.5</b>	1	1	2	2	1	2	2	1	2	2	3	2	1	2	3
Average	1.6	1.6	2.25	2	1.6	1.8	2.8	1.8	2.4	1.6	1.8	2	1.8	2	2



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### **SUBJECT: DATABASE MANAGEMENT SYSTEM-AIDC213**

After going through this course the student got a thorough knowledge on

CO. No.	Course Outcomes	BT Levels
AIDC213.1	Understand data models to design a database	2
AIDC213.2	Illustrate the conceptual design for Large enterprises	2
AIDC213.3	Formulate SQL queries and integrity constraints over relations	6
AIDC213.4	Apply normalization on database for eliminating redundancy	3
AIDC213.5	Understand transaction properties, concurrency control and recovery techniques and Explain various data storage and security mechanisms	2

CO. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12	PSO1	PSO2	PSO3
AIC213.1	3	2	2	3	3	1	2	1	3	2	3	2	3	3	1
AIC213.2	3	2	3	2	2	2		2	1	2	3	2	1	3	1
AIC213.3	3	2	2	1	2	2	3	1	1	2	2	2	1	3	1
AIC213.4	3	2	3	1	3	1	3	2	3	2	1	3	2	2	1
AIC213.5	3	2	2	3	3			1	3	2	3	2	3	2	1
Average	3	2	2.4	2	2.6	1.2	1.6	1.4	2.2	2	2.4	2.2	2	2.6	1



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## **SUBJECT: JAVA PROGRAMMING - (AIDC214)**

After going through this course the student gets a thorough knowledge on

CO. No.	COURSE OUTCOMES	Bloom Level
AIDC214.1	Able to solve real world problems using OOP techniques	3
AIDC214.2	Able to understand the use of abstract classes.	2
AIDC214.3	Able to solve problems using java collection framework and I/o classes	3
AIDC214.4	Able to develop multithreaded applications with synchronization.	5
AIDC214.5	Able to develop applets for web applications, Able to design GUI based applications	5

CO. No	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC214.1	3	2	2	2	2	1	1	1	2	2	2	3	1	1	1
AIDC214.2	2	3	2	2	2	2	1	2	2	2	1	3	2	2	2
AIDC214.3	3	3	2	2	3	2	1	2	2	2	3	3	2	2	2
AIDC214.4	3	3	2	2	3	2	1	2	3	2	2	2	2	3	2
AIDC214.5	2	3	2	2	2	1	1	1	2	2	2	3	1	1	1
Average	2.6	2.8	2	2	2.4	1.6	1	1.6	2.2	2	2	2.8	1.6	1.8	1.6



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### **SUBJECT: OPERATING SYSTEM LAB – AIDC215**

After going through this course the student got a thorough knowledge on

CO. No.	COURSE OUTCOME	BT LEVEL
AIDC215.1	Implement the basic command of OS and will execute the various system calls.	3
AIDC215.2	Implement the process synchronization problem using semaphore.	3
AIDC215.3	Implement CPU scheduling algorithm for process scheduling and deadlock management techniques.	3
AIDC215.4	Implement memory management techniques.	3
AIDC215.5	Implement file storage allocation techniques.	3

CO. No	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PS03
AIDC215.1	2	3	3	3	2	2	2	2	1	2	2	3	3	2	3
AIDC215.2	2	2	2	2	2	2	2	2	2	2	1	3	3	2	3
AIDC215.3	2	3	3	3	2	1	1	1	1	2	1	3	3	2	3
AIDC215.4	2	1	2	3	2	3	3	2	2	1	2	3	3	2	3
AIDC215.5	2	2	2	3	2	3	3	2	1	1	2	3	3	2	3
Average	2	2.2	2.4	2.8	2	2.2	2.2	1.8	1.4	1.6	1.6	3	3	2	3



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### SUBJECT: DATABANE MANAGEMENT SYSTEMS LAB-AIDC216

After going through this course the student got a thorough knowledge on

CO. No.	COURSE OUTCOME	BT Levels
AIDC216.1	Illustrate the basic DDL commands	2
AIDC216.2	Illustrate DCL and DML commands.	2
AIDC216.3	Demonstrate SQL queries using SQL operators.	5
AIDC216.4	Explain the concept of relational algebra.	1
AIDC216.5	Implement various queries using date and group functions and elaborate nested queries. Construct views, cursor and triggers.	5

CO. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PS03
AIDC216.1	3	2	2	2	1	1	2	3	2	1	2	3	3	2	3
AIDC216.2	3	3	3	2	3	2	1	3	2	2	-	2	3	2	3
AIDC216.3	3	3	2	1	3	2	2	2	1	2	2	1	2	2	3
AIDC216.4	3	3	3	2	3	2	1	2	1	1	2	2	2	2	3
AIDC216.5	3	3	3	1	3	1	1	2	-	-	1	1	2	2	3
AVG	3	2.8	2.6	1.6	2.6	1.6	1.4	2.4	1.2	1.2	1.4	1.8	2.4	2	3



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### SUBJECT: JAVA PROGRAMMING LAB-AIDC216

After going through this course the student got a thorough knowledge on

CO. No.	COURSE OUTCOME	BT
		Level
AIDC216.1	Able to write programs for solving real world problems using java collection frame work.	2
AIDC216.2	Able to write programs using abstract classes.	3
AIDC216.3	Develop Simple Java Programs using inheritance and Exception Handling.	3
AIDC216.4	Develop Multi-threading Programming and Interfaces.	6
AIDC216.5	Develop GUI applications using Applet classes, Swing components and Event handling programs.	6

CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3
AIDC216.1	3	2	2	2	2	2	1	2	1	3	-	3	2	3	2
AIDC216.2	3	2	2	2	3	2	3	2	2	3	2	3	3	3	3
AIDC216.3	3	3	2	2	2	3	3	2	2	2	2	3	2	3	3
AIDC216.4	2	3	3	1	3	2	2	2	3	1	1	3	3	3	3
AIDC216.5	2	3	3	2	3	-	-	2	2	2	2	3	3	3	3
Average	2.6	2.6	2.4	18	2.6	1.8	1.8	2	2	2.2	1.4	3	2.6	3	2.8