

UNIVERSITIES OF COMPUTER STUDIES
THE SYLLABUS FOR 2018-2019 ACADEMIC YEAR
(Five-year-academic Plan)

English

Second Year (B.C.Sc./B.C.Tech.)

Objectives: To improve students' proficiency in four skills and help them complete preparation for the IELTS test.

Students Learning Outcomes: Getting motivation in their language learning and applying what they have learnt in their real life situation

Topic covered: Four skills with grammar, vocabulary input and skills practice to help students to deal successfully with the tasks in each section

Credit unit: 3 credits

(a) Course Description

Reading, Writing, Listening, Speaking

Unit -1 Starting somewhere new; Unit-2 It's good for you! ; Vocabulary & Grammar Review Units 1&2; Unit-3 Getting the message across; Unit-4 New media; Vocabulary & Grammar Review Unit 3&4; Unit -5 The world in our hands; Unit-6 Making money, spending money; Vocabulary & Grammar Review Units 5&6; Unit- 7 Relationships; Unit- 8 Fashion and design ;Vocabulary & Grammar Review Units 7&8.

(b) Syllabus

Reading, Writing, Listening, Speaking

Unit -1 Starting somewhere new; Unit-2 It's good for you! ; Vocabulary & Grammar Review Units 1&2; Unit-3 Getting the message across; Unit-4 New media; Vocabulary & Grammar Review Unit 3&4; Unit -5 The world in our hands; Unit-6 Making money, spending money; Vocabulary & Grammar Review Units 5&6; Unit- 7 Relationships; Unit- 8 Fashion and design ;Vocabulary & Grammar Review Units 7&8.

(Teachers should emphasize on Speaking and Listening Activities in IELTS Text Book.)

(c) Textbooks

- 1. Complete IELTS (Bands 5-6.5) B2 Student's Book by Guy Brook-Hart and Vanessa Jakeman**

(d) References

- 1. Complete IELTS (Bands 5-6.5) B2 Student's Book by Guy Brook-Hart and Vanessa Jakeman**

**2018-19 Academic Year
English Department
Course Description
Second Year (Second Semester)**

Department Code:	ENG
Subject Code:	E 202
Course Title	Complete IELTS Band (5-6.5)
Course Coordinator	Daw Aye Aye Khine
Credit Unit	3 credits (lecture 2+ Tuto 1+ Lab 1) 1 Lecture = 1 credit 1 Tutorial= 0.5 credit 1 Lab = 0.5 credit
Prerequisite/s	None
Objectives	1. to motivate students in English Language learning 2. to develop four skills in English Language learning
Student Learning Outcomes	Students are motivated in their language learning and are positioned right at the edge of their competence are pushing it forward.
Topics Covered	1. Proficiency skill based on CLT 2. Four skills with grammar and vocabulary input are informed by publications related to the Common European Framework of Reference.
Text book and Reference	Complete IELTS Band (5-6.5) by Guy Brook-Hart and Vanessa Jakeman
Lesson Plan	First Semester - 1-4 units Second Semester - 5-8 units
Assessment Plan	Second Term - Exam (50%) Listening Test (10%) Speaking (10%) (Assignment) Writing (10%) Attendance (10%) Quiz (10%)

UNIVERSITIES OF COMPUTER STUDIES
LECTURE PLAN FOR 2018-2019 ACADEMIC YEAR
B.C.Sc. / B.C.Tech. Second Year

E English

Second semester

Textbooks: Complete IELTS Band (5-6.5) by Guy Brook-Hart and Vanessa Jakeman

Period : 15 weeks

No.	Chapter	Page	Period
1	Unit 5 The World in our hands	48 to 56	3.5
2	Unit 5 The World in our hands	48 to 56	3.5
3	Unit 5 The World in our hands	48 to 56	3.5
4	Unit 6 Making money, spending money	57 to 65	3.5
5	Unit 6 Making money, spending money	57 to 65	3.5
6	Unit 6 Making money, spending money	57 to 65	3.5
7	Vocabulary and Grammar Review Unit 5 & 6	66 to 67	3.5
8	Unit 7 Relationships	68 to 76	3.5
9	Unit 7 Relationships	68 to 76	3.5
10	Unit 7 Relationships	68 to 76	3.5
11	Unit 8 Fashion and Design	77 to 85	3.5
12	Unit 8 Fashion and Design	77 to 85	3.5
13	Unit 8 Fashion and Design	77 to 85	3.5
14	Vocabulary and Grammar Review Unit 7 & 8	86 to 87	3.5
15	Revision		3.5

CST -201 (Advanced Java Programming)

Course Description

Course Code Number	CST-201 Second Semester	Course Title	Advanced Java Programming
Semester Hours	4 Hours	No of Credit Units	3
Prerequisite	Basic Java Programming, Database Concept	Course Coordinator	Dr. KyarNyo Aye Lecturer

Course Objectives

- To explain how to develop client-server programs in Java.
- To learn and develop distributed Java applications using Remote Method Invocation (RMI)
- To know the fundamentals of Java Web application development features, such as the Java Servlet, Java Server Pages, and Java Standard Tag Library (JSTL).
- To develop a dynamic web application by the use of servlet, JSTL, JSP and database technology.
- To be able to develop a small web project independently.

Course Outline

The outline of the course covers the following topics:

- Networking Basics & Java Networking using Sockets
- Understanding RMI
- Web-based architecture
- Java Server Page (JSP) technology
- Java Servlets technology
- Java Standard Tag Library (JSTL) technology
- JDBC and Database Programming

Learning Outcomes

After the completion of this course, the students will be able

- to recognize and understand both the elements and characterizing of client-server architecture in java programming.
- to know the architecture of RMI, understand how to serialize an object, create and implement the class that can be used to create remote server objects.
- to know how to design and build a web application using Servlet, JSP, JSTL
- to know how to interact with databases and how to plan web development.
- to gain the skills and project-based experience needed for entry into web application.

Reference Materials

1. Java Server Programming (J2EE 1.4 Edition) Black Book (2006 Print) by Steven Holzner et al
2. Online Tutorials

Course Organization

Student participation in this course will involve the following activities:

1. Attending the lectures
2. Practical / Assignments
3. Test
4. Quiz
5. Project

Assessment Plan for the Course

Paper Exam 50 %

Assignment 10 %

Test /Quiz 15 %

Practical /Attendances 10 %

Project 15%

Period : 60 periods for 15 weeks (50 minutes for 1 period)

No	Chapter	Page	Period	Detailed Lecture
	Chapter 14: Networking with Java		6	The main objective of this chapter is to know the networking basics and how it is done with Java Sockets.
1.	Basics of Networking Sockets in Java Client-Server in Networking Internet Addressing Domain Name Service The URL class The URI class	629 - 636	2	
2.	Java Net API's The Networking interfaces and classes Creating and using Sockets Working with Datagrams	639-672	2	Explain with example programs
3.	Exercises & Discussion		1	
4.	Tutorial		1	
	Chapter 31: Understanding RMI		6	The main objective of this chapter is to know how network programming is done using RMI.
5.	Introduction to RMI (Remote Method Invocation) Client-Server Architecture	1337-1338	2	
6.	Implementing RMI - Writing an RMI Server - Designing a Remote Interface - Implementing a Remote Interface - Passing Objects in RMI	1339-1351	2	Explain with example programs

	- Implementing the Server's main method			
7.	- Creating a Client Program - Compiling and Running Example - Exercise	1352-1360	1	Explain with example programs
8.	Discussion & Tutorial		1	
	Chapter 1: Introducing to J2EE		2	This chapter intends the students to know the components of J2EE and how they work.
9.	- Introduction - Need for Enterprise Programming - The J2EE Advantage - Enterprise Architecture Types - Architecture of J2EE - Introducing J2EE Components - Introducing J2EE Containers - Types of J2EE Technologies -Discussion	3-15	2	
	Chapter 7: Introducing Web Containers		4	This chapter is intended the students to know the web application architecture and its components.
10.	- Introduction - Understanding the HTTP Protocol - Introducing Web applications and Web Containers	357-366	1	
11.	- Web application life cycle - Creating a web application	357-366	2	
12.	Tutorial & Discussion		1	
	Chapter 8: Understanding Servlet Programming		10	This chapter is intended the students to understand the servlet programming.
13.	- Introduction - Overview o Using Servlets o API o Features of API o What do Servlets look like	391-392	2	
14.	- Servlet Life-Cycle - Http Specific Servlets - Package javax.Servlet Description	393-402	3	
15.	- Servlet Configuration - Client-Server Servlet Programming - Servlet Life-Cycle - Understanding Response and Request	402- 430	2	Explain with example programs
16.	Discussion & Exercises		2	
17.	Tutorial		1	
	Chapter 9: Understanding Servlet Sessions		8	This chapter is intended the students to know how to handle sessions in web application.

18.	- What is a session? - Introducing Session Tracking - Session Tracking and Java Servlet API	449-468	2	
19.	- Demonstrating Session Life-Cycle with Cookies		3	Explain with example programs
20.	Discussion & Exercises		2	
21.	Tutorial		1	
	Chapter 10: Understanding of JSP and JSTL (Java Server Programming)		8	This chapter is intended the students to understand how to create the JSP pages and how it works.
22.	- Understanding Java Server Pages - Understanding the Page Life-Cycle	503-511	2	
23.	- JSP elements	511-540	3	Explain with example programs
24.	Discussion & Exercises		2	
25.	Tutorials		1	
	Chapter 6: JDBC and Database Programming (Java2 Black Book)		8	This chapter is intended the students to understand how to be familiar with SQL and relational databases and how to connect to relational data within JSP or servlets.
26.	- Introduction to JDBC Package		2	
27.	- Demonstrating example database programs in Servlets and JSP		2	
28.	Discussion & Exercises		2	
29.	Revision		2	
30.	Project		8	The last two weeks is intended to develop the small web project using Servlet, JSP, JSTL and Database Technology

Teaching Aids : Windows OS, Eclipse, jdk1.6 and above, Projector, White Board

CST-203 : Advanced Data Structure

Second Semester

Text Book:Data Structures & Algorithms in Java (2nd Edition) by Robert Lafore

Course Code	Course Title	Semester hours	No. of Credit Units
CST-203	Advanced Data Structure	4 hours	3
Prerequisite	Java		

Course Description

This course covers techniques for the data structure and algorithm with java. Topics include: Bubble Sort, Selection Sort, Insertion Sort, Recursion, Binary Trees, Hash Tables, Heaps, Graphs.

Course Aim

The aim of this course:

- To understand algorithms and its analysis procedure.
- To design and implement various data structure algorithms.
- To introduce various techniques for representation of the data in the real world.
- To develop application using data structure algorithms.
- To compute the complexity of various algorithms

Learning Outcomes

Student will be able to

- Select appropriate data structures as applied to specified problem definition.
- Implement operations like searching, insertion, and deletion, traversing mechanism etc. on various data structures.
- Implement appropriate sorting/searching technique for given problem.
- Determine and analyze the complexity of given algorithms.

References:

1. Data Structures and Algorithms Analysis in Java (Third Edition) by Mark Allen Weiss (E-book)
2. Object-Oriented Data Structures using Java by Nell Dale, Daniel T. Joyce, Chip Weems

Course Organization

Student participation in the course will involve the following activities:

1. Attending the lectures
2. Tutorial
3. Assignment
4. Practical assignments
5. Moodle/Quiz
6. Exams

Assessment plan for the course

- | | |
|--------------------------|-----|
| 1. Paper Exam | 50% |
| 2. Attendances | 10% |
| 3. Tutorial | 10% |
| 4. Assignment | 10% |
| 5. Practical assignments | 10% |
| 6. Moodle/Quiz | 10% |

Period: 60 Periods(Lecture-45periods + Lab-15periods) for 15weeks (50 minutes for 1 period)

No.	Chapter	Page	Periods	Detail Lecture Plan
	Chapter 3Simple Sorting	77 to 111	8	
1	How Would You Do It? Bubble Sort Bubble Sort on the Baseball Players The Bubble Sort Workshop Applet Java Code for a Bubble Sort Efficiency of the Bubble Sort	78- 88	2	Detail Explain
2	Selection Sort Selection Sort on the Baseball Players The Selection Sort Workshop Applet Java Code for a Selection Sort Efficiency of the Selection Sort	89-95	2	Detail Explain
3	Insertion Sort Insertion Sort on the Baseball Players The InsertionSort Workshop Applet Java Code for a Insertion Sort Efficiency of the Insertion Sort Comparing the Simple Sorts	95-103 108	1	Detail Explain
4	Lab examples and exercises		2	
5	Questions Chapter Review	109-111	1	1 to 15
	Chapter 6Recursion	251 to 311	12	
6	Triangular Numbers Finding the n th Term Using a Loop Finding the n th Term Using Recursion	251-252 252-253 253-255	1	Brief Explain Detail Explain

7	The triangle.java Program What's Really Happening?	255-259	1	Detail Explain
8	Characteristics of Recursive Methods Is Recursion Efficient? Mathematical Induction Factorials	259-260 260-262	1	Detail Explain
9	A Recursive Binary Search Divide-and-Conquer Algorithms	268-269 272-273	1	Detail Explain
10	Mergesort Merging Two Sorted Arrays	279-282	2	Detail Explain
11	The MergeSort Workshop Applet The mergeSort.java Program Efficiency of the Mergesort Eliminating Recursion	285-287 287-294 294	1	Trace the program Brief Explain
12	Lab examples and exercises		2	
13	Questions Chapter Review	310-311	1	1 to 6, 9, 11 to 15
14	Tutorial		1	
15	Moodle		1	
	Chapter 8 Binary Trees	366 to 424	16	
16	Why Use Binary Trees? What Is a Tree? Tree Terminology	366-370	1	Detail Explain
17	How Do Binary Search Trees Work? Representing the Tree in Java Code	371-376	1	Detail Explain
18	Finding a Node Java Code for Finding a Node Inserting a Node Java Code for Inserting a Node	376-381	2	Detail Explain
19	Traversing the Tree Inorder Traversal Java Code for Traversing Traversing a Three-Node Tree Traversing with the Workshop Applet Preorder and Postorder Traversals	381-388	3	Explain the codes for Preorder and Postorder Traversals
20	Finding Maximum and Minimum Values Deleting a Node The efficiency of Binary Trees	388-389 389-401 401-403	4	Detail Explain. For delete case, mainly explain delete operation with figures rather than Java Codes
21	Trees Represented as Arrays	403-404	1	Detail Explain
22	Lab examples and exercises		3	
23	Questions Chapter Review	423-424	1	2 to 13
	Chapter 11 Hash Tables	519 to 577	12	
24	Hash table Introduction to Hashing A Dictionary Hashing Collisions	519-552	3	Brief Explain

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	Clustering Quadratic Probing Double Hashing			
25	Separate Chaining Hash Functions Folding	552-566	3	Detail Explain
26	Hashing Efficiency	566-571	1	Detail Explain
27	Lab examples and exercises		2	
28	Questions Chapter Review	575-576	1	1 to 15
29	Tutorial		1	
30	Moodle		1	
	Chapter 12 Heaps	579 to 613	6	
31	Introduction to Heaps	580-582	1	Detail Explain
32	Removal Insertion	583-585	2	Detail Explain
33	Heap Sort The Efficiency of Heapsort	601-609 610	1	
34	Lab examples and exercises		1	
35	Questions Chapter Review	611-612	1	1 to 10
	Chapter 13 Graphs	615 to 668	6	
36	Introduction to Graphs Definitions	615-618	1	Detail Explain
37	Representing a Graph in a Program	619-621	1	Detail Explain
38	Depth-First Search	625-626	1	Detail Explain
39	Breadth-First Search	636-637	1	Detail Explain
40	Tutorial		1	
41	Moodle		1	