NAWAB SHAH ALAM KHAN COLEEG OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

LABORATORY IMPROVEMENT FOR FUTURE TRENDS (LIFT) - - -I

NAME OF THE LABORATORIES

S.No.	YEAR-SEM	NAME OF THE LAB
1.	IV B.TECH-ISEM	CASETOOL

A Guide for execution of Lab Courses

VISION OF THE INSTITUTE:

To be a leading institute of world class quality technical education with strong ethical values, preparing students for leadership in their fields for the dynamic and global careers, developing breakthrough environment for professional education and research.

MISSION OF THE INSTITUTE:

M1: To enable the students to develop into outstanding professionals with high ethical standards capable of creating , developing and managing local and global engineering enterprises
M2: To ensure quality assurance by fulfilling expectations of the society and industry with state of the art technology.
M3: To attract and retain knowledgeable, creative , motivated, and highly skilled individuals whose leadership and contributions uphold the college tenets of education through student–centric learning methodologies.
M4: To provide opportunities for deserving students of all communities.
M5: To promote all round personality development of the students through interactions with alumni and academia.

- M1: To provide adequate knowledge encompassing strong technical concepts and soft skills thereby inculcating sound ethics.
- M2: To provide a conducive environment to nurture creativity in teaching- learning process.
- M3: To identify and provide facilities which create opportunities for deserving students of all communities to excel in their chosen fields.
- M4: To strive and contribute to the needs of the society and the nation by applying advanced engineering and technical concepts

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VISION:

To produce quality IT professionals, with an ability to adapt to ever changing IT needs of local, national and international arena, through effective teaching & learning, interactions with alumni and industry

MISSION:

- M1: To provide a holistic learning environment for students through ethical practices.
- M2: To provide quality infrastructure through practical exposure to the latest technology requirements.
- M3: To train the students in soft skills to excel in placements and competitive exams at higher level the industry ready.
- M4: To have a healthy Industry - Institute interaction through faculty development programs, student internships, guest lectures and using latest teaching learning methodologies.
- M5: To provide effective platform to meet the industrial requirement and provide research-oriented environment for the faculty to meet the continuous societal needs.

PROGRAM SPECIFIC OUTCOMES (PSO's)

- Develop efficient information management systems using latest development tools catering to the globally changing requirements in multi-disciplinary domains
- Manage real time IT projects with consideration of human, financial, ethical and environmental factors and an understanding of policy implications.

1. **AIM OF THE LIFT**:

The main aim of the LIFT programme is to innovate, modify the existing facilities in labs, to create awareness among the students and develop Industry –Institution interactions and reach the standards in laboratories

2. **FUNCTIONS OF THE LIFT**:

I. To create better understanding concepts of LIFT and other lab related activities among the staff and lab technicians for better improvement.

II. To Arrange LIFT Presentations from each department about the lab activities by the staff handling the labs. (Lab Planners)

III. To Prepare GAP ANALYSIS: This involves collection of requirements from each lab of every department, information about expansion of labs, repairs and maintenance of labs etc.

IV. To arrange Industrial Visits/ Industrial training programs in coordination with concerned lab staff and Heads of the departments.

V. A Report on Shadow Engineering: This involves arrangement of Industrial and Practical learning, Submission of Industrial Visit report, Technical Survey reports and Market Survey of a product for development in laboratories.

VI. Verification of all the laboratories in every department by the LIFT Team along with the Principal and the concerned HODs, to check whether the activities are going according to LIFT guidelines, to check the Record Keeping, Lab Manuals and Viva sessions etc.

VII. Check for LEAD Experiments and its follow up.

VIII. Submission of proposals related to R&D, Project and Consultancy from lab staff to the Principal for further approvals.

LAB IMPROVEMENT FOR FUTURE TRENDS PROGRAMME (LIFT)

INDEX

CONTENTS:

1. OBJECTIVES AND RELEVANCE:

The main objective of the LIFT concept in lab course is to provide practical hands on experience for each student by providing them with good exposure to different experiments and to uplift the knowledge levels of the student, with different applications in various fields.

2. SCOPE:

The main scope of the LIFT lab course is to cover all the experiments as per the schedule given in the prescribed week wise periods. With this, a student can better understand the concepts and operating systems so that he could get better knowledge about each lab.

3. PREREQUISITES:

The basic level idea related to each experiment should be provided to the students before conducting main lab course. Following details are to be explained related to experiment:

1. Introduction to experiment – 30 min
2. The Operating of the equipment/instrument/software
3. Record of Experimental Results.
4. Sample Calculations / Executable Programs

4. SYLLABUS AS PER JNTUH:

The lab course should be planned as per the JNTUH syllabus. In this, LEAD experiments should also be included in the cycle of experiments.

5. (A) LAB SCHEDULE:

The lab schedule should be planned once in a week. The week wise scheduled experiment should be completed.

Batches	week-1	week-2	week-3	week-4	week-5	week-6
B1	Demo	Exp.1	Exp.2	Exp.10	Exp.9	Exp.8
B2	Demo	Exp.2	Exp.10	Exp.9	Exp.8	Exp.1
B3	Demo	Exp.10	Exp.9	Exp.8	Exp.1	Exp.2
B4	Demo	Exp.9	Exp.8	Exp.1	Exp.2	Exp.10
B5	Demo	Exp.8	Exp.1	Exp.2	Exp.10	Exp.9

(B) Scheme of Evaluation:

The scheme of evaluation for internal and external exams as follows:

LAB INTERNAL:							
Day to Day Evalution-15					**Internal Exam-10**		
Uniform	**Observation & Record**	**Performance Of the Experiment**	**Result**	**Viva**	**Write up**	**Execution & Results**	**Viva**
Marks-3	**Marks-3**	**Marks-3**	**Marks-3**	**Marks-3**	**Marks-4**	**Marks-3**	**Marks-3**
Total Marks-25							

LAB EXTERNAL:			
S.NO	Write up	Final Evaluation	Viva
1	**1. Aim 2. Procedure 3. Program 4. Expected output.**	**Based on correctness of the program and Results**	**Based on understanding of Experiment and theoretical questions in the related subjects**
Marks	**20**	**20**	**10**
Total Marks-50			

6. SUGGESTED BOOKS:

The suggested books should be recommended to the students as per the JNTUH syllabus prescribed.

7. WEBSITES (USEFUL LINKS):

The useful links should be provided to the students, where they can get an easy access to the knowledge of the experiment.

CASE TOOLS LAB

CONTENTS:

1. OBJECTIVES AND RELEVANCE

The main objective of the lab course Documenting user requirements using the UML notation and designing the software architecture before coding for provide good quality software.

2. SCOPE

The scope of this lab is to understand the how to designing the software architectures using the UML notations.

3. PREREQUISITES

This lab requires the basic knowledge about the basic building blocks of uml and uses of things and relationships in development of diagrams. Common uses of diagrams, cutting operations and basics of lubrication, different types of chips and different cutting operations.

4. SYLLABUS-JNTU

Main linkage of machine tools theory with lab experiments:

i. Introduction to Case Tools.

ii).Automatic Teller Machine Uml Diagrams

Description of ATM System

The software to be designed will control a simulated automated teller machine (ATM) having a magnetic stripe reader for reading an ATM card, a customer console (keyboard and display) for interaction with the customer, a slot for depositing envelopes, a dispenser for cash, a printer for printing customer receipts, and a key-operated switch to allow an operator to start or stop the machine. The ATM will communicate with the bank's computer over an appropriate communication link. (The software on the latter is not part of the requirements for this problem.) The ATM will provide service to one customer at a time. A customer will be required to insert an ATM card and enter a personal identification number (PIN) – both of which will be sent to the bank for validation as part of each transaction. The customer will then be able to perform one or more transactions. The card will be retained in the machine until the customer indicates that he/she desires no further transactions, at which point it will be returned – except as noted below.
The ATM must be able to provide the following services to the customer:

A. A customer must be able to make a cash withdrawal from any suitable account linked to the card. Approval must be obtained from the bank before cash is dispensed.
B. A customer must be able to make a deposit to any account linked to the card, consisting of cash and/or checks in an envelope. The customer will enter the amount of the deposit into the ATM, subject to manual verification when the envelope is removed from the

machine by an operator. Approval must be obtained from the bank before physically accepting the envelope.

C. A customer must be able to make a transfer of money between any two accounts linked to the card.
D. A customer must be able to make a balance inquiry of any account linked to the card.
E. A customer must be able to abort a transaction in progress by pressing the Cancel key instead of responding to a request from the machine.

The ATM will communicate each transaction to the bank and obtain verification that it was allowed by the bank. Ordinarily, a transaction will be considered complete by the bank once it has been approved. In the case of a deposit, a second message will be sent to the bank indicating that the customer has deposited the envelope. (If the customer fails to deposit the envelope within the timeout period, or presses cancel instead, no second message will be sent to the bank and the deposit will not be credited to the customer.)

If the bank determines that the customer's PIN is invalid, the customer will be required to re-enter the PIN before a transaction can proceed. If the customer is unable to successfully enter the PIN after three tries, the card will be permanently retained by the machine, and the customer will have to contact the bank to get it back.

If a transaction fails for any reason other than an invalid PIN, the ATM will display an explanation of the problem, and will then ask the customer whether he/she wants to do another transaction.

The ATM will provide the customer with a printed receipt for each successful transaction, showing the date, time, machine location, type of transaction, account(s), amount, and ending and available balance(s) of the affected account ("to" account for transfers).

The ATM will have a key-operated switch that will allow an operator to start and stop the servicing of customers. After turning the switch to the "on" position, the operator will be required to verify and enter the total cash on hand. The machine can only be turned off when it is not providing any service to a customer. When the switch is moved to the "off" position, the machine will shut down, so that the operator may remove deposit envelopes and reload the machine with cash, blank receipts, etc.

EXPERIMENT: 1

Name of the experiment: Class diagram for ATM System
AIM: To design and implement class diagram for ATM system
Applications:
The purpose of the class diagram is to model the static view of an application

EXPERIMENT: 2
NAME OF EXPERIMENT: Use case diagram for ATM System.
AIM: To design and implement Use case diagram for ATM System.

Applications:
The purpose of use case diagram is to capture the dynamic aspect of a system
Used to gather requirements of a system. Used to get an outside view of a system

To identify external and internal factors influencing the system.

Shows the interacting among the requirements are actors

EXPERIMENT: 3
Name of the experiment: Sequence diagram for ATM System
AIM: To design and implement Sequence diagram for ATM System
Applications:
A Sequence diagram is an interaction diagram that emphasizes the time ordering of messages.

This diagram is used to show the dynamic view of a system.

Object organization

EXPERIMENT: 4
Name of the experiment: collaboration diagram for ATM System
AIM: To design and implement collaboration diagram for ATM System

Applications:
3.1 To capture dynamic behaviour of a system.
3.2 To describe the message flow in the system

EXPERIMENT: 5
NAME OF EXPERIMENT: State chart diagram for ATM System.
AIM: To design and implement State chart diagram for ATM System
Applications:

1. State chart diagram is used to model dynamic nature of a system
2. They define different states of an object during its lifetime

EXPERIMENT: 6

NAME OF EXPERIMENT: Activity diagram for ATM System.
AIM: To design and implement Activity diagram for ATM System.
Applications:

Activity diagram is basically a flow chart to represent the flow from one activity to another.
The activity can be described as an operation of the system.

EXPERIMENT: 7

NAME OF EXPERIMENT: Component diagram for ATM System.
AIM: To design and implement Component diagram for ATM System
Objectives:
Component diagrams can be described as a static implementation view of a system.
Static implementation represents the organization of the components at a particular moment

EXPERIMENT: 8
NAME OF EXPERIMENT: Deployment diagram for ATM System.
AIM: To design and implement Deployment diagram for ATM System.
Applications:
Deployment diagrams are used to visualize the topology of the physical components of a system where the software components are deployed

LEAD: 1. CASE STUDY OF LIBRARY MANAGEMENT SYSTEM

5(A). LAB SCHEDULE: The lab schedule should be planned once in a week.

The week wise scheduled experiment should be completed.

CYCLE 1

Batches	week-1	week-2	week-3	week-4	week-5	week-6
B1(501 to 512)	Demo	Exp1	Exp2	Exp3	Exp4	test
B2(513 to 524)	Demo	Exp1	Exp2	Exp3	Exp4	test
B3(525 to 536)	Demo	Exp1	Exp2	Exp3	Exp4	test
B4(537 to 548)	Demo	Exp1	Exp2	Exp3	Exp4	test
B5(549 to 560)	Demo	Exp1	Exp2	Exp3	Exp4	test

Batches	week-7	week-8	Week-9	week-10	week-11	week-12
B1(501 to 512)	Exp5	Exp6	Exp7	Exp8	test	Lead exp
B2(513 to 524)	Exp5	Exp6	Exp7	Exp8	test	Lead exp
B3(525 to 536)	Exp5	Exp6	Exp7	Exp8	test	Lead exp
B4(537 to 548)	Exp5	Exp6	Exp7	Exp8	test	Lead exp
B5(549 to 560)	Exp5	Exp6	Exp7	Exp8	test	Lead exp

(B) VIVA SCHEDULE: The viva schedule should be planned prior to the lab experiment.

CYCLE 1: **ROUND -** 1

Batches	**week-1**	**week-2**	**week-3**	**week-4**	**week-5**	**week-6**	**week-7**	**week-8**	**week-9**	**week-10**	**week-11**	**week-12**
B1,B2,B3	viva					viva					viva	
B4,B5,B1		viva					viva					viva
B2,B3,B4			viva					viva				
B5,B1,B2				viva					viva			
B2,B3,B4					viva					viva		

(C) SCHEME OF EVALUATION OF LABS:

The scheme of evaluation for the lab internal and lab external as follows

LAB INTERNAL:							
Day to Day Evalution-15					**Internal Exam-10**		
Uniform	**Observation & Record**	**Performance Of the Experiment**	**Result**	**Viva**	**Write up**	**Execution & Results**	**Viva**
Marks-3	**Marks-3**	**Marks-3**	**Marks-3**	**Marks-3**	**Marks-4**	**Marks-3**	**Marks-3**
Total Marks-25							

LAB EXTERNAL:			
S.NO	Write up	Final Evaluation	Viva
1	**1. Aim 2. Procedure 3. Program 4. Expected output**	**Based on correctness of the program and Results**	**Based on understanding of Experiment and theoretical questions in the related subjects**
Marks	**20**	**20**	**10**
Total Marks-50			

5.

6.SUGGESTED BOOKS:

1. Object-Oriented Analysis and Design with Applications (3rd Edition) [Kindle Edition] Grady Booch (Author), Robert A. Maksimchuk (Author)

7. WEB SITES(USEFUL LINKS):

1. http://jntuhome.com/wp-content/uploads/2011/07/R09-CSE-Lab-3-4.pdf
2. http://forum.jntuworld.com/showthread.php?22468 -Case-Tools-and-Software-Testing-Lab-Manual
3. http://www.scribd.com/doc/188516982/CT-and-ST-LAB-Manual
4. http://forum.jntuworld.com/showthread.php?20471 -Lab-Manuals-For-JNTUH-JNTUK-amp-JNTUA-%28For-All-Courses-All-Branches-amp-All-Regulations%29
5. http://www.mamse.co.in/study/cse/7sem/CS1311.pdf
6. http://sourcecodesonline.blogspot.in/2010/12/atm -system-using-case-tools.html