GUIDELINE FOR LEARNING AND EVALUATION
UNIVERSITAS JEMBER

RECTOR DECREE NO. 12609 / UN25 / KR / 2018

Tradition Of Excellence

MINISTRY OF RESEARCH, TECHNOLOGY, AND HIGHER EDUCATION
UNIVERSITAS JEMBER

THE DEVELOPMENT TEAM

Dr. Akhmad Taufiq, S.S., M.Pd.

Dr. Ir. Bambang Marhaenanto, M.Eng.

Prof. Dr. Ir. Bambang Sujanarko, M.M.

Dr. drg. Zahreni Hamzah, M.S.

Prof. Dr. Drs. Suratno, M.Si.

Prof. Drs. Dafik, M.Sc., Ph.D.

Dr. Hobri, M.Pd.

Dr. Aan Erlyana Fardhani, M.Pd.

Dr. Nita Kuswardhani, S.TP., M.Eng.

FOREWORD

First and foremost, all praises to Allah and His blessing for the completion of this handbook. It is made to be used as the standard reference for lecturers in planning, implementing and evaluating the teaching learning process in the University of Jember. We also would like to mention that this handbook was constructed in accordance with the Semester Lesson Plan guide in the Guidelines for Preparation of the Higher Education Curriculum published by the Directorate General of Learning and Student Affairs of the Ministry of Research, Technology and Higher Education 2016. This handbook has aslo been developed in such a way with additional elaboration which characterizes the university learning culture. The additions covers the research-based learning content, character-based learning, and information technology-based learning. The three additional content domains are expected to be able to simplify, deepen, and enrich the material and value of learning at the University of Jember. Of course, these expectations depend heavily on the lecturers of the University of Jember as the frontliner of teaching learning process. These excellent and superior learning planning, implementation, and assessment are expected to result excellent and superior learning achievement as well. In such context, the planning, implementation and assessment of learning are functionally meant to control all teaching learning processes on the expected track.

It is my hope that this handbook of planning, implementing and evaluating teaching learning process is well received and implemented by all lecturers at the University of Jember. My deepest gratitiude to all the development team of Learning Development and Quality Asurance of the University of Jember for the their greatest support. Finally, hopefully this academic work is considered an endless worship. Amien.

Jember, September 12, 2018
Head of Institute for Learning
Development and Quality Asurance
University of Jember

Akhmad Taufiq

FOREWORD

We thank God for His blessings and grace that finally this handbook of Instructional Tools of the University of Jember can be finalized. On behalf of the Rector of the University of Jember, I would like to express my gratitude to the Development Team of Learning Development and Quality Asurance of the University of Jember for their effortless hardwork to make this handbook into reality.

This handbook is expected to be the reference for all lecturers at the University of Jember in planning, implementing and evaluating the learning process in accordance with the provisions that apply nationally and institutionally. In particular, this handbook is made to be the reference standards for planning, implementing, and evaluating the teaching learning process at the University of Jember, laying out basic references in designing and implementing the learning process represented in Graduate Learning Outcomes (GLO) according to the competency needs of stakeholders, as well as establishing standard references in the use of the university e-learning devices.

This standard of learning process is expected to support the implementation of an accountable study program at the University of Jember and produce higher qualified graduates. Therefore, the Study Program Coordinator and all lecturers at the University of Jember are expected to use this handbook as the reference in planning, implementing and assessing their teaching learning process.

Jember, October 1, 2018

Rector of the University of Jember,

Moh. Hasan

TABLE OF CONTENS

LIST OF FIGURES

LIST OF TABLES

I. INTRODUCTION

Learning, which is defined as a process of student interaction with lecturers and learning resources in a learning environment, is the actual implementation of the curriculum (*actual curriculum*) prepared by the study program. The implementation of learning must meet the standards of the learning process and standards of learning assessment as stipulated in PP number 19 of 2005 concerning National Education Standards (NES) and PP 32 of 2013. Standards of the learning process and assessment standards set out in the NES must be the basis for implementing learning according to the curriculum of study program, which is also the basis for determining the criteria for an external quality assurance system through accreditation. These two standards become references in learning because the fulfillment of learning process standards and learning assessment standards set out in the NES guarantees learning in study programs organized by universities throughout the jurisdiction of the Unitary State of the Republic of Indonesia to achieve quality in accordance with the criteria set out in these standards.

The standard of the learning process, which is one of the national standards in the field of education, is defined as the minimum criteria regarding the implementation of learning in study programs to meet learning outcomes according to graduate profits. The standard of the learning process must include the characteristics of the learning process; learning process planning; implementation of the learning process; and student learning load. Furthermore, the learning process carried out by the study program at the University of Jember is interactive, inspiring, fun, challenging, motivating students to participate actively, and providing sufficient space for initiative, creativity, and independence in accordance with talents, interests, and developments. physical and psychological learners. The learning process with these characteristics requires amodel *student-centered learning* (SCL).

Planning for the learning process begins with the preparation of learning plans for each subject and its devices such as semester lesson plans, student assignment plans, and learning outcomes assessment sheets. In order for the implementation of learning to run effectively and efficiently, it is necessary to arrange a reference for the implementation of each form of learning in the learning module. In the implementation of certain forms of learning, one or more SCL learning models can be applied in accordance with the learning outcomes that the students build.

Educational assessment standards are criteria regarding the mechanisms, procedures, and instruments for assessing student learning outcomes. Assessment of student learning processes and outcomes must include:

a. the principle of assessment,
b. assessment techniques and instruments,
c. assessment mechanism and procedure,
d. implementation of the assessment,
e. assessment reporting, and
f. student graduation.

These assessment standards need to be met and clearly contained in the learning design so that the capabilities that are internalized in the learning process, both through curricular and co-curricular activities, and/or extra-curricular activities, can be objectively validated.

The learning process or the implementation of learning, which is one component of the education system, must meet the standards of the learning process as stipulated in Government Regulation Number 32 of 2013. The standard of the learning process is defined as a criterion regarding the implementation of learning in an educational unit to achieve graduate competency standards. Meanwhile, graduate competency standards are explained as criteria regarding the qualifications of graduates' abilities which include attitudes, knowledge, and skills. These three elements of ability, which are needed to support the establishment of graduate competency standards, must be adjusted to the elements of graduate learning outcomes (LO) in the qualifications of the Indonesian National Qualifications Framework (INQF); and built through a standardized learning process. The learning process is considered standardized because it meets the minimum criteria regarding the implementation of learning in the study program to build LO.

Learning is not the teaching process which can be done in the classical style and not the process for running a standard instruction that has been designed, but rather as a process to reconstruct and seek knowledge to be learned. The learning process is not only a process of knowledge (*transfer of knowledge*) through the lecture method, but also as a process of debriefing through (*methods of inquiry*) of someone who is competent in working in society. Learning with the lecture method is considered ineffective because student participation in the learning is very low so that it reduces students' mastery of science, knowledge and art.

Learning must be held by the University of Jember interactively, inspiring, fun, challenging, motivating students to participate actively, and providing sufficient space for initiative, creativity, and independence in accordance with the talents, interests, and physical and psychological development of students. Thus, faculties and departments are required to manage learning to ensure the achievement of graduate competencies according to the IQF qualifications. Management of the learning process includes planning the learning process, implementing the learning process, assessing learning outcomes, and supervising the learning process for the implementation of an effective and efficient learning process.

II. LEGAL BASIS AND PURPOSES

2.1 Legal Foundation

The legal basis for the preparation of guidelines for the design and implementation of the learning process at the University of Jember is as follows.

1. Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System (State Gazette of the Republic of Indonesia of 2003 Number 78, Supplement to the State Gazette of the Republic of Indonesia Number 4301); Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers.
2. Law of the Republic of Indonesia Number 12 of 2012 concerning Higher Education (State Gazette of the Republic of Indonesia of 2012 Number 158, Supplement to the State Gazette of the Republic of Indonesia Number 5336);
3. Presidential Regulation of the Republic of Indonesia Number 8 of 2012 concerning the Indonesian National Qualifications Framework (INQF);
4. Government Regulation of Republic of Indonesia Number 19 of 2005 concerning National Education Standards (State Gazette of 2005 Number 41, Supplement to the State Gazette Number 4496);
5. Government Regulation Number 66 of 2010 concerning Amendments to Government Regulation Number 17 of 2010 concerning Management and Implementation of Education
6. Government Regulation Number 32 of 2013 concerning Amendments to Government Regulation Number 19 of 2005 concerning National Education Standards (State Gazette of the Republic of Indonesia Year 2013 Number 71);
7. Government Regulation Number 33 of 2013 concerning the Implementation of the IQF in the Education Sector;
8. Regulation of the Minister of Research, Technology and Higher Education Number 44 of 2015 concerning National Standards for Higher Education;
9. Decree of the Minister of Education and Culture Number 0175/0/1995 as amended by Kepmendikbud RI Number 275/0/1999 concerning Amendment to Decree of the Minister of Education and Culture Number 0175/0/1995 concerning Organization and Work Procedures of the University of Jember;
10. Decree of the Minister of National Education Number 183/O/2002 concerning the Statute of the University of Jember;
11. Decree of the Director General of Higher Education of the Ministry of Education and Culture of the Republic of Indonesia Number 48/D3/Kep/1983 concerning the Workload of Teaching Staff at State Universities;
12. Regulation of the Rector of the University of Jember Number 13650/UN.25/EP/2013 concerning the Education Implementation System.
13. UNEJ Strategic Plan 2016-2020

2.2 Objectives

This manual has been prepared for the following objectives:

1. To develop a reference for standard planning, implementation, and assessment of teaching learning process that applies within the University of Jember.
2. To provide guidance for lecturers in planning and implementing the learning process according to the teaching learning process standards and learning assessment standards.
3. To lay a basic reference in designing and implementing the teaching learning process so that GLO is built, and according to the competency needs of *stakeholders*.
4. To establish a standard reference in the use of Unej e-learning as a learning devices.

2.3 Benefits

This manual is expected to be able to:

1. facilitate study programs and lecturers in preparing learning design documents for a subject that is used as a reference for learning implementation;
2. facilitate the management of faculties and departments in carrying out the learning process;
3. facilitate the supervision and evaluation as well as the quality assurance of the learning process; and
4. facilitate faculties and departments in improving the quality of the learning process.

III. LEARNING PLAN

3.1 Definition of Learning Design

Learning Design is a document of the results of learning planning activities that project the actions to be carried out in a teaching and learning process, namely by coordinating the learning components so that the learning objectives, learning materials, methods of delivering activities (methods, models and techniques), and how to measure them become clear. and systematic, so that the teaching and learning process becomes effective and efficient.

Learning planning begins with preparing a lesson plan for the subject presented in the form of a document. The learning design document is determined and developed by the lecturer independently or together in a group of expertise in a field of science and/or technology in the study program.

3.2 Elements of Learning Design

The Learning Plan is realized in several types of documents, among others GLO, CLO and EFA Maps, Syllabus, Semester Lesson Plans (SLP), Student Task Plans (STP), Student Worksheets (SW), Learning Outcomes Assessment Sheets (LOAS) and Lecture Contracts. The following are the definitions of the six Learning Design documents that must be prepared for a course.

3.2.1 Graduate Learning Outcome (GLO)

Graduate Learning Outcomes (GLO) or often times called Program Leraning Outcomes (PLO) is a term for learning objectives as the main components of learning design, therefore GLO needs to be formulated correctly. Learning outcomes can be defined as the internalization and accumulation of knowledge, skills, attitudes, and competencies achieved through a structured educational process covering a particular field of knowledge/expertise or through work experience. Whereas in the previous provision, the learning objective is competence, which in the new provisions, this goal has been included. The definition of competence is the accumulation of a person's ability to carry out a measurable job description through a structured assessment, including aspects of individual independence and responsibility in the field of work.

Graduate Learning Outcomes (GLO) is a description of qualifications at each level of INQF which includes aspects of building national identity, mastery of science and technology, the ability to be able to do quality work, as well as the authority and obligations of a person in accordance with the level of qualification.

By referring to the description of the INQF Learning Outcomes, the formulation of GLO in Graduate Competency Standards (GCS) is stated in three elements, namely **attitudes, knowledge, skills general,** and **special skills,** which are adapted for college graduates:

1. The attitude element in GLO (GCS) is the attitude possessed by higher education graduates.
2. The element of knowledge has an equivalent meaning to the element of 'mastery of knowledge' from the GLO INQF, which should be mastered by

graduates of certain study programs.

3. The “skills” element is a combination of the 'work ability' element and the 'authority and responsibility' element of the description of the INQF Learning Outcomes.
4. Elements of special skills characterize the ability of graduates of study programs according to certain scientific fields/skills, while general skills characterize the abilities of graduates according to the level and type of education program that does not depend on the field of study.

Program Learning Outcomes or GLO can be formulated through similar study program forums or professional organizations that accommodate the graduate profession. The GLO formulation will be stated in a table which is grouped into Attitude GLO, Knowledge GLO, General Skills C GLO and Specific Skills GLO. Standard GLO formulations in the form of proposals, drafts, and officially published in http://kkni-kemenristekdikti.org/pendidikan. If the GLO in a study program has already existed, then we can use the GLO as a Graduate Competency Standard (GCS). However, if a GLO is not found that is in accordance with the Study Program for which the learning design will be drawn up, then the GLO can be proposed to the admin managing the web.

The GLO in a study program must be divisible into the courses in the study program. One GLO may be used by several courses, but there may not be a single GLO that is not used. The LO for the course must include all elements of the LO. So it must be taken at least one of the GLO attitudes, at least one of the GLO Knowledge, at least one of the general skills and at least one of the special skills.

A number of GLO consisting of four GLO elements for these courses are then clearly stated in a form as shown in Figure 3.1. Furthermore, the GLO will be synthesized into several LO courses or can directly become the Expected Final Ability (EFA). If the synthesis is in the form of EFA, then it can be coded with EFA1, EFA2, EFA3, and so on. EFA is a learning achievement for one or several meetings and is the stages of achieving GLO that is imposed on a course. The synthesis process must pay attention to the IQF level and the operational words of Bloom's taxonomy. It is necessary to strive so that the operational words used are also in line with the description of the IQF level, so that the accumulation shows *High Order Thinking Skills* (HOTS).

GRADUATE LEARNING OUTCOMES (GLO)
STUDY PROGRAM.....

	ATTITUDE (A)
A	
B	
C	
… dst	
	KNOWLEDGE MASTERY (KM)
A	
B	
C	
... dst	
	GENERAL SKILLS (GS)
A	
B	
C	
… dst	
	SPECIFIC SKILLS (SS)
A	
B	
C	
… dst	

Figure 3.1 Form of GLO

3.2.2 Concept Map of Expected Learning Outcomes and Final Skills

The Course Learning Outcomes (CLO) and EFA Concept Map (Sub-CLO) is an illustration of the stages of student achievement that are measurable, systematic and planned. These stages are obtained from the analysis of learning as a systematic and logical EFA arrangement.

Learning analysis describes the stages of achieving the final ability of students which are expected to contribute to the achievement of GLO. Learning analysis is carried out to identify the final ability at each stage of EFA as an elaboration of the GLO imposed on the course.

The concept map is described as a flow diagram of the learning process of a course to achieve the course learning outomes (CLO) based on the Expected Final Ability (EFA) of each stage of lecture activities from a study material. Figure 3.2 below shows an example of a concept map (Dirjen Belmawa, 2016).

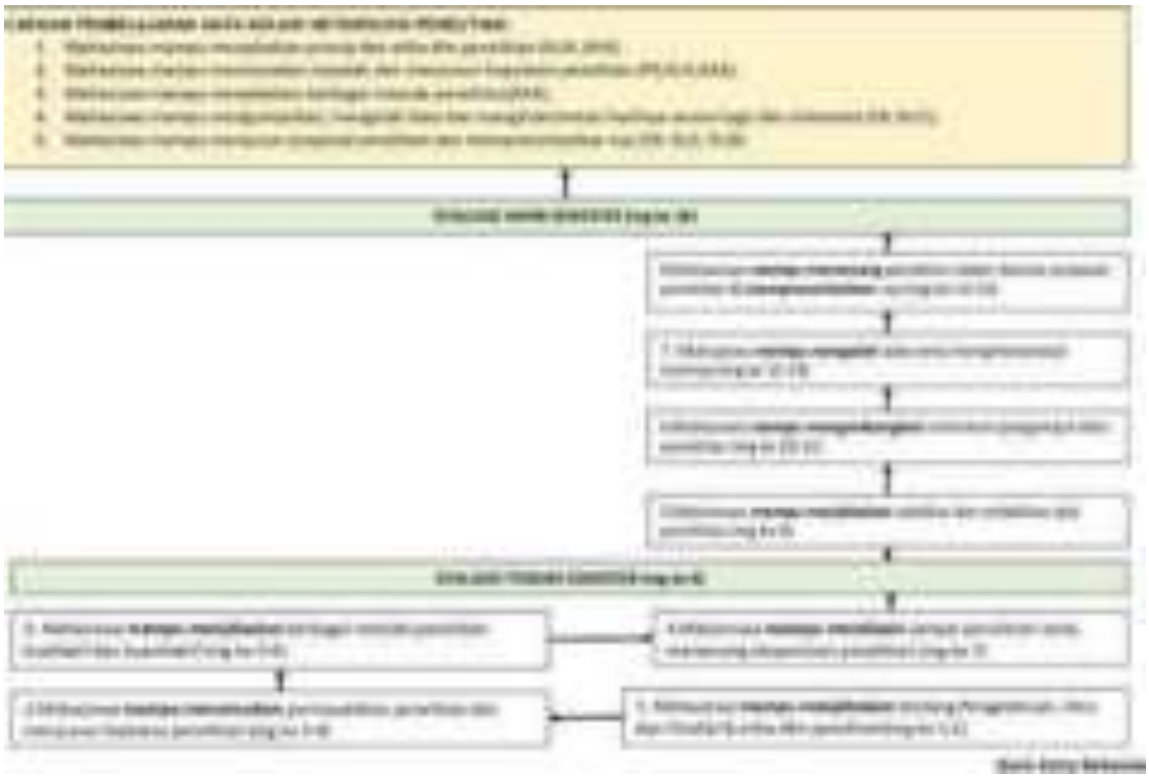


figure 3.2 Example of a concept map

3.2.3 Syllabus

A syllabus is a framework of elements of an educational course, presented in a logical order, or in increasing difficulty or can mean an overview of a lesson. So that the syllabus can be interpreted as a description of a course which includes Course Name, Course Code, Semester, SCU, Faculties/Study Programs, Prerequisite Courses, Course Learning Outcomes, Course Descriptions, Study Materials and Library Resources.

A syllabus is a document that describes learning outcomes into the substance of the discussion material that is summarized in the course or practicum. Therefore, the syllabus is composed of components of the identity of the course or practicum, standard of learning achievement, description of the course or practicum, study material or subject matter and library resources. The components of the syllabus are detailed in Figure 3.3 below.

Syllabus

Subject Code/ : .....
Practicumcode of : .....
Semester Subject : .....
SCU : .....
Fakulty / Study Program : .....
Prerequisities for Course : .....
LO-Subject : .....

Course Description : .....

---
study material : .....

References : .....

Figure 3. 3 Course Syllabus Component

3.3.4 Semester Lesson Plan

Semester Lesson Plans (SLP) are activities or actions to coordinate learning components so that the learning objectives, learning materials, delivery methods (methods, models and techniques) and how to assess them become clear and systematic, so that the teaching and learning process for one semester becomes effective and efficient. The SLP at the University of Jember is arranged in a table as shown in Figure 3.4 (Dirjen Belmawa, 2016).

Figure 3.4 Table format for compiling a semester lesson plan (SLP)

The explanation for filling out the SLP form in the Figure above is described as follows.

a) Faculty : Write down the name of the faculty

b) Study Program : Write the Strata (D3/S1/S2/S3) and the name of the Study Program

c) Courses : Write down the name of the course

d) Code : Write down the course code

e) Custer of courses : Write down University Compulsory / Faculty Mandatory/Required Study Program/Choice Study Program/ .. etc. Leave blank if there is no grouping.

f) Weight (scu) : Write down the course credits

g) Semester : Write in what semester this course is offered

h) Date of Compilation : Write down the date when this SLP was compiled/completed

i) Authorization : Write down your full name and academic title Dab/ request a signature from the name concerned

j) Program Learning Outcomes (PLO) : Write down the GLO of Study Program (Code and its Description) to be achieved through this course.

k) CLO : Write a description of the learning outcomes of this course

l) Brief description of the course : Write a brief description of this course

m) Learning Materials / Subject matter : Write down all the titles of the subjects that will be discussed in this course.

n) Bibliography : Write down all sources of reference (library) used

o) Learning media : Software: write the software that will be used. Hardware: write the hardware are to be used

p) Teaching Team : Write down the names of lecturers in this course

q) Prerequisite courses : Write prerequisite courses (if any)

r) Week : Write down how many meeting. This column can be filled with the number of meetings, for example 1, 2 and 3, 4-6, and others which are meetings needed to complete one EFA.

s) Expected Final Ability : Write a description of EFA at meeting this to achieve courses learning outcomes (CLO)

t) Indicators : Write a description indicators of achievement of students to study materials that are discussed in this meeting.

u) Criteria and forms

of assessment	:	Write down the details of the criteria and forms of assessment of the indicators to determine student achievement

v) Learning Methods

and Time Estimation	:	The learning methods used are as effective as possible, meaning that SCL learning methods must be found that are in accordance with the final ability domain planned. For example, if the Expected Final Ability is the psychomotor domain, then effective learning is the Project Based Learning method or practicum, not lectures or discussions. Lecture learning, in addition to being conducted face-to-face (FTF) in class, is also required to organize learning in the form of structured assignments (FSA) and independent study (IS). In FSA there are student assignments, which are activities that students must do to support the achievement of the planned final abilities, which are described briefly and will be described in more detail in the Student Tak Plan (STP) and Student Worksheet (SW). While in IS students need an overview of what to do carried out which can be stated in the Independent Learning Direction (ILD). The time allocated for each FTF, FSA and IS learning activity follows the existing provisions, namely FTF 50 minutes, FSA 60 minutes and IS 60 minutes, for 1 credit of lectures. As for Practicum, the time allocation is 170 minutes for 1 credit. For other forms of learning, it can refer to the provisions in research and technology No. 44 of 2015.

w) Learning Materials

[Library]	:	Write down the title of the subject as the study material discussed at this meeting. The study material is the substance of the material that will be discussed at meetings in lectures, structured assignments and student independent activities. Study materials generally consist of several subjects that can be taken from the references used. A EFA can contain several study materials. Also write down the bibliography for each subject.

x) Assessment weight	:	The assessment weight is the percentage of the score obtained for a EFA to the entire final grade of a course.

3.3.4 Student Task Plans and Self-Study Directions

Student Task Plans (STP) is a plan that describes the activities carried out by students in discussing certain study materials so as to create a learning process with an effective SCL model to achieve the Expected Final Ability (EFA). An example of the STP format is shown in Figure 3.5. While the Independent Learning Direction (ILD) is a description that is able to motivate or provide an overview of how students learn independently by utilizing available learning resources. The ILD format is the same as the STP, but contains only the purpose and description.

3.3.5 Student Worksheet

Student Worksheet (SW) is a printed teaching material in the form of sheets containing assignments which contain instructions and steps to complete assignments that are packaged in such a way that students can study the material independently. Figure 3.5 shows an example of an SW.

	JEMBER UNIVERSITY **FACULTY .....** **STUDY PROGRAM .....**				
STUDENT TASK PLAN ...					
COURSE					
CODE		SCU		SEMESTER	
SUPPORTING LECTURER					
TASK FORM					
ASSIGMENT TITLE					
SUB-CLO					
TASK DESCRIPTION					
TASK EXECUTION METHOD					
EXTERNAL FORM AND FORMAT					

INDICATORS, CRITERIA AND ASSESMENT WEIGHTS
EXAMINATION SCHEDULE
ETC
REFERENCES

Figure 3.5 STP Format

	WORKSHEET STUDENT 7		
	Topic	Calibration of the LM 35 sensor	
	Job description	: 1. Take a voltage measurement on the 1st leg and the 2nd leg of the LM35 sensor when the sensor is inserted into the water medium in a container that is treated with cooling and heating, at the same time measuring the temperature using a digital thermometer on the oil medium. 2. Record the measured sensor voltage and temperature values as a data pair x and y 3. Perform steps 1 and 2 by changing the temperature of the water medium. To cool can be added ice, to heat can be added hot water. Make the number of treatments at least 20 pairs in a temperature range of 10°C to 60°C. 4. Copy the data pairs into the Excel sheet to find the equation for the relationship between temperature and voltage. Make y = f(x) where y = temperature (°C), x = voltage (Volt)	

	Result : Equation : r^2 = ...	

Figure 3. 6 example of worksheet student

3.3.6 Learning Outcome Assessment Sheet

Learning Outcome Assessment Sheet (LOAS) is a printed material in the form of a sheet containing a systematic process including information collection (numbers or verbal descriptions), analysis, and interpretation to determine student achievement. To collect learning achievement data, it can be done with test and non-test techniques, both during the learning process and to test learning outcomes, both in the form of cognitive, affective, and psychomotor domains. The technique of assessing learning achievement at certain domains and levels must be chosen correctly from a number of various assessment techniques. There are at least seven choices of assessment techniques that can be used, namely performance assessment, attitude assessment, written assessment, project assessment, product assessment, portfolio use, and self-assessment.

The complete Learning Outcomes Assessment Sheet (LOAS) will contain the assessment criteria which are detailed indicators and printed materials containing the identity being assessed and the column value. The value column will be filled with values that match the predetermined indicators and criteria. Examples of criteria for the Explanation Accuracy indicator are shown in the table below.

Tabel 3. 1 Criterion 1: Explanation Accuracy

Dimensions	**Very Satisfactory**	**Satisfactory**	**Limits**	**Unsatisfactory**	**Below standard**
Completeness of concept	Complete (3 concepts) expressed and very synergistic and integrated	Complete (3 concepts) and expressed synergistically and integrated	Incompletely revealed but synergy	Shows only part of the concept, and lacks synergy	None Concepts
Truth Concepts	Properly expressed, important aspects are not overlooked, even the analysis and synthesis help understand the concepts	Properly expressed, descriptive analysis and synthesis are sufficient to support understanding	Most of the concepts have been revealed, analysis and synthesis are carried out but there are still things missing	Less able to reveal aspects important, there is only analysis, no synthesis process	No concept presented

While the Assessment Sheet can be arranged based on the identity of the students (students) and the score columns for the indicators used in the assessment. The following table is an example of the intended Assessment Sheet.

Table 3. 2 Examples of assessment sheets based on student names

No	Names of student	Indicator Score 1	Indicator Score 2	Score .....
1				
2				
..				
..				

The assessment sheet can also be in the form of a rubric as in the following example. The rubric is used for the assessment of group report assignments, which contains group identity, space for assessment scores and descriptions of assessment scores.

Score	Description
4	The substance presented is very complete Very good presentation technique The presentation media is very precise and interesting All group members are actively involved in the discussion
3	The substances presented is complete Good presentation technique Media presentation is precise and compelling All group members actively involved in discussion
2	The substance is presented incomplete Pretty good presentation technique The Media is less precise and interesting Most of the group members are active in the discussion
1	The presentation presented substance is not complete The presentation technique is not good Not using media presentation Group members are not actively involved in the discussion

Figure 3. 7 Example of a group assignment assessment rubric

3.3.7 Course Contract

The course contract is an agreement between the lecturer and the student regarding various aspects of the lecture, including the form and content of the study program. The function of the lecture contract is to explain the roles and responsibilities of students and lecturers in order to improve learning efficiency.

Figure 3. 8 The Example of Course Contract

Figure 3. 9 The Example of Course Contract (continued)

3.4 The Lesson Planning Procedure

The planning procedure begins with the Vice Dean I and the Study Program Coordinator socializing the academic calendar. Based on the academic calendar, the Study Program holds a meeting to determine the subject/competency block/practicum and the Lecturer/Lecturer Team along with the planned lecture schedule. The list of courses, supporting lecturers, and class schedules are then inputted into SISTER by the operator and become the basis for the management of the learning process and the issuance of decrees for teaching subjects/competence blocks/practicum by the Rector.

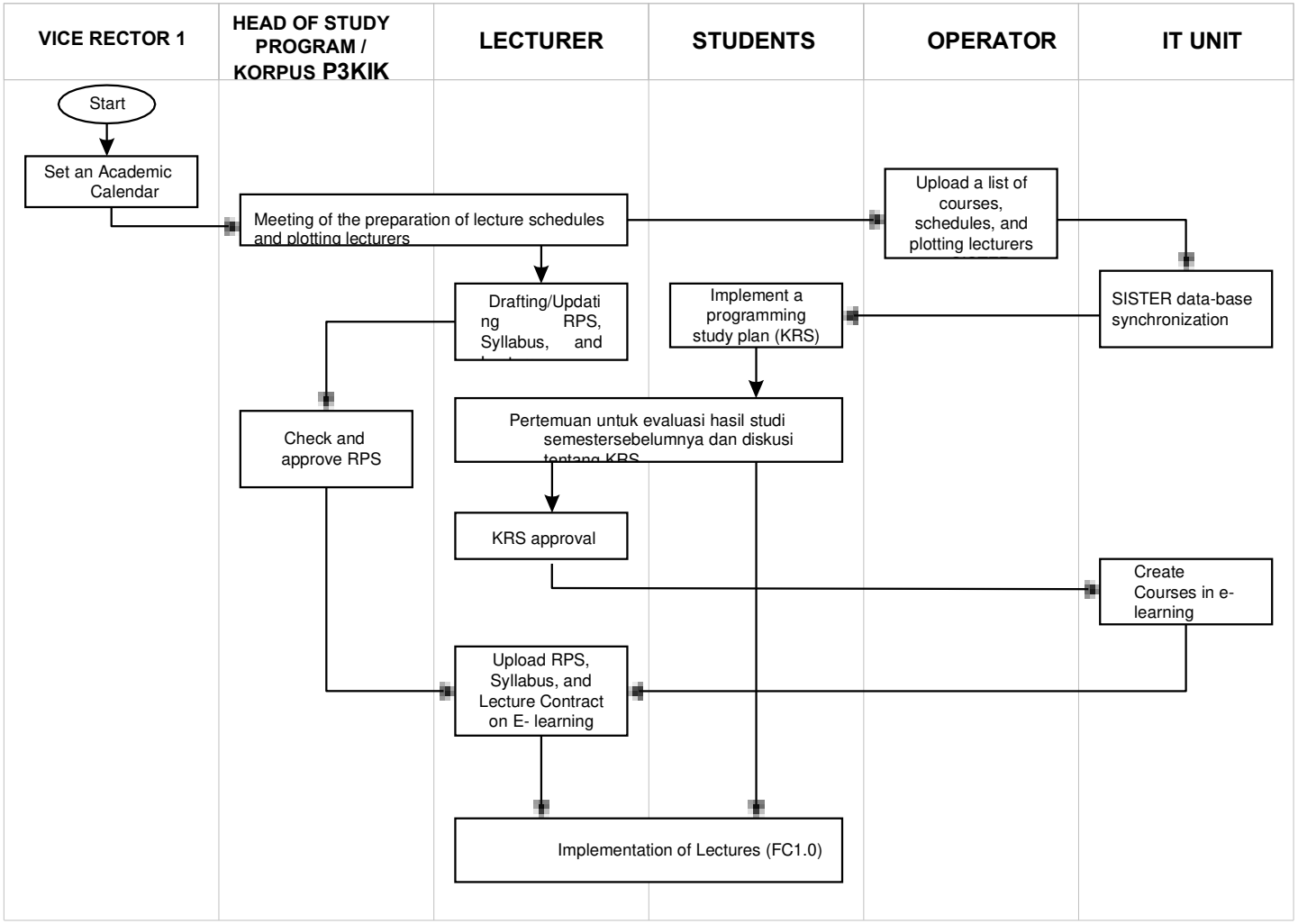
After determining the distribution of courses and their instructors, the Lecturer/Lecturer Team needs to immediately compile/update the Semester lesson plan (SLP), Syllabus, and Lecture Contract documents in the format according to the

provisions. Furthermore, the Study Program Coordinator checks whether the SLP is in accordance with the Outcomes. Study Program Learning (GLO) and the study program curriculum as a form of responsibility for the suitability of the SLP quality for the courses/competency blocks/practicum prepared by the Lecturer/Lecturer Team. approval before the start of the study period. If the SLP prepared by the Lecturer has not been approved by the Study Program Coordinator, then the Lecturer/Lecturer Team is required to revise the SLP until it is approved by the Study Program Coordinator.

The SLP that has been approved by the Study Program Coordinator will be uploaded to e-learning with the Syllabus and Lecture Contract. To be recognized by SISTER, the three files must be given a name containing the words "SLP", "SYLLABUS", and "CONTRACT" and uploaded to the course web and placed in the "General Section".

Furthemore, the lecturer can arrange teaching materials, in the form of slides, dictation, practicum instructions, modules, textbooks, videos, and others in accordance with the SLP and applicable rules and *uploaded* to *e-learning*. Meanwhile, Deputy Dean II/Secretary II provides learning infrastructure/facilities before learning begins.

The SOP (Standard Operating Procedure) of Learning Planning can be seen in the FC1.0 document in the Appendix which is depicted in a flow chart as shown in Figure 3.10.



Gambar 3.10 The lesson Planning Procedure

IV. RESEARCH-BASED LEARNING, CHARACTER AND NATIONAL INSIGHTS

4.1 Background

Law number 20 of 2003 concerning the national education system chapter III article 4 states that education is held as a process of civilizing and empowering students that lasts a lifetime. Education is held by setting an example, building the will and developing the creativity of students in the learning process. This article also becomes the basis for the process of organizing all levels of education in Indonesia.

In that context, the article also serves as a paradigmatic framework that is in the ideal position of providing education in Indonesia. There are four important dimensions that can substantially be used as a basis: (1) regarding the civilizing process; (2) empowerment; (3) exemplary; and (4) build willpower. The four dimensions are certainly seen as having deep urgency, that education is not merely a cognitive matter; however, it can be stated more complex than that.

Therefore, a national education system is essentially part of a national cultural strategy concerning the visionary direction of this nation to be implemented. As an important part of the national cultural strategy, the paradigm of education in Indonesia needs to be placed on two things; namely returning to the level of the humanitarian paradigm and the educational paradigm for all (Taufiq, 2014: 80). The four dimensions of the National Education System Law in that context substantively fulfill the two paradigms. Operationally in relation to curriculum development, as stated in article 38, it must pay attention to global dynamics and national integration.

To produce quality graduates who receive recognition from the community, each education unit needs to have an education system. The main stages of the process in the higher education system include (1) input; (2) process; (3) output; and (4) outcomes (outcomes). The curriculum document is one of the input elements that can contribute greatly to the success of the educational process. One element of the process that needs to be documented in the curriculum document is the learning process. One of the components that must exist in a good education system is the availability of learning designs in the form of curriculum documents that are clear and in accordance with the needs of the job market, and prioritize the principle of benefit for humanity and nationality.

4.2 Determining Standards for the Learning Process

Learning as a process of interaction between students and lecturers and learning resources in the UNEJ environment must meet the standards of the learning process as stipulated in Permendikbud 049/2014. This standard of learning process is a criterion minimum regarding the implementation of learning in study programs to obtain graduate learning outcomes. The standard of the learning process must include: the characteristics of the learning process; the planning of the learning process; the implementation of the learning process; and student learning load.

Students as one of the input categories in the higher education system will produce good quality graduates if they are supported by a good learning process. To produce graduates who are absorbed and recognized in the world of work and society, a learning

process is needed that can prepare competencies or learning outcomes that are in accordance with the needs of the community. A good learning process will be realized if universities have carried out quality assurance of learning which is manifested in the process of planning, implementing, and evaluating learning consistently and correctly as a requirement to produce graduates who are guaranteed quality and sustainable.

As part of the curriculum document, the learning process must be inline with the role of the curriculum in the higher education system. In a higher education curriculum that prioritizes the achievement of learning outcomes, it requires learning methods that are in accordance with the type and level of learning achievement desired by measuring the level of student success authentically. Minister of Education and Culture No. 056/U/1994, became a Competency-Based Curriculum (CBC) according to the Decree of the Minister of National Education No. 232/U/2000. Furthermore, in the process of developing the curriculum, DIKTI will issue guidelines for the development and preparation of the Higher Education Curriculum (KPT) in 2012, with the hope that universities will be able to develop curricula referring to quality learning outcomes or abilities (competencies) in their respective levels and capacities. The construction of the higher education curriculum is carried out by assuming the involvement of relevant expert groups, professional associations, government agencies, and graduate users.

Due to the low participation of students in learning.The learning process widely practiced today is mostly in the form of face-to-face delivery *(lecturing*) or lectures. Students generally have difficulty capturing the essence of the learning material, so that their activities are limited to taking notes, which causes the effectiveness of the learning process to be low. Due to the low active participation of students in learning.

In the application of KPT, UNEJ is required to carry out achievement-based learning. The learning system is an important part of being able to produce highly competitive graduates. A good learning system is able to provide learning experiences for students to unlock their potential in internalizing knowledge, skills, and behavior as well as previous learning experience. Such a learning system is able to develop the elements of competence mandated by Law No. 12 of 2012 concerning Higher Education, Presidential Regulation No. 8 of 2012 concerning INQF, and Permenristekdikti No. 44 of 2015 concerning National Standards for Higher Education.

4.3 Research-Based Learning

The very rapid development of science, technology and art has consequences on the preparation of human resources who have the ability to innovate. For this reason, the University of Jember in carrying out the learning process applies *research-based learning* (RBL). With this research-based learning, it is hoped that the graduates of the University of Jember will be able to become research staff/researchers who are ready to enter the era of the development of science and technology and the arts.

To carry out the learning process, apart from providing research umbrellas, a research group will also be formed consisting of a group of lecturers and students. Furthermore, Dafik (2016: 12) explains that the stages of developing RBL learning in lectures are as follows:

1. Develop study groups or research groups consisting of at least three lecturers at the level of study programs, departments, faculties or across faculties.
2. Map out several courses that are relevant to this study group or research group, then develop Syllabus, SLP, STP, SW and Lecture Contracts together to apply RBL in learning
3. Applying in class lectures through *team teaching, contextual teaching* and *cooperative learning* through the following stages: (1) providing basic information about the material being studied, (2) showing the results of lecturers' research in study groups or research groups relating to/in touch with the material being discussed, (3) dividing students into discussion groups, (4) giving assignments to students in the form of discussions in groups about (a) the main content of the research, (b) the research process, (c) method of analysis, (d) formulation of conclusions, and (e) the values that emerged from the results of the research, (4) led by student lecturers conducting inter-group discussions, (5) with student lecturers making conclusions. In this stage, as far as possible, students are more involved in learning (student-centered learning). Lecturers play more of a role as a facilitator. If possible during the discussion, if there are problems that require literature, the lecturer can show them through online media (internet) so that the problems faced by students can be answered.
4. Each group develops reports, presentation slides and articles for possible publication on a local scale
5. The lecturer continuously brings the results of RBL in this lecture in a study group, or research group to be followed up more deeply by students who are taking their thesis or thesis.

While the syntax of themodel *Research Based Learning* according to Arifin (2010), there are three main step groupings that must exist in the RBL stage, namely:

1. *Exposure stage*, which is collecting information based on inquiry and searching for literature on a particular topic (*focused topic*),
2. *Experience stage, namely* identifying and formulating problems based on literature studies and experimental experiences,
3. *Capstone stage*, conveying plans or ideas in providing problem solutions or measurement or computational methods.

4.4 Character Based Learning

In this regard, in the context of praxis, the learning process must be interactive, holistic, integrative, and scientific. Interactive means that the learning outcomes of graduates are achieved by prioritizing a two-way interaction process between students and lecturers. Holistic means that the learning process encourages the formation of a comprehensive and broad mindset by internalizing local and national excellence and wisdom. Integrative means that the learning outcomes of graduates are achieved through an integrated learning process to meet the overall learning outcomes of graduates in a unified program through an interdisciplinary and multidisciplinary approach. Scientific means that the learning outcomes of graduates are achieved through a learning process that prioritizes a scientific approach so as to create an academic environment that is based on a system of values, norms, and scientific principles and upholds religious, humanitarian, and national values.

Character-based learning in this context is a necessity that must be taken into reality by every lecturer in planning and implementing learning. Character-based learning is a learning process that prioritizes and integrates the internalization of character education values in the learning process. Character education itself is intended as a framework and conception of education that is based on personality values based on ethical and moral values (Gulo, 1982; Kertajaya, 2010).

On the basis of such a framework and concept, character-based learning at the University of Jember can be elaborated, by integrating ethical and moral values into an integral part of the learning process. The values of religiosity, tolerance, inclusiveness, solidarity, professionalism, and willingness to cooperate with various subjects and groups are ideals.

This needs to be emphasized that the ideal learning is learning that is based on learning for all. A diversity-based learning, which is far from discrimination. In that context, character-based learning becomes an ideal orientation that can be applied to all subjects. This means that character-based learning is not solely the responsibility of the course; but it is the responsibility of all courses taught by lecturers at the University of Jember.

4.5 National Insight-Based Learning

In line with the character-based learning, in particular the dimensions that are seen as urgent are the application and optimization of national insight-based learning. Nationality-based learning can be defined as a learning process that emphasizes the knowledge and dimensions of national values in the context of the Unitary State of the Republic of Indonesia.

Therefore, in the national-based learning process, there are two things that can be achieved. First, the dimension of national insight itself which has a very broad scope, involving the historical aspects of the nation-state, national identity and integration, national security, and Indonesian geopolitics. Second, is the aspect of national value itself; which includes Indonesian national values based on the diversity (multicultural) of the Indonesian nation. These values include; values of tolerance, moderation, inclusivity, and solidarity, as well as continuous improvement of love for the homeland and nation.

These values are important to be put forward and emphasized in the learning process at the University of Jember by being integrated into the entire learning process in the course. The integration in the learning process can be done in the opening phase of learning, learning core, and closing the lesson.

In this context, the learning process based on national insight is achieved in two ways; namely, the process of transformation and internalization. The transformation process means that the lecturer links the learning materials with the existing national discourse; Meanwhile, in the internalization process, lecturers incorporate national values into the personality of students or prospective graduates.

4.6 Output and Profile

Learning outcomes are expected to be in accordance with the needs of the community and nation, the needs of the business/industry world, and the needs of the profession. Thus, the output is the ability to integrate intellectual, knowledge and

affective skills into a complete behavior, as well as the form of practical skills as competencies. Educational outputs as expected in the KPT can be achieved if followed by changes in the learning process. Changes in a curriculum need to be followed by changes in the behavior and mindset of participants and learning actors, so that the specified learning outcomes can actually be realized. That is, the learning process is not only a process of knowledge transfer (transfer of knowledge), but also a complex debriefing process involving various methods to reach prospective graduates and graduates who are competent in working in society and the Indonesian nation in general.

In this regard, based on character-based learning and national insight, the profile of prospective graduate students and graduates of the University of Jember can be constructed into prospective graduates and graduates who are Religious-nationalist or **Nationalist-religious.** The profile needs to be emphasized that there are no prospective graduates and graduates of the University of Jember who are not religious and nationalist at the same time. **Religious-nationalist** is a form of character/personality that is integrative to be achieved. Both are a unified whole. There are no prospective graduates and graduates of the University of Jember who are religious or nationalists only; both of them become a unity that animates in the personality of prospective graduates and graduates of the University of Jember.

V. LEARNING PROCESS

5.1 Learning as Semester lesson plan Implementation

The learning process at the University of Jember is an implementation of the Semester lesson plan in the Learning Plan and is held interactively, inspiring, fun, challenging, motivating students to participate actively, and providing sufficient space for initiative, creativity, and independence according to talent, interests, and physical and psychological development of students (PP32/2013). Faculties and departments carry out the planning of the learning process, implementation of the learning process, assessment of learning outcomes, and supervision of the learning process so that the learning process takes place effectively and efficiently.

The process of internalizing the capabilities built into the curriculum in the learning process with a combination of various learning methods is not only carried out through curricular activities, but also through co-curricular and/or extra-curricular activities. The learning process through curricular activities must be carried out in a systematic and structured manner through various courses and with a measurable learning load. In addition, the learning process through curricular activities is required to use effective learning methods in accordance with the characteristics of the courses to achieve certain abilities specified in the courses in the series of fulfillment of graduate learning outcomes. Learning methods that can be chosen for the implementation of course learning include: group discussions, simulations, case studies, collaborative learning, cooperative learning, project-based learning, problem-based learning, or other learning methods, which can effectively facilitate the fulfillment of graduate learning outcomes. Each course can use one or a combination of several learning models and is accommodated in a form of learning. Lecturers, as educators provide a variety of strategies and learning methods and understand the student's learning approach to be able to develop the potential of students in the learning process. In addition, educators must set an example.

5.2 Learning Forms and Methods

The form of learning can be in the form of: a) lectures, b) responses and tutorials, c) seminars, and d) practicum, studio practice, workshop practice, or field practice. The implementation of this form of learning is regulated in learning modules, which are compiled by departments and faculties. In certain forms of learning, one or more SCL learning models can be applied. The SCL learning model that can be selected in the implementation of this form of learning in detail is presented in the next chapter.

The implementation of the learning process is carried out by applying the SCL learning method supported by appropriate learning media according to the type of knowledge and abilities as well as study materials that must be mastered by students. In the implementation of learning, the lecturer acts as a facilitator and motivator by providing several learning strategies that allow students (together with the lecturer) to choose, find and organize knowledge and how to develop skills (*method of inquiry and discovery*). With this paradigm, the *learning process is*more appropriate to do with a student-centered learning model or *Student Centered Learning* (SCL).

In the SCL learning process, learning is defined as an activity to actively and specifically seek and construct knowledge. Knowledge is not transferred to students but as a result of construction or transformation by the learner. Lecturers do not convey

knowledge or teach (lectures and lectures), playing lecturers participate with students in forming knowledge. Graduate learning outcomes are achieved through a learning process that prioritizes the development of creativity, personality capacity, and needs of students, as well as developing independence in seeking and finding knowledge.

5.3 Evaluation of Learning Process

Evaluation of the learning program is an evaluation of all components of the learning program, starting from the planning of the learning program including the curriculum and assessment (assessment) and its implementation, procurement and capacity building of lecturers, education management, and overall education reform. Evaluation aims to provide input to decision makers in order to improve the quality, performance, or productivity of an institution in implementing its program. Evaluation is a process intended to measure the quality of an ongoing program. Evaluation will provide quality control by determining the discrepancy between what happened (what happened) and what should have happened (what should have happened). The evaluation will provide information about which components are functioning properly, which are not, and how to improve the program's performance, as well as what requirements are needed to make improvements.

Evaluation aims to help improve the program so that it can run better. The purpose of the evaluation is not to find fault with the program being evaluated, but the evaluation is carried out to improve the quality of the program. This system has been standardized and has begun to be implemented by the ministry. The PPEPP cycle is key in this evaluation.

5.4 Learning Implementation Procedures

The learning process at the University of Jember is regulated in several procedures with the aim that the learning process takes place effectively and responsibly. This means that it is effective in the transfer of knowledge towards learning outcomes. Accountable in terms of learning management (presence of lecturers, attendance of students, conformity of schedule and others).

The implementation of learning involves human resources (lecturers, students, education staff, leaders), study materials (reference books, textbooks, modules, etc.), facilities/infrastructure (classrooms, laboratories, LCD viewers, hotspots, information systems, e-learning , etc.), Regulations (Curriculum Guidelines, SOPs, Academic Calendar, Class Schedule, etc.).

The learning process cycle is carried out periodically every semester, where in one semester, 16-18 weeks of lectures are provided. This time is used for face-to-face lectures, practicum, and exams (Mid Test/Final Test).

In every lecture activity, the attendance of students, the presence of lecturers, and a lecture journal containing the theme/topic according to the SLP must be recorded. These records are stored in the system (SISTER) for the purpose of evaluating the end of the semester for students, as well as monitoring and evaluating the workload of lecturers (WoL). The lecture implementation monitoring system has been provided at the URL: http://sister.unej.ac.id/perkuliahan/ which contains information *real-time on* lectures that take place in each faculty/study program: subject titles, classrooms, lecturers' names, student attendance, and journals (Figure 5.1).

Figure 5.1 Con Example of a Lecture Monitoring System Display

To fulfill the needed, a system that can record student attendance, lecturer attendance, lecture journals, as well as the appropriateness of time and lecture space used according to schedule has been provided. Proof of student attendance is carried out by the student concerned by scanning the QR Code provided in the classroom using the SFS (Sister for Student) application on an Android or iOS device that is connected to the internet via WiFi installed in every lecture room with the SSID name according to the room name.

Lecturer attendance and journal writing are carried out by lecturers by logging in to e-learning, opening the relevant course web and updating the title/name of *topic section* the appropriate. Lecturers can also make attendance with the SFL (Sister for Lecturer) application to scan the QR Code. With a note that the laptop and Android/iOS devices used must be connected to the internet via WiFi with the SSID of the classroom used according to the class schedule in question.

Furthermore, under normal conditions, the lecture implementation procedure follows the FC2.0 SOP document.

If for some reason the lecturer is unable to attend class, the lecture can be conducted online (SOP FC2.1) or change the class schedule (SOP FC2.2). If at any time there is a network/system disturbance or due to a power outage, the lecture will follow the FC2.3 SOP procedure.

For lectures/practicums that are mostly carried out outside the room (in the field) or outside the Tegalboto campus where the internet network is not yet available, the lecture uses the Non-Elearning procedure (SOP FC2.4).

The absent Students from lecture activities due to certain obstacles must follow the permit/sick procedure (SOP FC2.5). Unreasonable absence is included in the alpha status which is taken into account at the end of the semester evaluation. If the number of *alpha* (not attend) exceeds 25%, the student cannot get an E grade or grade.

The following is a list of SOP documents related to the implementation of learning:

- FC2.0 LEARNING IMPLEMENTATION
- FC2.1 ONLINE LEARNING IMPLEMENTATION
- FC2.2 IMPLEMENTATION OF SUBSTITUTE COURSES
- FC2.3 LECTURE IMPLEMENTATION IN SYSTEM DISORDER CONDITIONS
- FC2.4 IMPLEMENTATION OF NON-ELEARNING COURSES
- FC2.5 STATUS OF LICENSE AND ILLNESS FOR STUDENTS

The complete document of the SOP is presented in the Appendix.

VI. LEARNING ASSESSMENT

6.1 Valuation Principle

Learning assessment includes an assessment of student learning outcomes and an assessment of the learning process. Assessment of learning outcomes or substantive assessment is carried out to determine the achievement of competencies or learning achievements built by students. Meanwhile, the assessment of the learning process or managerial assessment to determine the effectiveness of the learning process that has been held. In assessing learning outcomes, the formative assessment model is used, while the summative model is used for the assessment of the learning process. The assessment of student learning processes and outcomes includes: the principle of assessment; assessment techniques and instruments; assessment mechanisms and procedures; implementation of the assessment; assessment reporting; and student graduation.

The process of assessing learning outcomes is carried out by examining, reviewing, providing direction and input to students, using an assessment instrument as a benchmark for achievement of abilities or Learning Outcomes. The learning outcomes that will be assessed are the internalization and accumulation of knowledge, knowledge, practical knowledge, skills, affection, and competencies that are achieved through a structured educational process covering a particular field of knowledge/expertise or through work experience.

Science is a system based on a scientific methodology to construct knowledge through the results of research in a field of knowledge *(body of knowledge*). Continuous research used to build a science must be supported by date records, observations and measurable analysis and aims to increase human understanding of natural and social phenomena. Meanwhile, knowledge is the mastery of the theory and skills by a person in a particular field of expertise or understanding of the facts and information obtained by a person through experience or education for specific purposes. As for practical knowledge (*know-how*) is the mastery of theory and skills by a person in a particular field of expertise or understanding of the methodology and technical skills that a person acquires through experience or education for certain purposes. Skills is a psychomotor abilities (including manual dexterity and use of methods, materials, tools and instruments) are achieved through training measured based on the knowledge or understanding *(know-how)* owned by a person able to produce a product or of performance can be assessed qualitatively or quantitatively. Affection is an attitude someone sensitive to aspects around good life grown because of the learning process as well. family life or society at large. Competence is the accumulation of a person's ability to carry out a measurable job description through a structured assessment, covering aspects of individual independence and responsibility in the field of work.

6.2 Scope of Learning Assessment

Learning outcomes are expressed in abilities that include elements of competence that include cognitive (knowledge), affection (attitudes and values), and skills (psychomotor and managerial). The cognitive domain describes the mastery of knowledge that includes language intelligence and logic-mathematical intelligence. The affective domain includes attitudes and values or which includes interpersonal intelligence and intrapersonal intelligence, or emotional intelligence. The psychomotor domain includes skills or includes kinesthetic intelligence, visual-spatial intelligence, and musical intelligence. Each domain of these abilities consists of several levels of ability which are presented in Table 6.1, Table 6.2, and Table 6.3.

In student-centered learning or SCL, the assessment method proposed and deemed appropriate is the authentic *assessment* or *performance assessment*, namely an assessment consisting of three basic activities, namely; (1) the lecturer gives assignments; (2) students show their performance; and (3) assessment based on certain indicators with instruments called rubrics. Rubric is an assessment guide that describes the criteria used by lecturers in assessing and giving the level of achievement of student learning or work outcomes. The rubric contains a list of performance characteristics that are expected to be realized in the process and results of student work, and are used as a guide to evaluate each of these characteristics.

Tabel 6. 1 Levels of ability in the cognitive domain

No	Code/Aspect of Ability	Understanding and Verb
	C1/ (Recalling)	Ability to recall newly learned material (recall). Verbs: recognize, describe, name, define, pair, repeat, define, and choose
	C2/ (Comprehension)	The ability to capture the meaning of the learning material. Verbs: classify, explain, summarize, predict, illustrate, describe, and distinguish (eg: concluding a paragraph).
	C3/ (Application)	Ability to utilize learning materials in new/concrete situations. Verb ; demonstrate, calculate, complete, adapt, relate, use, practice, and compose. (eg: using an information/knowledge obtained to solve problems).
	C4/ (Analysis);	Ability to sort/divide material into components so that the organizational structure can be understood. Verbs: find differences, separate, make diagrams, make estimates, draw conclusions, compare, detect, and arrange units. (eg: analyzing the form, type or meaning of a poem).
	C5/ (Synthesis);	The ability to form a new whole; or the ability to combine some information into a conclusion. Verbs : combine, get, formulate, design, compose, rearrange, formulate, predict, and revise. (eg: formulating

		research results in the laboratory
	C6/ (Evaluation)	Ability to consider aspects of value (value) in learning materials; or the ability to consider what is good and what is bad and decide to take a particular course of action. Verbs: weigh, criticize, compare, give reasons, conclude, consider, give opinion and support.

Table 6. 2 Levels of Ability in the Psychomotor Domain

No	Code/Ability Aspects	Definitions and Verbs
1	P1/ *Reflex movements*	reflexes that involve one muscle segment and allow involvement of more than one muscle segment.
2	P2/ *Fundamental movements*	skills related to walking, running, jumping, pressing.
3	P3/*Perceptual Abilities*	skills related to coordination of body movements, visual, auditory.
4	P4/*Physical Abilities*	with respect to endurance, flexibility, dexterity, strength, and speed
5	P5/*Skilled movements*	refers to the dexterity of the game, sports
6	P6/*Nondiscursiv ecommunication*	refers to movement expressions adapted to posture, facial expressions, movements creative (*non-discursive)* = not deviate)

The assessment principles include educative, authentic, objective, accountable, and transparent principles which are carried out in an integrated manner. Educative principles; is an assessment that motivates students to be able to improve planning and learning methods; and achieve graduate learning outcomes. Authentic principles; is an assessment that is oriented towards a continuous learning process and learning outcomes that reflectabilities students'during the learning process. objective principle; is an assessment that is based on standards agreed upon between lecturers and students and is free from the influence of the subjectivity of the assessor and the one being assessed. the principle of accountability; is an assessment carried out in accordance with clear procedures and criteria, agreed upon at the beginning of the lecture, and understood by students. The principle of transparency; is an assessment whose procedures and results are accessible to all stakeholders.

The assessment technique consists of observation, participation, performance, written test, oral test, and questionnaire. Meanwhile, the assessment instrument consists of a process assessment in the form of a rubric and/or an assessment of results in the form of a portfolio or design work. Attitude assessment can use observation assessment techniques. Assessment of mastery of knowledge, general skills, and specific skills is carried out by selecting one or a combination of various assessment techniques and instruments. The final result of the assessment is an integration between various assessment techniques and

instruments used. The meaning of each assessment technique and its assessment instrument is briefly presented in Table 6.3.

Faculties and departments are obliged to set educational assessment standards which include mechanisms, procedures, and instruments for assessing student learning outcomes. Assessment of learning outcomes is carried out to monitor the process, learning progress, and improve student learning outcomes on an ongoing basis. Assessment is used to: a) assess the achievement of student competencies, b) materials for preparing reports on the progress of learning outcomes; and c) improve the learning process.

Table 6. 3 Assessment Techniques and Assessment Instruments

No	Assessment Methods and Techniques	Understanding	Instruments
1	Non-test: Observation	assessment techniques to collect information about student learning activities in participating in learning carried out by lecturers can be used by lecturers themselves or by students to observe each other	Observation Sheet
2	Non-test: Participation	Tests given to the party who takes the test to measure the involvement or role it plays in an activity/activity	Test Sheet
3	Test: Test performance	The test is given to the testee to carry out the Test Sheet for a particular activity according to the competence revealed to demonstrate its performance	Test Sheet
4	Written Test	The test is given the testee who must be answered in writing on the answer	Test Sheet
5	Oral Test	form of formal test that is carried out orally or unwritten, both orders and answers carried out orally	Test Sheet

6	Non-Test	Collecting written data to find out the learning strategies implemented by the lecturers, the methods and learning media used by the lecturers, interests, student perceptions about learning for a subject matter that has been implemented.	Questionnaire
7	Non-formal test	Assessing student document files	Portfolio
8	Non-test	Assessing student ability using a rubric that contains the assessment criteria for eachcategory assessment	Rubric
9	Non-test: authentic	Assessing student work or products in the form of goods or services, including soft copy/hardware	Design work

6.3 Learning Assessment Procedure

The lecturer/team of lecturers prepares an assessment plan in the form of stages, techniques, instruments, criteria, indicators, and assessment weights, as outlined in the SLP, and submitted and agreed upon at the time of the Lecture contract. The assessment planning carried out includes elements of learning achievement of attitudes, knowledge, general skills, and special skills. Attitude assessment is carried out using observation assessment techniques, while knowledge assessment, general skills, and special skills are carried out by choosing one or a combination of participation assessment techniques, performance, assignments, written tests, oral tests, and or questionnaires. The assignment assessment technique is at least 20% and the maximum is adjusted to the characteristics of the course, while for other techniques, it can be determined according to the ability to be built.

Lecturers/Teams of Lecturers/Practicum Assistants/Students carry out assessments using the instruments that have been made. The process assessment instrument is stated in the form of a rubric, and the result assessment can be in the form of a portfolio and/or design work. In addition, the Lecturer/Lecturer Team/Practice Assistant evaluates the results of the assessment based on the indicators, criteria, weights and limits of the Expected Final Ability completion.

In the assessment process, the Lecturer/Team of Lecturers/Assistant are required to provide feedback on the results of the assessment to students, including returning the results of student work, providing comments on the results of existing work, **Learning Management Media (*e-Learning*),** no later than 2 weeks after the assessment. If the score does not meet the completeness criteria, then the Lecturer/Lecturer Team/Assistant conducts remedial teaching for students who do not meet the criteria for completeness and enrichment learning for those who have completed it.

After the research is completed, the lecturer carries out reporting on the final results of the assessment stating the student's success qualifications in the range as shown in the following table:

Huruf	Nilai	Angka	Keterger
A	4.00	≥ 80	Istimewa
AB	3.50	75 ≤ AB < 80	Sangat Baik
B	3.00	70 ≤ B < 75	Baik
BC	2.50	65 ≤ BC < 70	Cukup Baik
C	2.00	60 ≤ C <65	Cukup
CD	1.50	55 ≤ CD< 60	Kurang
D	1.00	50 ≤ D <55	
DE	0.50	45 ≤ DE < 50	Sangat Kurang
E	0.00	<45	

Lecturers/Lecturers/Assistant Teams administer all assessment results that have been carried out. The assessment process can be described as a flow chart as shown in Figure 6.1.

6.3 Entry Learning Assessment

The lecturer carries out the score entry corresponding to the academic calendar and schedule. The late score entry will results in a penalty of the B grade to all students. The entry is accomplished in SISTER using a web browser or the Android application at the Sister For Lecturer (SFL) University of Jember, which can be downloaded on the **Google Play Store.**

The score entry using a web browser, is carried out by selecting the "**Academic**", submenu "**Score**" and selecting the course by clicking "**Entry Score"** and will display pages LIST OF COURSE SCORE. From the LIST OF COURSE SCORE. page, lecturers can choose score entry using an Excel file or the manual method. The entry score using an Excel file begins by clicking the “XLSX (2007) format” button to download the score list file. The lecturer then processes the grade using the score list file in the downloaded form of an Excel file. Lecturers can change the composition or percentage of score according to the number of elements and weights used, provided that the total weight percentage is 100%. Changes in composition can be in the form of replacement and or addition of assessment elements. The number of elements is a measure of the objectivity of the assessment and is a consideration for giving rewards.

Next, the Lecturer uploads the processed score list file, by clicking the button “Upload” on the “Entry Score” menu on the LIST OF COURSE SCORE (in SISTER). Excel score file that have been uploaded will be stored in the SISTER database. As long as the “Print Score" button has not been clicked and the time for entry grade has not ended, the lecturer can make changes to the score using the previous procedure. Meanwhile, if the score entry is carried out manually, the way is by selecting the score qualification in the "Score" cell found on the the LIST OF COURSE SCORE page. The Score Entry using android application is carried out by opening the application Sister For Lecturer (SFL), and selecting the **"Entry Score"** menu, selecting a course, and selecting a grade qualification in the **"Score"** cell. After doing the entry score, Lecturer signed a document printed value courses,

submitted to the Sub Division of Academic and Student Affairs Faculty and subsequently archived. If the Lecturer will make changes to the score outside the period entry score, no later than 10 (ten) days, he can submit an application to the Vice Dean I/Secretary I accompanied by supporting evidence, which will then be forwarded to the Vice Rector I for further processing. Figure 6.2 shows the flow chart entry value that has been described.

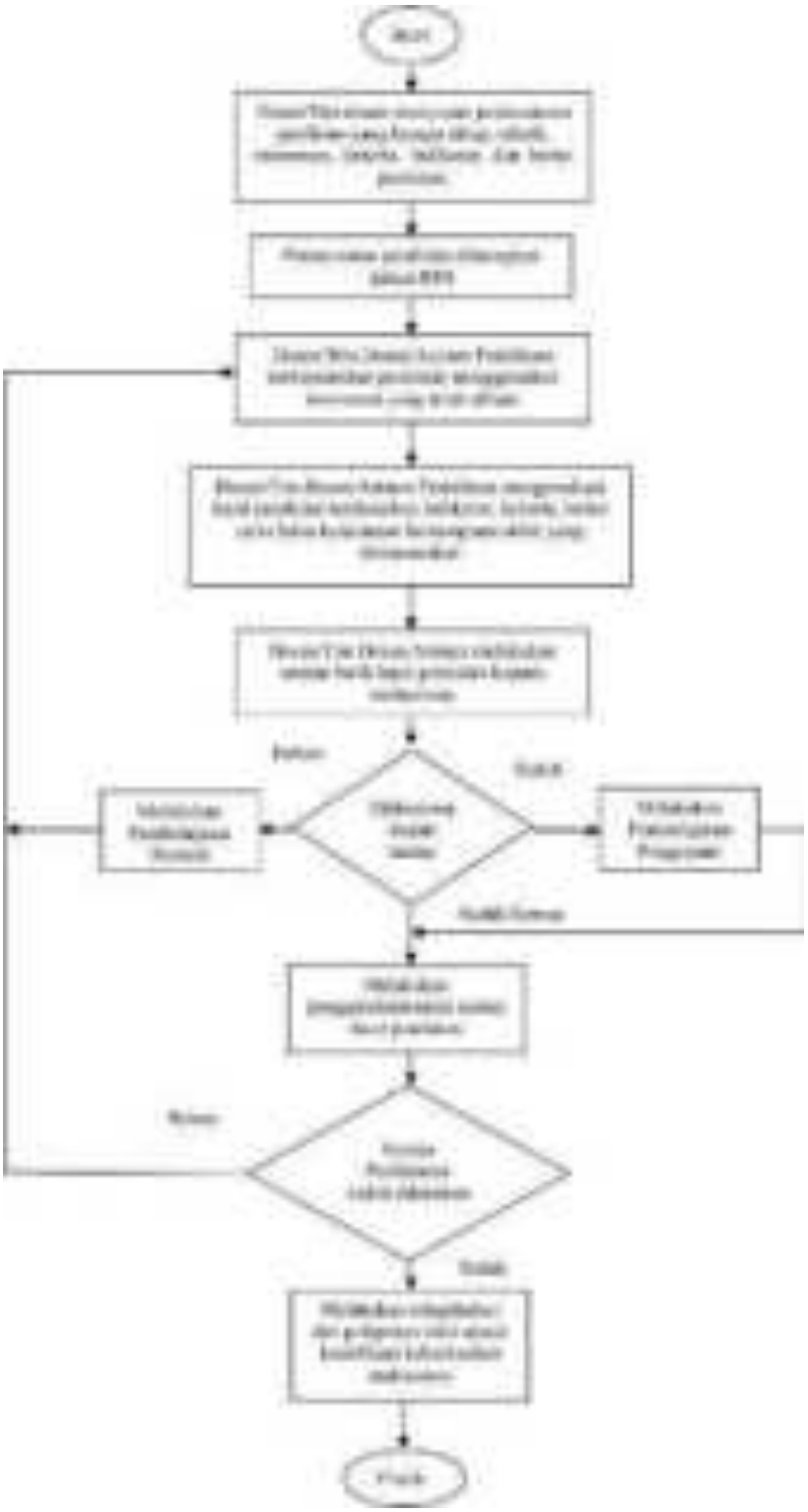
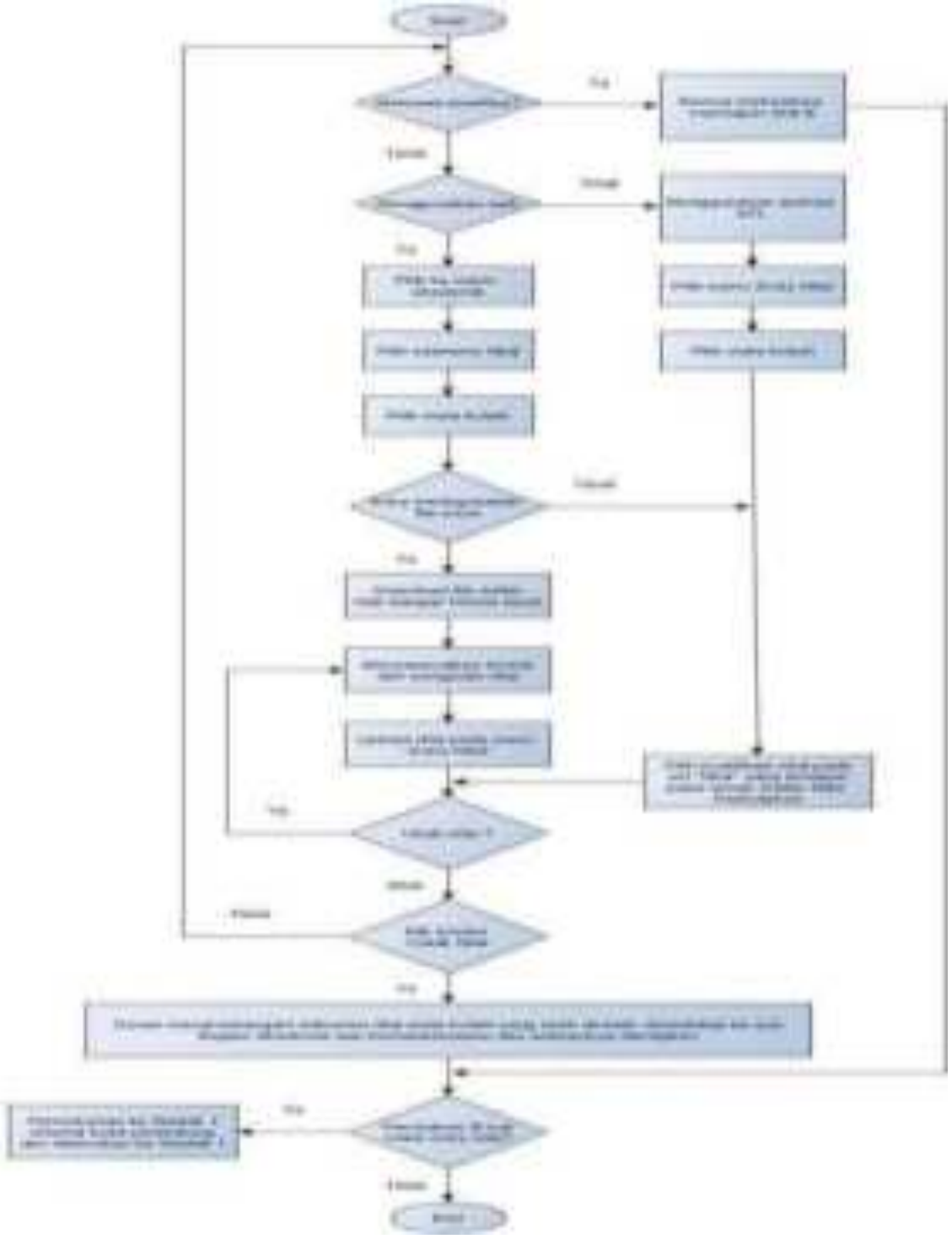


Figure 6.1 Flowchart of Learning Assessment



Gambar 6.2 Flowchart of Entry Score

VII. INTEGRATION OF LEARNING SYSTEM WITH SISTER AND E-LEARNING

7.1 Sister Integration and E-Learning

Unej e-learning is an online learning facility provided by UNEJ and integrated with SISTER. Unej's e-learning utilizes a Moodle-based Learning Management System (LMS) accessible by using a web-browser at the address http://e-learning.unej.ac.id and all Unej lecturers and students can sign in to this system through their Unej SSO account. If the login is successful, E-learning Unej will display a front page (*Dashboard*) which contains several menus and links/*links*, including the menu ***My Course*** which lists links to the course web according to the name of the link. If a course consists of several classes, then each class is given the name of the subject in question followed by the alphabetic characters A, B, C, and so on. By clicking on the link, you will be presented with the course web page and the class.

The list of courses presented on the dashboard is the result of the *plotting of the* lecturer courses by the Study Program Coordinator. The courses and their supporting lecturers will be entered into SISTER by the Prodi operator. Furthermore, courses are offered to students to be taken/programmed and approved by the guardian lecturer during the online study programming period (SPC) before entering the current semester lecture period. Synchronization of courses, lecturers, and participating students from SISTER to the Moodle database is carried out before entering the lecture period at the beginning of the semester and is repeated periodically to anticipate changes in SPC.

7.2 Moodle-based E-Learning System

Moodle has a feature where *administrators* can assign the role of a user with his account as a *student* or *teacher* on each web course. The role of the *student is* owned by the student taking the course, while the role of the *teacher is* owned by the lecturer. The main function of E-learning Unej is to provide a web of courses that can be accessed by students taking these courses. The contents of the web are created and uploaded by the lecturer/support team.

The course web consists of several *sections* , namely a *General Section* and a *Topic Section* which are arranged in a row from top to bottom (See Figure 7.1). Each *section* can be filled with information in the form of writing/text, pictures/illustrations, videos, links, files, or learning activities such as assignments, quizzes, discussions, and others.

Furthermore, the function of the course web for students is as an online medium for:

(1) obtain information about courses which include: course descriptions, syllabus, lecture contracts, learning outcomes, and planned final abilities;
(2) get pre-learning materials;
(3) get learning materials in the form of powerpoint files, *e-books*, and others;
(4) collect/upload assignments in the form of files;
(5) discussion;
(6) carry out exams/quiz; and
(7) obtain information about the value achieved.

As for lecturers, the function of the course web is as an online media for:

(1) submit detailed information on courses;
(2) submit semester learning plans;
(3) carry out online lectures when unable to attend class (terms and conditions apply);
(4) share /*share* lecture material;
(5) give homework;
(6) create and archive exam questions in the question bank;
(7) planning and supervising exams /*quizzes*; and
(8) perform assessments and feedback.

The appearance of a course web (coloring, illustration, font selection, etc.) is entirely dependent on the lecturer, but the minimum standards of *content that* must be met need to be set out in a guide. Supervision of course content is needed so that the quality of learning at Unej is getting better and more accountable. Related to this, Moodle has a facility *logger* that records all user activities on e-learning. Moodle recording data is read by the system for further processing which can provide information regarding:

(1) completeness of learning devices;
(2) who uploaded the completeness and when it was done;
(3) a recap of the learning activities of a class/course;
(4) recap of a lecturer's learning activities;
(5) the suitability of the learning materials carried out with the semester learning plans;
(6) and others.

7.3 Data of Learning in E-Learning

The minimum standards for filling out web courses in e-learning are as follows: In the General Section, the name is written as "LEARNING EQUIPMENT" which contains:

(1) a description of the course description;
(2) formulation of course learning outcomes;
(3) SLP file (semester learning plan) in pdf format;
(4) syllabus files and reading resources; and
(5) study contract file.

At each lecture meeting, a Topic Section can be created/added with a name in the form of a brief description (maximum 255 letters) of the subject/study material and other activities such as discussions, assignments, and others.

(1) the title of the topic/study material according to the SLP;
(2) formulation of EFA (planned final capability) according to SLP;
(3) learning strategies according to SLP;
(4) teaching material files (ppt, pdf, etc.);
(5) assignments (if required); and
(6) quiz (if needed).

Here are some *screenshots* from Unej e-learning as a reference for the description above. Figure 6.1 shows an example of an empty course web structure consisting of a General Section and a Topic Section. *The General Section* has a *default activity* in the form of "Announcements" that can be changed with *activity*. Another *Topic Section* can be added for each meeting/face-to-face.

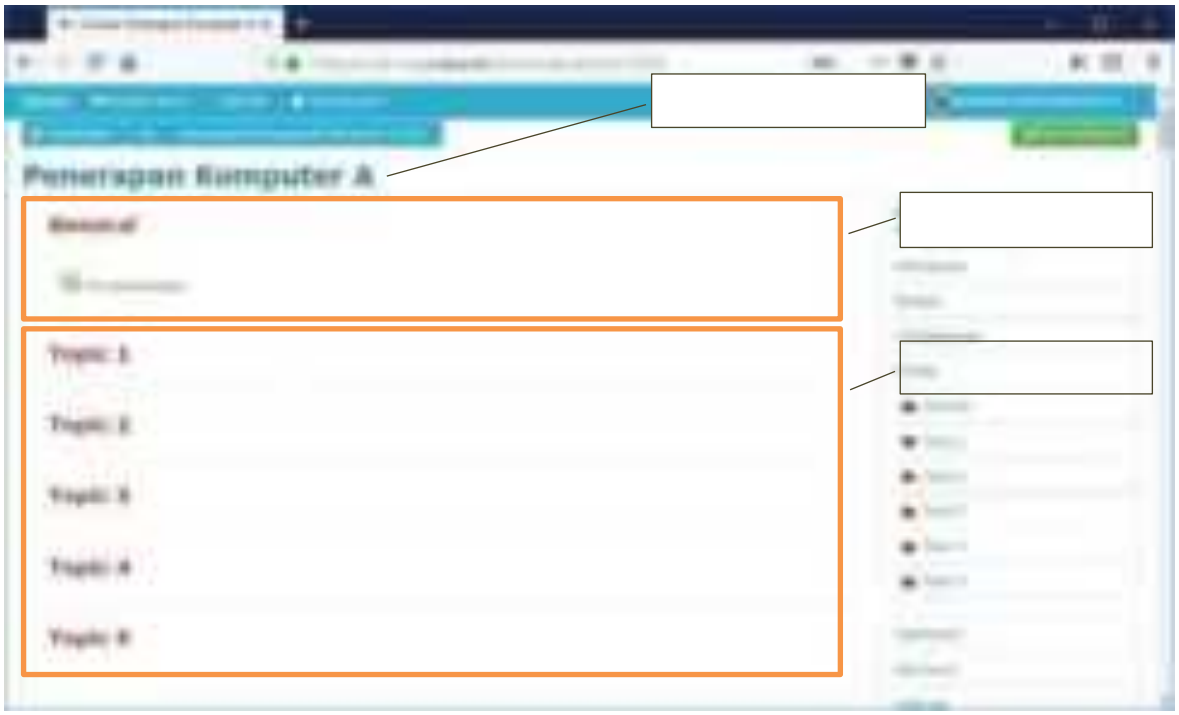


Figure 7.1 Web Structure of Courses in E-learning

Related to learning management, the presence of lecturers and learning journals every face-to-face meeting will be monitored by SISTER according to the class schedule and presented in tabulated form on the web: http://sister.unej.ac.id/perkuliahan/. In order for the presence of lecturers and lecture journals to be read by the system, the following provisions must be implemented:

(1) Topic title/name in the form of a brief description (maximum 255 letters) of the subject/study material and other activities such as discussions, assignments, and others.

(2) During lecture hours according to the schedule, the lecturer must login to e-learning using a WiFi network with the SSID name according to the name of the lecture hall.

(3) Students carry out attendance using theapplication *mobile* SFS (Sister for Student)to scan the *QR Code* provided in each classroom. Devices *Mobile* that are used must be connected to the network via the SSID classroom.

7.4 Space Upgrades Use of E-Learning

To acquire knowledge and skills in editing to web courses and e-learning in general, each teacher can take one of the following ways:

(1) participating in short training held periodically by institute for learning;

(2) reading the tutorial book provided;

(3) viewing video tutorials that have been provided on Youtube; or

(4) consulting directly to the E-learning Helpdesk at institute for learning or other lecturers who have participated in the ToT organized by institute for learning.

VIII. STUDENT CENTERED LEARNING MODEL

Student-centered learning models include 1) small group discussion, 2) role playing and simulation (role-play & simulation), 3) case study, 4) Discovery Learning (DL) , 5) self-directed learning (SDL), 6) cooperative learning (cooperative learning/Cl), 7) collaborative learning (collaborative learning/CBL, 8) contextual learning (CL), 9) project-based learning (project -based Learning/PBL), and 10) problem-based learning and inquiry (problem-based learning/inquiry). The characteristics, activities, application techniques, and learning orientation that can be built are presented in the following sub-chapters.

In choosing the SCL learning model, several things need to be considered, namely learning achievements, student characteristics, study materials, learning situations and contexts, availability of facilities & infrastructure, and time. Learning methods must be adapted to EFA. Likewise, the model applied must pay attention to the characteristics of students, including the level of ability, and student learning styles. The type of study material, such as procedural, hierarchical, or mixed. also determine in choosing a learning model. The situation and context of learning will greatly affect student success. Another important factor that determines the learning model is the availability of facilities and infrastructure because it can optimize the application of the selected model. Another factor is time. The long or short duration of time will determine the model to be chosen in learning.

8.1 Small Group Discussion

Discussion is an element of active learning. Activities in small group discussions can be in the form of: (a) generating ideas, (b) concluding important points, (c) accessing skill levels and knowledge, (d) reviewing topics in previous classes, (e) reviewing exercises, quizzes, writing assignments, (f) processing learning outcomes at the end of the lesson, (g) commenting on the course of the class, (h) comparing theories, issues, and interpretations, (i) solving problems, and (j) brainstorming. The learning steps with the SGD model are presented in Table 8.1, and the LO targets that can be built using the SGD learning model are presented in Table 8.2.

Table 8. 1 Learning Steps of the SGD Model

No	Steps:
1	Lecturer forms small groups of students (5 to 10 people) to discuss the materials provided or materials obtained by the group members themselves
2	Students are asked to learn to work together for a joint task
3	Students designed to be good listeners,
4	Students are given a conducive situation in giving and receiving constructive batik feedback
5	Students are trained to respect differences of opinion,
6	Students are trained to support opinions with evidence, and
7	Lecturers and students to respect different points of view (gender) , culture, etc.).

Table 8. 2 Linkages Model of SGD and LO target

Deskriptor INQF	Learning Outcomes	SGD 1	SGD 2	SGD 3	Justification
1	Job Skills			✓	Students in workpractice less
2	Mastery of Knowledge				Students will master the knowledge that has been discussed
3a	Managerial Capabilities 1		✓		Students learn to take good decisions independently and in groups
3b	Managerial Capabilities 2				Students learn to be responsible for their own work and in groups
4	Attitudes and Score				Student opportunities to learn to respect people
Remarks:	1: Not recommended	2:recommended		3: Highly recommended	

8.2 Case Study

Case study model, can used in SCL learning, namely to study real cases or previously designed cases. The case study model is very appropriate to train the ability to develop problem solving abilities/skills. In addition, it can also be used to increase awareness and knowledge about a problem, way of working, or approach commonly used in an organization. This model or approach is also often used in non-formal education, such as training, in the simplest form to the most complex.

In this model, the lecturer provides a description of a situation that requires the actor in that situation to make certain decisions to solve a problem. Case studies are usually presented in the form of stories that contain main components such as actors, certain events or situations, problems, and information behind the problems. There are also cases that have been accompanied by several alternative solutions to the problem. Based on the information presented in the case, students choose an alternative solution that is considered the most appropriate based on an understanding of the problem, analysis, and comparison of available alternative solutions.

One of the factors that determine the success of learning is the mental involvement of students in the learning process through the opportunity to experience certain conditions or situations as they occur in reality (experiential learning). This involvement will make the learning process interesting and relevant for students. The purpose of the case study model is to teach students through experience by using examples of situations or cases used.

In general, this model aims to: 1) help participants develop and sharpen their analytical, problem-solving, and decision-making skills; 2) make participants have an understanding of various value systems, perceptions, and certain attitudes related to certain situations or problems; 3) show participants the role and influence of various values and perceptions on decision making; 4) achieve group synergy in solving a problem.

Implementation of a simple case study model takes 15-30 minutes, while a fairly complex case study will take 60 minutes or more. The manner in which case studies are presented also has implications for timing. Case studies that have been equipped with alternative problem solving take less time than those that are not. However, case studies that are not equipped with alternative problem solving will provide greater opportunities for students to find answers to problems on their own. In the maize action case study, which is equipped with several alternative answers, and each group's answer will be given feedback by the lecturer until the group makes a decision which according to the lecturer is the right decision, it takes longer.

Table 8. 3 Steps of Learning Case Study Model

No.	Langkah
1	Preparation 1) Identify and arrange cases to be discussed in written form; 2) Determine troubleshooting procedures, accompanied by alternative solutions to the problem. 3) Prepare class layout as needed for group discussion.
2	Introduction: The lecturer divides the participants into groups of 4 - 7 people. Lecturers distribute case studies that are prepared in writing. Lecturer explains learning objectives and case study scenarios (facts or by designed)
3	Core Activities: Identifying facts, concepts in cases, and connecting various information in cases. Each group discusses the case presented and conducts an analysis by looking at the causes and various related factors; then the group concludes the problem, looks for alternative solutions and determines the best problem-solving option;
4	Closing: Each group presents the solution of the chosen problem and the reason The lecturer concludes the results of the case study.

Table 8. 4 Roles and Duties of Lecturers in the Case Study Learning Model

No.	Roles and duties of lecturers
1	Prepare cases to be discussed based on the LO to be achieved.
2	Determine the procedure for discussing case studies, whether to be analyzed individually or in groups, and the time allotted for discussing cases in groups.
3	During the group discussion process, the lecturer is only in charge of observing, except when necessary to provide additional information needed by the group.
4	The key to the success of the case study is the "involvement" of the participants, therefore teachers need to pay attention to ensuring that each participant has the opportunity sameto actively participate.
5	After the group discussion time is up, the lecturer calls the group to regroup in the form of a class and reports the results of the discussion in the form of the results of the analysis and solution of the selected problems.
6	The lecturer summarizes and concludes the learning outcomes. This opportunity can be used to bridge theory and practice. Lecturers can clarify what the group has learned and ask the group about impressions their of the learning process and results.

Table 8. 5 Relationship of Case Study Model with LO target

INQF Descriptor	Learning Outcome	Case Study			Justification
		1	2	3	
1	Workability		✓		Students in practicing work lack
2	Mastery Knowledge			✓	Students will master the knowledge that has been discussed
3a	Managerial Ability 1			✓	Students learn to make decisions either independently or group
3b	Managerial Ability 2			✓	Students learn responsibility on his own work and group
4	Attitudes and Values			✓	Students opportunities to learn to respect others

Specification; 1; Not Recommended 2; Recommended 3; Highly Recommended

8.3 Role-Play and Simulation

Role-playing and simulation is learning with the concept of : (1) bringing a situation that is similar to the real thing into the classroom, (2) students doing work or roles according to the real thing in the field (business/work) to implemented in the classroom, and (3) students perform assignments in class to show certain characters. In *role play & simulation*, situations are created, created, and/or scripted by the lecturer by taking into account the conditions of the class, students, and available resources. Role playing and simulations are also expected to change the mindset of students towards things that were previously believed or understood.

For example, for the instrumentation application course, students are asked to create a fictitious company engaged in instrumentation applications. Then, the company is asked to do what a real company does in providing services to its clients, for example, conducting an auction process (*bidding*). In the above example, each student can be given the role of each, for example, as a director, engineer*(engineer),*and marketing

Table 8. 6 Steps of Learning Role Playing Model

No.	Steps :
1	Lecturers group students according to the topic or role or simulation that will be carried out by students, in this case we call role *playing*;
2	Students are asked to practice or demonstrate general skills (eg verbal and nonverbal communication), especially abilities in a team (group),
3	Students are asked to demonstrate special abilities, especially in relation to developing skills problem-solving,
4	Students are asked to to demonstrate their synthesis and analysis skills
5	Students are given simulation *exercises and simulation games with* or without computer assistance (ICT).

Table 8. 7 Relationship between SLP Model and LO target

INQF Descriptor	Learning Outcome	Role and Play			Justification
		1	2	3	
1	Job Skills			✓	Students learn to practice work
2	Mastery of Knowledge			✓	Students will master the knowledge that has been practiced
3a	Managerial Ability 1		✓		Students in learning to make decisions both independently and in groups are still lacking
3b	Managerial Ability 2			✓	Students in the learning responsible for its own work
4	Attitudes and Values			✓	students the opportunity to learn to appreciate the attitude and values

Remarks; 1; Not Recommended 2; Recommended 3; Highly recommended

8.4 Discovery Learning (DL)

Discovery Learning (DL) or guided discovery is a learning method that is focused on utilizing available information, both provided by lecturers and those sought by students themselves, to build knowledge by means of independent study. DL is a combination of student-centered teaching techniques and lecturer guidance. Lecturers provide more experiences for students to explore prior knowledge and guide students to form concepts. The involvement of students in investigations and searches will help them to arrive at valid conclusions, be skilled, and understand concepts. Search activities provide concrete experiences to help students understand and remember abstract ideas without being memorized by heart. Before carrying out DL, lecturers need to be really prepared, especially in choosing topics and possibilities that will occur during the learning process.

The things that need to be considered in designing DL are: 1) what topics will be taken, 2) what kind of problem or question is needed, 3) what will be found, 4) how the process is, 5) what is needed, 6) is there anything that needs to be discussed further, 7) is there anything that students need to do individually, 8) is there any implication of the findings that students need to do, and 9) what sources are known or previously studied. While the 5 roles of lecturers that can be carried out include: planning learning, presenting the required subject matter (presentation is not in final form), paying attention to the cognitive level of students (the presentation method is recommended to follow the rules of presentation from enactive, iconic, and symbolic), the lecturer should act as a teacher. supervisor or tutor, and assessing student learning outcomes.

Table 8. 8 Steps of Learning Discovery Learning

No.	Steps
1	Giving questions/problems, students are asked to understand the problem.
2	Development of data, students are asked to look for/point toother possibilities.
3	In compiling the data, students are asked to enter the results of item (2) in one table.
4	Addition of data (if there is still no pattern to be found, students are asked to add data).
5	*Prompting* (if it is still not considered complete, students are asked to add data not in units).
6	Examination of the results

Table 8. 9 Relation of the DL Model with Target LO

INQF Descriptor	Learning Outcome	Discovery Learning	Justification
1	Work ability		There is less opportunity for students to practice work skills.
2	Knowledge Mastery		Students master knowledge through guided discovery.
3a	Managerial Ability 1		Students learn to make decisions both independently and in groups.
3b	Managerial Ability 2		Students learn to be responsible for their own work
4	Attitudes and Values.		Opportunities for students to learn to respect others are lacking.

Information; 1; Not Recommended 2; Recommended 3; Highly recommended.

8.5 Self-Directed Learning (SDL)

Self-Directed Learning (SDL) is a learning process carried out on the student's own individual initiative. This learning method is useful for realizing and empowering students, that learning is their own responsibility. In other words, individual students are encouraged to be responsible for all their thoughts and actions. The learning method Student Directed Learning (SDL)can be applied if the following assumptions are met, namely, as adults, students' abilities should shift from being dependent on others to individuals who are able to learn independently.

The principles used in Student Directed Learning (SDL) are (a) experience is a very useful learning resource, (b) learning readiness is the initial stage of becoming an independent learner, and (c) adults are more interested in learning from problems than from course content. There are two directions that can be developed, namely, students learn independently about certain topics and then discuss them with the lecturer, or the lecturer gives direction to students about topics that must be self-taught and their analysis. Recognition, appreciation, and support for the adult learning process need to be created in a learning environment. In this case, lecturers and students must have a complementary spirit in the search for knowledge.

Table 8. 10 Steps of Self-Directed Learning (SDL)

No.	Steps :
1	The lecturer provides direction, guidance, and confirmation of the learning progress that has been made by students.
2	Students do individual planning of the learning experience that has been undertaken
3	Students do self-taught learning so that they get the expected learning experience.

4 Students do an individual assessment of the learning experience that has been obtained

5 Lecturers act as facilitators

Table 8. 11 Table of Relation of the SDL Model with LO targets

INQF Descriptor	Learning Outcome	SDL			Justification
		1	2	3	
1	Workability		✓		Untrained work ability
2	Mastery Knowledge		✓		Mastery of knowledge can not be too deep
3a	Managerial Ability 1			✓	Students learn to make decisionseither independently or group
3b	Managerial Ability 2			✓	Students learn responsibility on his own work
4	Attitudes and Values		✓		Opportunities for students to learn to respect others are lacking.

Information; 1; Not Recommended 2; Recommended 3; Highly recommended

8.6 Cooperative Learning (CL)

Cooperative Learning (CL) is a group learning method designed by lecturers to solve a problem/case or do a task. The group consisted of several students, who had various academic abilities. The method is very structured because of the formation of groups, the material discussed, the discussion steps, and the final product that must be produced, determined and controlled by the lecturer. In this case, students only follow the discussion procedure designed by the lecturer.

Basically cooperative learning (CL) like this is a combination of teacher-centered learning and student-centered learning. This method is useful for helping to grow and hone (a) active study habits in students, (b) a sense of responsibility for individuals and groups of students, (c) the ability and skills to work together among students, and (d) students' social skills.

Tabel 8. 12 Table 8. 12 Steps of Cooperative Learning (CL)

No.	Steps :
1	**Students Teams Achievement Divisions (STAD)**
	1. Students are formed in study groups (4 or 5 people) of various abilities, gender, and ethnicity. 2. Lecturer presents the mated core (class presentation) 3. Students work in groups to ensure that all group members have mastered the material. 4. Students face individual tests 5. Lecturer awards group

2	**Jigsaw**
	Students work in groups as in STAD. Students are given material to study. Each group member is randomly assigned to become an expert on a certain aspect of the material. After reading the material, "experts" from different groups gather to discuss their topic and then return to their original group to teach the topic they are good at to their group mates. Tests or other assessments are given on all the given topics. Here is presented the link between the cooperative learning model and the achievements learning.

Table 8. 13 Relation of Cooperative Learning (CL) Model with LO target

INQF Descriptor	Learning Outcome	CL			Justification
		1	2	3	
1	Workability		✓		Untrained work ability
2	Mastery Knowledge			✓	Stronger knowledge mastery
3a	Managerial Ability 1			✓	Students learn to make decisions either independently or group
3b	Managerial Ability 2			✓	Students learn responsibility on his own work
4	Attitudes and Values			✓	Students learn to respect other people based on predefined rules

Description: 1: Not recommended 2: Recommended 3: Highly Recommended

8.7 Collaborative Learning (CbL)

Collaborative Learning (CBL) is a learning method that focuses on cooperation among students based on the consensus that was established by members of the group. Problems, assignments, and cases do come from the lecturer and are open ended. However, the formation of groups based on interests, group work procedures, determining the time and place for discussion or group work, up to how the results of the discussion or group work want to be assessed by the lecturer, are determined through mutual consensus among group members.

Collaborative learning method is a learning method that focuses on the success of the process. In contrast to the cooperative learning method, which focuses on results. Literally both mean working together. Collaboration comes from Latin, while cooperative comes from English (America). Collaboration refers to the philosophy of interaction and personal lifestyle, while cooperation describes an interaction structure designed to facilitate the achievement of a particular outcome or goal. Collaborative learning method assumes the importance of cooperative cooperation, working together in the community. In one community or group there is no competition, but rather cooperation to achieve common goals.

An important element in the collaborative learning method is the deeper understanding that students gain. Utilizing the internet, or providing initial material as a

unique introduction and provoking students to delve deeper into the material is an effective way to provide basic understanding for students. The steps of collaborative learning are almost the same as cooperative learning with some differences which are presented in Table 8.15

Table 8. 14 Steps of Cooperative Learning (CL)

No.	Steps :
1	Tasks given by lecturers in collaborative learning emphasize open ended, meaning that students get results or answers that vary but are both correct. Collaborative learning refers to the philosophy of interaction and personal lifestyle,
2	While learning more cooperative interaction illustrates a structure designed to facilitate the achievement of a certain result or purpose

Table 8. 15 Table of Relation of Model Collaborative Learning with LOTarget

INQF Descriptor	Learning Outcome	Colaborative Learning			Justification
		1	2	3	
1	Workability			✓	workability can be trained well because it is open ended
2	Mastery Knowledge		✓		Mastery of knowledge less steady
3a	Managerial Ability 1			✓	Students learn to make decisionseither independently or group
3b	Managerial Ability 2			✓	Students learn responsibility on his own work
4	Attitudes and Values			✓	Students learn to respect other people based on predefined rules

Description: 1: Not recommended 2: Recommended 3: Highly Recommended

8.8 Contextual Instruction (CL)

Contextual Learning (CL) is a learning concept that helps lecturers relate course content to real situations in everyday life and motivates students to make connections between knowledge and its application in everyday life as community members, professional or managerial actors, entrepreneurs, and investors. For example, if the competency required by the course is that students are able to analyze the factors that influence buying and selling transactions, then in the learning process, in addition to the concept of the transaction being discussed in class, examples are also given.

Students are also given assignments and opportunities to go directly to trading centers to observe directly the process of buying and selling transactions, and even being directly involved as one of the perpetrators, as buyers, for example. At that time, students can make direct observations and study them with various existing theories, until they can analyze what factors affect the process of buying and selling transactions. The results of

the involvement, observations and studies are then presented in class, to be discussed and accommodate suggestions and other input from all class members. In essence, with Contextual Learning (CL), lecturers and students use knowledge together to achieve the competencies required by the course, and provide opportunities for everyone involved in learning to learn from each other. Practical steps for using Contextual Learning/Contextual Learning strategies are presented in Table 8.16 and the relationship between the contextual learning model and learning outcomes is presented in Table 8.17.

Table 8. 16 Steps of Cooperative Learning (CL)

No.	Steps
1	Relating each topic or discussion to aor institution successful person.
2	Finding successful ways that the figures/institutions in applyapplying knowledge.
3	Formulating and showing clear and specific benefits to students related to the knowledge (discussion) taught to them.
4	The topics studied are designed to motivate students to repeat and relate them to their daily lives.
5	Giving freedom to students to construct the knowledge they receive subjectively so that students can find their ownway of naturallearning that suits them.
6	Exploring the richness of emotions and let students express them freely
7	Guiding them to use emotions in every lesson so that students are full of meaning (not in vain in learning).

Table 8. 17 Relationship of Model Contextual Learning with LO target

INQF Descriptor	Learning Outcome	*Contextual Learning*			Justification
		1	2	3	
1	Workability			✓	Work skills can be trained well because it is contextual
2	Mastery Knowledge			✓	Masterymore solid knowledge
3a	Managerial Ability 1			✓	Students learn to make decisionseither independently or group
3b	Managerial Ability 2			✓	Students learn responsibility on his own work
4	Attitudes and Values			✓	Students learn to respect other people based on rules predefined

Description: 1: Not recommended 2: Recommended 3: Highly Recommended

8.9 Project-Based Learning (PjBL)

Project-Based Learning (PjBL) is a learning method that is systematic, which involves students in learning knowledge and skills through the process of finding or extracting*(inquiry)*long and structured to questions authentic and complex and carefully designed tasks and products. Project Based Learning*(Project-Based Learning*/ PjBL) is a learning model that uses the project / activity as a medium. Learners conduct exploration, assessment, interpretation, synthesis, and information to produce various forms of learning outcomes.

Project-Based Learning is a learning method that uses problems as the first step in collecting and integrating new knowledge based on experience in real activities. Project-Based Learning is designed to be used on complex problems that students need to investigate and understand. Through PjBL, the inquiry process begins by raising a guiding *question* and guiding students in a collaborative project that integrates various subjects (materials) in the curriculum. When questions are answered, students can directly see the main elements as well as various principles in a discipline that is being studied. PjBL is an in-depth investigation of a real world topic, it will be valuable for the attention and effort of students.

Given that each student has a different learning style, Project-Based Learning provides opportunities for students to explore content (material) using various means that are meaningful to themselves, and to conduct collaborative experiments. Project Based Learning is an in-depth investigation of a real world topic, it will be valuable for the attention and effort of students. Project-Based learning steps are presented in Table 7.18 and the relationship between the PjBL model and learning outcomes is presented in Table 7.19.

Table 8. 18 Project-Based Learning Steps

No.	Steps
1	Providing problems or challenges posed to students;
2	Facilitating students to design processes to determine solutions to problems or challenges posed;
3	Facilitating students to make decisions about a framework ;
4	Facilitating students collaboratively to be responsible for accessing and managing information to solve problems;
5	Facilitating students periodically to reflect on the activities that have been carried out;
6	Carrying out a continuous evaluation process;
7	Conducting a qualitative evaluation of the final product of learning activities; and
8	Learning is very tolerant of mistakes and changes.

Table 8. 19 Relationship of PjBL Model with LO target

INQF Descriptor	Learning Outcome	*Project Based Learning*			Justification
		1	2	3	
1	Workability			✓	Students practice working on projects related to the ability to work
2	Mastery Knowledge			✓	Students a better understanding of knowledge throughwork project
3a	Managerial Ability 1			✓	Students learn to make decisionseither independently or group
3b	Managerial Ability 2			✓	Students learn responsibility on his own work
4	Attitudes and Values			✓	Students learn to respect other people based on predefined rules

Description: 1: Not recommended 2: Recommended 3: Highly Recommended

8.10 Problem-Based Learning/Inquiry

Problem-Based Learning/inquiry is learning by utilizing problems and students must search or extract information (*inquiry*) to be able to solve the problem. In general, there are four steps that students need to take in this method, namely (a) accepting problems that are relevant to one or several competencies required of the course from the lecturer; (b) search for relevant data and information to solve problems; (c) organize data and relate data to problems; and (d) analyze problem-based learning and exploration problem solving

strategies. The steps in problem-based learning are presented in Table 8.20 and the relationship between the Problem Based Learning model and the CP target is presented in Table 8.21.

Table 8. 20 Steps of Problem-Based Learning

No.	Steps
1	Formulating the problem. The lecturer guides the students to determine the problem to be solved in the learning process, even though theactually lecturer hasdetermined the problem.
2	Analyzing the problem. Students review the problem critically from various points of view.
3	Formulating hypotheses. Students formulate various possible solutions according to their knowledge.
4	Collecting data. Students look for and describe various information needed to solve problems.
5	Hypothesis testing. Students formulate and draw conclusions in accordance with the acceptance and rejection of the proposed hypothesis.
6	Formulating problem solving recommendations. Students describe recommendations that can be made according to the formulation of the results of hypothesis testing and the formulation of conclusions.

Table 8. 21 Relation of Model Problem Based Learning with LO Target

INQF Descriptor	Learning Outcome	Cooperative Learning			Justification
		1	2	3	
1	Workability			✓	If the given problemrelated directlyto the ability to work
2	Mastery Knowledge			✓	through the problem, students can master the concepts in detail and depth
3a	Managerial Ability 1			✓	Students learn to make decisionseither independently or group
3b	Managerial Ability 2			✓	Students learn responsibility on his own work
4	Attitudes and Values			✓	Students learn to respect other people based on rules predefined

Description: 1: Not recommended 2: Recommended 3: Highly Recommended

8.11 Research-Based Learning (RBL)

Linguistically, the term *Research Based Learning* (RBL) uses English which means research-based learning or research. This model is one of the learning models used to activate learning both in the activities of students and teachers in the learning process.

According to Dafik (2015: 6) RBL is a learning method that uses *contextual learning, authentic learning, problem-solving, cooperative learning, hands on & minds on learning,* and an *inquiry discovery approach*. The target of implementing RBL is to encourage the creation of higher-order thinking skills in lecturers and students. Students are not only filled with information and knowledge but must be taken to a high level, namely *creating or communicating*. Achievement to this level in learning theory is known as the achievement of higher order thinking skills.

Linguistically, the term *Research Based Learning* (RBL) uses English which means research-based learning or research. This model is one of the learning models used to activate learning both in the activities of students and teachers in the learning process. According to Dafik (2015: 6) RBL is a learning method that uses *contextual learning, authentic learning, problem-solving, cooperative learning, hands on & minds on learning,* and an *inquiry discovery approach*. The target of implementing RBL is to encourage the creation of higher-order thinking skills in lecturers and students. Students are not only filled with information and knowledge but must be taken to a high level, namely *creating or communicating*. Achievement to this level in learning theory is known as the achievement of higher order thinking skills.

Meanwhile, Khamdit (2014: 11) explains that:

"RBL is a learning approach emphasizes on learning by practicing, learning from real situations, creating outcome from thinking process, functioning systematically, forming knowledge individually, using the research process to solve problems, eliciting answers from the query and analyzing the data on their own. This approach will inspire students to develop their potential in all areas".

Khamdit's explanation can be interpreted that *Research based learning* is a learning approach that emphasizes learning with practice, learning from real situations, producing something from the thought process, functioning systematically, forming individual knowledge, using the research process to solve problems, generating answers to doubts. and analyze their own data. This approach will inspire students to develop all their potential.

RBL is also amethod *student-centered learning* (SCL)that integrates research into the learning process. RBL is *multifaceted* which refers to various learning methods. RBL provides opportunities/opportunities for students to seek information, formulate hypotheses, collect data, analyze data, and make conclusions on the data that has been compiled; In this activity, learning by using the "approach applies*learning by doing*" (UGM 2010: 4). Therefore, RBL opens up opportunities for the development of learning methods, including:

a) Renewal of learning (curriculum enrichment) by integrating research results,
b) Active participation of students in conducting research, learning by using research instruments, and
c) Development of an inclusive research context (students study research procedures and results to understand the intricacies of synthesis).

From the explanations of the experts above, it can be concluded that *Research Based Learning* (RBL) is a method *student-centered learning* (SCL)that uses *contextual learning, authentic learning, problem-solving, cooperative learning, hands on & minds on learning,*

and *inquiry discovery. approach* so that the method can inspire students to develop all their potential and produce something from their thinking process.

IX. CONCLUSION

Planning and implementation of learning is one of the keys to the success of producing qualitfied graduates. Therefore, this handbook are compiled as an effort to provide a reference for lecturers in carrying out these two things. Planning and implementation of learning at the University of Jember has also been integrated with a web-based system, namely SISTER, an application specifically developed for learning, management, and others at the University of Jember and an e-learning system adopted from the Moodle system.

This manual will also be an integral part of the quality assurance system for the University of Jember. Because with this handbook, documents will be produced for the implementation of monitoring and evaluation. In addition, the guidelines will also produce documents for accreditation and certification of both study programs and institutions.

The rapid development of learning also requires special wisdom in the implementation of this guide. Within a certain time, this guide will also need to be reviewed, given its relevance which may have diminished. However, I hope that this guide will be able to provide strategic meaning for the development of learning in particular and for the development of institutions and society in general.

BIBLIOGRAPHY

Arifin, P. 2010. *Research Based Learning*. Bandung: Bandung Institute of Technology.

Dafik. 2015. *Handbook for the Implementation of RBL (Research-Based Learning) in the Courses. Jember* : University of Jember.

Directorate General of Learning and Student Affairs, Ministry of Research, Technology and Higher Education, 2016. *Guidelines for the Preparation of the Higher Education Curriculum*. URL: https://drive.google.com/open?id= 0B7445iemftkMdkRjTko5RHlMVG8 [accessed August 23, 2017]

Hobri, 2009, *Innovative Learning Models*, Jember : Center for Society Studies

Moore, DK, 2009, *Effective Instructional Strategies, From Effective Instructional Strategies, From Theory to Practice*, United State of America : SAGE Publications, Inc.

Singh, Vandana. 2014. *Research Based Learning: An Igniting Mind. International Journal For Research In Education* (IJRE) (Impact Factor 1.5), Icv: 6.30, Vol.3, Issue:6, Oct.-Nov. : 2014 (Ijre) Issn: (F) 2347-5412 Issn: (O) 2320-091x.

Slamet et al. 2016. *Development of Research-Based Learning Models to Improve Higher Level Thinking Skills. Proceedings of the National Scientific Works Concert* Vol. 2, August 2016 | ISSN: 2460-5506, p. 213-228

Taufiq, Akhmad, 2014. "Changes in Educational Paradigm and Multicultural Political Struggle: Notes for the Cultural Institutional Revolution." In Adzkiyak (ed.). 2014. *Civil Society: Thoughts of the Movement towards a New Path*. Yogyakarta: Graha Ilmu.

UGM team. 2010. *Handbook of Research Based Learning*. Yogyakarta: Gadjah Mada University.

Yawen Li. 2015. Enhancing undergraduate education through research based learning: a longitudinal case study. *122nd ASEE Annual Conference & Exposition*, june 14-17 2015, Seattle, WA

Zaini H, Munthe, B & Aryani, SA, 2007, *Active Learning Strategies*, Yogyakarta: Center for Teaching Staff Development (CTSD)

Nur Wadani, P., et al. 2016. *Guidelines for the Preparation of the Higher Education Curriculum.* Director General of Belmawa, Kemenristekdikti. Jakarta.

ATTACHMENT

EXAMPLES OF DOCUMENTS IN LEARNING DESIGN

GRADUATES LEARNING OUTCOMES (GLO)

CHEMICAL ENGINEERING UNDERGRADUATE (S1) STUDY PROGRAM

ATTITUDE (A)
A. Fear of God Almighty and able to show a religious attitude; B. Able to participate in a multidisciplinary team; C. Understanding of professional and ethical responsibilities; D. Ability to communicate effectively; E. Awareness of the importance of lifelong learning and the ability to live it; F. Knowledge of contemporary issues.; G. Uphold law enforcement and have the spirit to put the interests of the nation and the wider community first;
MASTERY OF KNOWLEDGE (MoK)
A. Able to apply knowledge of mathematics, science and Engineering/Chemical Engineering; B. The scope of knowledge is broad enough in the field of Engineering/Chemical Engineering to be able to understand the impact of the technical actions taken on society and the global world;
GENERAL SKILLS (GS)
A. Able to design and run experiments as well as analyze and interpret Engineering/Chemical Engineering data; B. Able to design a system, component, or process to meet a need for Chemical Engineering/Engineering; C. Able to identify, formulate, and solve Engineering/Chemical Engineering problems; D. Able to utilize the techniques, skills, and modern technical equipment needed for the performance of his professional duties;
SPECIAL SKILLS (SS)
A. Able to apply science in the field of biomass conversion to *bio-based chemical products*; B. Able to solve problems in the field of processing mining materials into *bio-based chemicals*.

	JEMBER UNIVERSITY **FAKULTY OF ENGINEERING** **CHEMICAL ENGINEERING UNDERGRADUATE STUDY PROGRAM**

GRADUATES LEARNING OUTCOME (GLO)

COURSE	**CODE**	**Course Cluster**	**Weight (sks)**	**SEMESTER**	**Compilation Date**
Chemical Reaction Technique II	TKK1420	-	3	4	19 Agustus 2017

AUTHORIZATION	Develper Lecturer SLP	Course Coordinator	Head of the study program	Dean
	signature	signature	signature	signature
	Felix Arie Setiawan S.T., M.Eng.	Felix Arie Setiawan S.T., M.Eng.	Boy Arief Fachri, S.T, M.T, PhD	Dr. Entin Hidayah, S.T., M.T.

LEARNING OUTCOME (LO)	**GLO – Study Program (Expected for this courses)**	
	S-A	Fear of God Almighty and able to show a religious attitude.
	S-G	Uphold law enforcement and have the spirit to put the interests of the nation and the wider community first.
	PP-A	Able to apply knowledge of mathematics, science and Engineering/Chemical Engineering.
	PP-B	The scope of knowledge is broad enough in the field of Engineering/Chemical Engineering to be able to understand the impact of the technical actions taken on society and the global world.
	KU-A	Able to design and run experiments as well as analyze and interpret Engineering/Chemical Engineering data.
	KU-D	The ability to utilize the techniques, skills, and modern engineering tools necessary for the performance of his professional duties.
	KK-A	Able to apply science in the field of conversion of biomass to bio-based chemical products
	KK-B	Able to solve problems in the field of processing mining materials into bio-based chemicals.
	Course Learning outcome (CLO)	

		Students are able to remember, understand, and apply the concepts of Chemical Reaction II techniques to analyze, evaluate, and solve problems/problems related to material. Basic concepts of chemical reactions, heterogeneous reaction rates, batch and flow systems, reaction rate equations, reaction orders, non-reversible reactions reversible, heterogeneous catalytic reactions, kinetic relations with chemical thermodynamics. Introduction and design of real reactors of heterogeneous reaction systems, (stirred tanks, pipe-flow reactors for ideal and non-ideal. Introduction of real reactors for gas-solid, gas-liquid, gas-liquid-solid, bioreactors and membrane reactors systems carefully, critically, creatively , responsible and have confidence in the results of work.

Short Course Description	The subject of Chemical Reaction Engineering II includes the basic concepts of chemical reactions, heterogeneous reaction rates, batch and flow systems, reaction rate equations, reaction orders, reversible-non-reversible reactions, heterogeneous catalytic reactions, kinetic relations with chemical thermodynamics. Introduction and design of real reactors for heterogeneous reaction systems, (stirred tanks, pipe flow reactors for ideal and non-ideal. Introduction of real reactors for gas-solid, gas-liquid, gas-liquid-solid, bioreactors and membrane reactors systems.
Learning Materials/ Subjects	1. Introduction - Introduction Guidebooks commonly used in Chemical Reaction Engineering Course II - Introduction to Chemical Reaction Techniques II 2. Basic concepts of chemical reactions - The reaction rate equation for a heterogeneous reaction - The reaction mechanism for a two-phase system 3. Heterogeneous reactions (*fluid-fluid*): Speed and mechanism of reaction - Equation of reaction rate with direct mass transfer A - Equation of reaction rate for mass transfer and reaction 4. Heterogeneous reaction (*fluid-particle*): Speed and mechanism of reaction - Reaction model selection - Reaction mechanism - The reaction rate for the smaller particles *5.* reaction *reversible*-Non *is reversible* - Conversion, *yield* and *selectivity* 6. Heterogeneous catalytic reaction - Reaction rate equation - Experimental method to find the rate of reaction - Distribution of products in various reactions

	- Catalyst deactivation mechanism - Catalyst deactivation rate equation - Determination of the reaction rate equation from the results of the study 7. Relationship of kinetics to chemical thermodynamics - Energy balance - Non-isothermal flow reactor - Equilibrium conversion - Non-adiabatic reactor 8. Introduction and design of real reactors for heterogeneous reaction systems (stirred tanks, pipe flow reactors for ideal and non-ideal) - Factors to consider reactor selection - Direct mass transfer - Mass transfer plus slow reaction - Reaction from batch reactor 9. Introduction of system real reactors *gas-solid, gas-liquid, gas-liquid-solid*, bioreactors and membrane reactors - Bioreactors and membranes - reactor *Fluidized bed* - Reactor *Packed Bed* - reactor *slurry* - reactor *Trickle-bed*

References	[A] Levenspiel, Octave. 1999. Chemical Reaction Engineering, 3rd ed. New York. John Wiley & Sons [B] Fogler,S.H.,1992.Elements Of Chemical Reaction Engineering, 2nd ed. India. Prentice Hall India	
Learning Media	*Software*	*Hardware*
	1. MS Excel 2010 2. MS Word 3. Browser: UNEJ E-learning	1. Projector 2. LCD 3. Laptops / computers
Team Teaching	-	
prerequisite courses	-	

Weeks to-	Expected Final Ability	Indicator	Criteria and Form of Assessment	Learning methods and [Estimated Time]	Learning Materials and Reference Resources	rating weight (%)
1	Understanding of lecture regulations and materials to be implemented and a basic introduction to chemical reaction techniques.			Discussion [TM : 1*(3*50 minutes)]	Lecture contract, SLP, RPP, RTM, Syllabus, Introduction Introduction to commonly used manuals and introduction to Chemical Reaction Engineering II and the basic concepts of chemical	
2	Students are expected to understand the concept of heterogeneous reaction mechanisms between *fluids* and be able to use it as a basis	Students' ability to work on problems and describe reaction mechanisms.	Criteria: Accuracy and mastery of material Method: Non-test	Form: Lecture and discussion Model: *Discovery Learning*	reactions Heterogeneous reactions (*fluid – fluid*): Reaction rates and mechanisms	5%

	for calculations.		(Document)	[TM:1*(3*50 minutes)] [Structured Independent:		

	reactor design	with proper	[LPHB]	2*(2*60 minutes)]		
3	Students are expected to understand the concept of heterogeneous reactions between *fluid-particles* and be able to use it as a basis for calculations reactor design	Students' ability to work on problems and describe reaction mechanisms with proper	Criteria:Accuracy and mastery of the material Method:Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 minutes)] [Structured + Self: 2*(2*60 minutes)]	Heterogeneous reactions (*fluid – particle*): Speed and mechanism of reaction	5%
4	Students are expected to know and understand the *reversible* reactions that occur in heterogeneous reactions which can increase the difficulty of the reaction mechanism	The student's ability to solve problems about *reversible* reactions - non-conforming appropriately according to knowledge that has been taught	Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 minutes)] [Structured + Self: 2*(2*60 minutes)]	The reaction *is reversible* - Non *reversible*	5%
5	Students are expected to be able to calculate the equation of the reaction speed and determine methods of experimentation where the right to use and can perform optimization in the process of reaction chemistry that varied	The ability of students to resolve the question of the reaction berkatalis heterogeneous correspond to exactly fit with the knowledge that been taught	Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discoery Learning* [TM : 1*(3*50 minutes)] [Structured + Self: 2*(2*60 minutes)]	Catalysit heterogeneous reaction (Eq speed of reaction, the experimental method to look for speed of reaction, and distribution of the products of the reaction are varied)	5%

6	Students understand the mechanism of catalyst deactivation and the speed of its deactivation, and can calculate the reaction rate equation from research resul ts	The ability of students to solve problems regarding the mechanism of catalyst deactivation and the speed of its deactivation, as well as count	Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 minutes)] [Structured + Self: 2*(2*60 minutes)]	Heterogeneous catalyzed reactions (Mechanism of catalyst deactivation, Equation of catalyst deactivation rate , and Determination of the reaction rate equation from the results of the study)	5%

		the reaction rate equation from the research results in accordance with appropriate				
7	Students understand well the relationship between kinetics and thermodynamics and can use it as a basis for calculating non-ideal reactors	Students' ability to solve problems regarding energy balances and appropriate non-isothermal flow reactors and/ or about equilibrium conversions and Non-isothermal reactors adiabatic with appropriate	Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 minutes)] [Structured + Self: 2*(2*60 minutes)]	Kinetic relationship with chemical thermodynamics (Energy balance , non-isothermal flow reactor, Equilibrium conversion, and Non-adiabatic reactor)	5%
8	MIDDLE TEST					15%
9	Students understand better about the design of a heterogeneous reaction system reactor regarding the factors in consideration of reactor selection and the direct mass transfer	The ability of students to resolve the question of the factors to consider the election of the reactor and mass transfer in direct In accordance with appropriate	Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 min)] [Structured + Self: 2*(2*60min)]	Introduction and design of real reactors of heterogeneous reaction systems (stirred tanks, pipe flow reactors for ideal and non-ideal): Factors to consider reactor selection and Mass transfer directly	5%

10	Students understand more about the design of the reactor system of heterogeneous reactions of the transfer period plus the reactions which are not slow and Reaction of batch reactor	The ability of students to solve problems regarding mass transfer plus the reaction is not slow and the reaction of the batch reactor in accordance with the appropriate corr esponding with the knowledge that has been taught	Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discov ery Learning* [TM : 1*(3*50 minutes)] [Structured + Self: 2*(2*60 minutes)]	The introduction and design of the reactor apparent reaction system heterogeneous (stirred tank, flow reactor pipes to the ideal and not ideal) : Transfer ti me plus the reaction is not slow and the reaction of the batch reactor	5%

11	Students can understand and design bioreactors and membranes because the industrial demand for bioreactors is increasing significantly in the industrial world		Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 minutes)] [Structured + Self: 2*(2*60min)]	Real reactor introduction of bioreactor and membrane sys tem	5%
12	Students can understand and design bioreactors and membranes because the industrial demand for bioreactors has increased significantly in the industrial world	The ability of students to resolve the question of the bioreactor and the membrane in accordance with the appropriate cor responding with the knowledge that has been taught	Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 minutes)] [Structured + Self: 2*(2*60 minutes)]	Real reactor introduction of bioreactor and membrane sys tem	5%

13	Students know what a *fluidized bed* reactor is and can solve problems related to *fluidized bed* reactors	The ability of students to resolve the question of the reactor *fluidized bed* fit exactly in accordance with the knowledge that alre ady taught	Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 minutes)] [Structured + Self: 2*(2*60 minutes)]	Real reactor introduction of *fluidized bed* reactor system	5%
14	Students know what a *packed bed* reactor is and can solve the problems that arise related to the reactor	The student's abili ty to solve proble ms about *packed bed* reactor	Criteria: Accuracy and mastery of the material Method:	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 minutes)]	Real reactor introduction of *Packed Bed* Reactor system	5%

	Packed Bed	in accordance with exactly in accordance with the knowledge that has been taught	Non Test (Document) [LPHB]	[Structured + Self: 2*(2*60 minutes)]		
15	Students know what *slurry* and *trickle bed* re actors are and can solve problems r elated to *slurry* and *trickle bed* react ors	The ability of students to resolve the question of the reactor *slurry* a nd reactor *trickle bed* fit exactly in accordance with the knowledge that alre ady taught	Criteria: Accuracy and mastery of the material Method: Non Test (Document) [LPHB]	Format: Lectures and discussions Model: *Discovery Learning* [TM : 1*(3*50 min)] [Structured + Self: 2*(2*60min)]	The introduction of a real reactor system reactor *slurry* and reactor *trickle bed*	5%
16	FINAL TEST					20%

	JEMBER UNIVERSITY **FACULTY OF COMPUTER SCIENCE** **INFORMATION TECHNOLOGY S1 STUDY PROGRAM**	
SYLLABUS		
Name of course	:	Introduction to Information Technology (IT)
Code of course	:	Course I9003
Semester	:	1
SCU	:	2 SCU
Lecturer Of Course	:	Anang Andrianto, ST., MT.
Teaching Team	:	Prof. Drs. Slamin, M.Comp.Sc., PhD Oktalia Juwita, ST., M. MT
Course description	:	This course contains the history and development of computers; Introduction to information systems; Computer systems; Introduction to Computer Networks; Introduction to Office Applications; Development of Information and Communication Technology, Utilization of I nformation and Communication Technology.
Course learning outcome	:	Attitude: S6: cooperate and have social sensitivity and concern for society and the environment. S8: internalize academic values, norms, and ethics. S9: demonstrates a responsible attitude towards work in the field of expertise independently. Knowledge: Able to explain the development of computers and information technology, various resources in information technology and the use of information technology. General Skills: KU1: able to apply logical, critical, systematic, and innovative thinking in the context of the development or implementation of science and technology that pays attention to and applies humanities values in accordance with their field of expertise. Special Skills: Able to use information technology facilities optimally according to their needs. • Using a computer network. • Using office applications. • Using software to support daily needs. • Easily create ebooks.

		• Using communication devices and computers for daily needs.
Study Material	:	1. Learning systems in courses 2. History and development of computers 3. Computer systems 4. Introduction to computer networks 5. Introduction to information systems 6. Introduction to office applications 7. Developments in Information and Communication Technology 8. Utilization of Information and Communication Technology 9. Introduction to internet media as a publication media
References	:	1. Slamin et al, 2009, Introduction to Information Technology, Andi Offset, Yogyakarta; 2. Other sources.

	UNIVERSITY OF JEMBER **FACULTY OF ENGINEERING** **CHEMICAL ENGINEERING S1 STUDY PROGRAM**				
STUDENT TASK PLAN 1					
COURSE	Chemical Reaction Engineering II				
CODE	TKK1420	scu	3	SEMESTER	4
COURSE LECTURER	Felix Arie Setiawan				

TASK FORMS

Doing questions according to "Task-1" in E-learning

TASK TITLE

Heterogeneous reaction mechanism (fluid – fluid)

SUB-CLO (EFA)

Students are expected to understand
the concept of heterogeneous reaction mechanisms between fluids and be able to use it as
a basis for reactor design calculations

TASK DESCRIPTION

Work on issues that relate to the mechanism of the reaction heterogeneous (fluid - fluid). The equation is simple reaction that is not too complex to be done so as to provide an overview beginning
of the students in the reaction mechanism of the reaction heterogeneous (fluid - fluid)

TASK WORKING METHODS

Read the book references, journals and browsing the Internet Work with the steps that logically.

Serve the steps are in Word, using Times New Roman 12, 1 ½ spacing, margins 3/3/3/3 cm.

Submit with file name : NIM_Your_Name.docx

SHAPE AND FORMAT OUTPUTS

Description of steps solving problems in a logical and systematic to get answers that

right in Word format

INDICATORS, CRITERIA AND WEIGHT OF ASSESSMENT

Solving steps (0 – 100), weight 40%

Answer accuracy (0 – 100), weight 50%

Compatibility of file formatting and naming (50 – 80), weight 10% Plagiarism (minus 50%)

IMPLEMENTATION SCHEDULE

Processing period : See Task-1 in E-learning!

Deadline for submission : Check out Task-1 on E-learning!

ETC

If found indications of cheating / Copy Paste then either the cheating or being cheated gets

penalty for plagiarism.

REFERENCES

Levenspiel, Octave. 1999. Chemical Reaction Engineering, 3rd ed. New York. John Wiley & Sons Fogler, SH, 1992. Elements Of Chemical Reaction Engineering, 2nd ed. India. Prentice Hall India

	JEMBER UNIVERSITY **FACULTY OF AGRICULTRAL TECHNOLOGY** **AGRICULTURAL ENGINEERING S1 STUDY PROGRAM**

LECTURE CONTRACT

Name of Course	:	Agricultural Energy and Electrification
Code of Course	:	TPT 1306
Semester/Tahun Akademik	:	4/1718
SCU	:	4
Course Cordinator	:	Dr. Dedy Wirawan S.TP, M.Si [A]
Teaching Team	:	Ir. Setiyo Harri, M.S [B] Dr. Ir. Bambang Marhaenanto, M.Eng. [C] Askin, S.TP., M.MT. [D]
Course Description	:	This course studies the main energy sources and alternative energy as well as electrical energy used in agricultural activities. Various energy sources such as fossil, solar, wind, water, and biomass were analyzed for their potential and studied their conversion technology into energy that is used directly such as electricity, mechanics, heat, etc. Electrical grid engineering for agriculture and rural areas is also studied in this course. This course is also supported by activities practicum in the instrumentation laboratory.
Course Learning Outcomes	:	(1) Students are able to explain about the various sources of energy alternatives and energy policy Indonesia. (2) Students are able to calculate the potential energy that is owned by the various sources of energy in a location. (3) Students are able to design an energy conversion system from certain energy sources that can be used for agricultural activities . (4) Students are able to plan the electricity network in an agricultural industry along with the calculation of the required power.
Study Material	:	1) Thermodynamic review (2) The energy state of the world (3) Indonesia's energy policy (4) Energy needs in agricultural activities starting from pre-harvest, harvest, and post- harvest (5) Potential and conversion of solar energy (6) Potential and energy conversion of water (7) Wind energy potential and conversion (8) Animal and human energy potential (9) Biomass energy (10) The series of electric currents alternating

		(11) Electrical energy conversion (12) Network electrical
References	:	Abdullah, K., et al., 2004. Agricultural Energy and Electricity . Institute of Agriculture Bogor.
Task	:	Discussions in the form of solving problems/calculations, writing papers, and so on

Assessment Criteria	:	The assessment components are assignments/homework, presentations, practicums, and quizzes for each competency or KAD. The weight of each component: assignment=10%, presentation=15%, practicum=25%, quiz=50%. Completeness value is determined for each KAD value. The final score is taken from the average of all KAD scores . The range of all value components is 0 – 100; converted into categorical values (A, AB, B ... E) according to the Unej assessment guidelines
Class Schedule	:	

	Meeting to	**date and Time**	**Study Material**	**Lecturer**
	1		Thermodynamics review	B
	2		The state of the world's energy	B
	3		Indonesia's energy policy	B
	4		agriculture start of pre-harvest, harvest, and post harvest	A
	5		Energy potential of animals and humans	
			Energy potential of animals and humans	
				A
	6		Biomass energy	A
	7		Solar energy potential and conversion	C
	8		Potential and energy conversion of water	C
	9		Wind energy potential and conversion	C
	10-11		lternating current electric circuit	D
	12-13		Electrical energy conversion	D
	14-15		network electricity	D

Jember, 17 February 2017

Lecturer Supervisor/ Course Coordinator

Dr. Dedy Wirawan S.TP, M.Si NIP: 19740707 199903 1 001

Student Representative

Deni Agung Idayana
NIM: 151710201023

ATTACHMENT

STANDARD OPERATING PROCEDURE (SOP) LEARNING

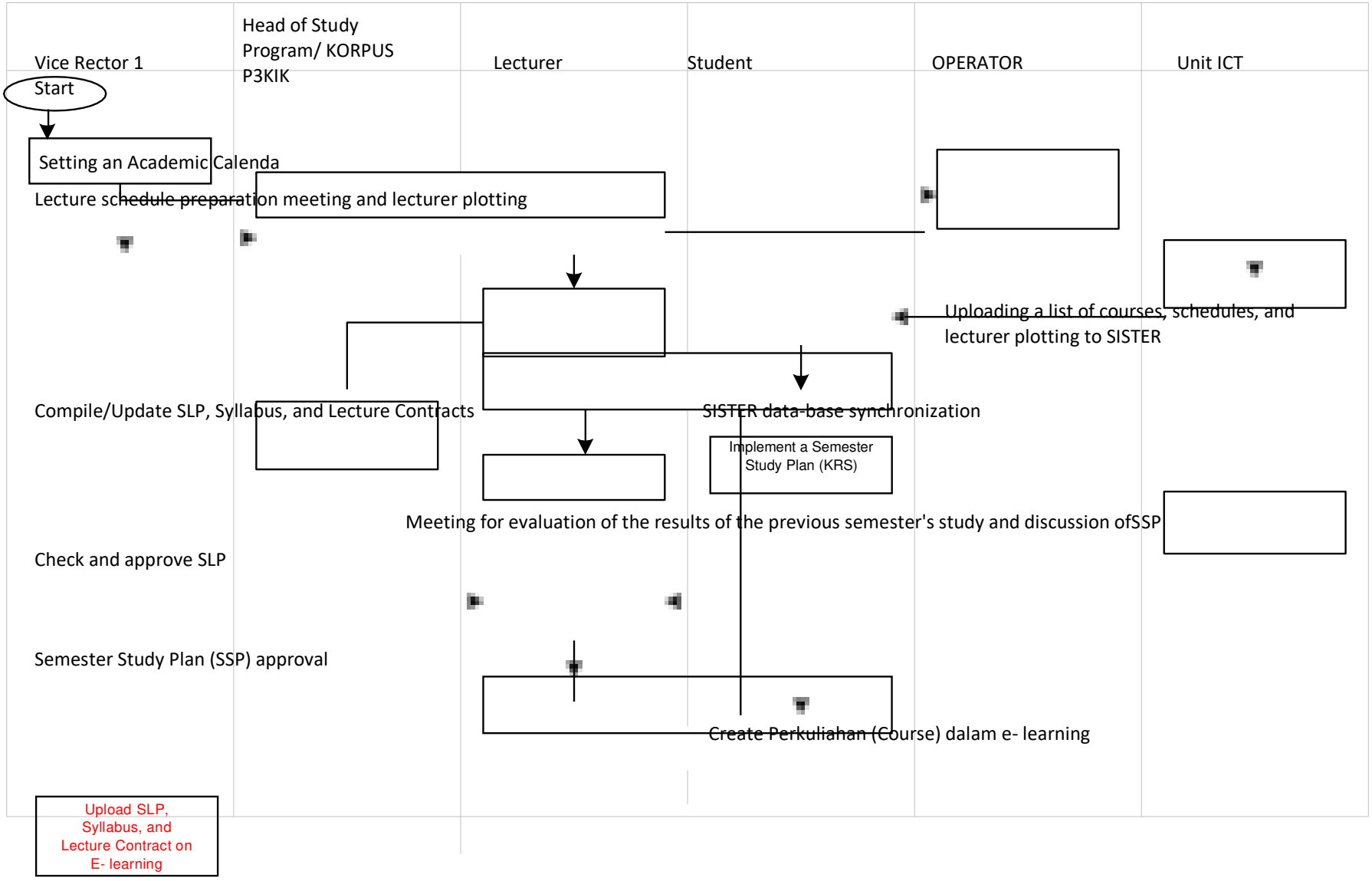
- FC1.0 LEARNING PLANNING
- FC2.0 LEARNING IMPLEMENTATION
- FC2.1 TECHNICAL COLLEGE ONLINE / ONLINE
- FC2.2 OF COURSE IN LIEU
- FC2.3 LECTURE IMPLEMENTATION IN SYSTEM DISORDER CONDITIONS
- FC2.4 OF COURSE NON-eLearning
- FC2.5 EXCUSED AND ILLNESS STATUS FOR STUDENTS

	STANDARD OPERATING PROCEDURE		
	LEARNING PLANNING		
	Document Code	Revision : 0	Revision Date: -
	FC1.0	Issue Date :	Pages : 1 of X

1. Purpose	:	Carry out lesson planning ahead of time semester lectures run according to the academic calendar
2. Space Scope	:	This procedure applies to the implementation of learning in all study programs at the University of Jember
3. Definition	:	Koprodi is the Coordinator of the Study Program Korpus P3KIK is the Central Coordinator at LP3M which organizes MKU (General Subjects) lectures. Koprodi is the Study Program Coordinator Corpus P3KIK is the Central Coordinator at IFLDQA(institute for learning development and quality asurance) which organizes GC lectures (General Courses)
4. Responsible	:	Vice Rector I
5. Reference	:	Rector's Decree number 1758/UN25/KP/2017
6. Distributed to	:	Dean, Director of Graduate Studies, Deputy Dean I, Vice Director I, Bureau I, Head of IFLDQA, Head of TIU of ICT, Head of Academic, Head of study program, Head of Academic Subdivision , Academic Operator , Lecturer

7. Procedures	:	1. At the beginning of July every year, Vice Rector 1 sets the Academic Calendar . 2. Before SPC started (in accordance with the calendar academic) Head of study program / corpus P3KIK draw up a plan schedule lectures, ploting faculty, and facilities infrastructure to support learning in a meeting together with the lecturer. 3. Academic Operators enter class schedules , plotting of lecturers and lecture rooms to SISTER. 4. The Head of Sub-Academics, Head of study program and VICE DEAN I carry out monitoring in stages in step number 3. 5. TIU of ICT synchronizes data on courses, classes, and supporting lecturers between SISTER and E-Learning. 6. The lecturer/team updates the Semester lesson plan (SLP), Syllabus, Lecture Contract (format according to the template) and course materials . 7. Koprodi examines and approves/ratifies the SLP. 8. Lecturers update the web of courses in e- learning by filling in the General section in the form of: (1) description of course descriptions and (2) course CP , and uploading files (pdf) of SLP, Syllabus and Lecture Contracts 9. Students carry out programming SPC and consult with faculty mentors academic (faculty trustee), faculty trustee subsequently approved through SISTER 10. Unit ICT perform synchronization of data of participants courses are periodically between SISTER and E- Learning .

8. Related Documents	:	1. Guidelines for Planning, Implementation and Assessment of Learning at the University of Jember (Decree of Unej Rector Number: 17528/UN25/KP/2017) 2. Image G1.0


Vice Rector 1
Head of Study Program/ KORPUS P3KIK
Lecturer
Student
OPERATOR
Unit ICT
Start
Setting an Academic Calenda
Lecture schedule preparation meeting and lecturer plotting
Uploading a list of courses, schedules, and lecturer plotting to SISTER
Compile/Update SLP, Syllabus, and Lecture Contracts
SISTER data-base synchronization
Implement a Semester Study Plan (KRS)
Meeting for evaluation of the results of the previous semester's study and discussion ofSSP
Check and approve SLP
Semester Study Plan (SSP) approval
Create Perkuliahan (Course) dalam e- learning
Upload SLP, Syllabus, and Lecture Contract on E- learning

Implementation of Lectures (FC1.0)

Figure G1.0. Flowchart of Lesson Planning

	STANDARD OPERATING PROCEDURE		
	LEARNING IMPLEMENTATION		
	Document Code	Revision : 0	Revision Date: -
	FC2.0	Issue Date:	Pages : 1 of X

1. Purpose	:	Carry out the learning process in the classroom according to class schedule .
2. Focus and Scope	:	This procedure applies to the implementation of learning in all study programs at the University of Jember
3. Definition	:	1. SFS is a mobile application (Android/i-OS) to access SISTER for students 2. SFL is a mobile application (Android/i-OS) to access SISTER for lecturers 3. QRCode is a code in the form of a pixel matrix image containing digital data that can be read with a special application using a mobile-phone camera 4. SSID is the name of the WiFi/Hotspot identity that can be captured by mobile devices (mobile phones, laptops, etc.). 5. System/network disturbance is an incident where the mobile device used by the lecturer and students failed access to SISTER / e-learning via the SSID of space grade accordingly.
4. Responsible	:	
5. Reference	:	
6. Distributed to	:	Dean, Director of Postgraduate, Deputy I, Deputy I, Bureau I, Head of IFLDQA,, head of Unit ICT, Head of Academic, Cor Prodi, Subsection Academic, been academic, lecture

. Procedures	:	1. According to the schedule, lecturers and students enter the classroom. 2. If the lecturer is unable to attend class, he or she can conduct online lectures (FC2.1 procedure) for a maximum of 25% of the total face-to-face meetings per semester. If it is not possible, online lectures can be carried out with substitute lectures (FC2.2 procedure). 3. Lecturers and students connect device laptop or Android into WiFi SSID room class. 4. Lecturers access https://sister.unej.ac.id/percepatan , then select a faculty, click monitor then click the index sign ( ) to login to E-learning MK, then update the topic title no later than 30 minutes from the start class schedule (as proof of lecturer attendance and teaching journal storage by SISTER) 5. Students open the application Sister for Student (SFS) and do scan the QR Code which provided in the classroom or broadcast by the lecturer no later than 30 minutes from the start of the lecture schedule 6. Lecturer obliged to check presence through SISTER version of Desktop on the menu Academic / Class or use the SFL on the menu and the presence of mengabsenkan students who can not perform the scan the QR Code for evidence of the presence, the slow 45 minutes from the initial schedule of lectures 7. In the event of a system/network disturbance or a power outage, the lecturer immediately contacts the academic operator /class service and network technician. If it fails to be completed in a short time (less than 15 minutes) points 4 and 5 above can be ignored and carry out FC2.3 procedures. 8. Lecturers continue the lecture with the topic of materials (materials research) and methods / strategies in accordance SLP in the duration of time according the schedule that has been set.
8. Related Documents	:	Figure G2.0

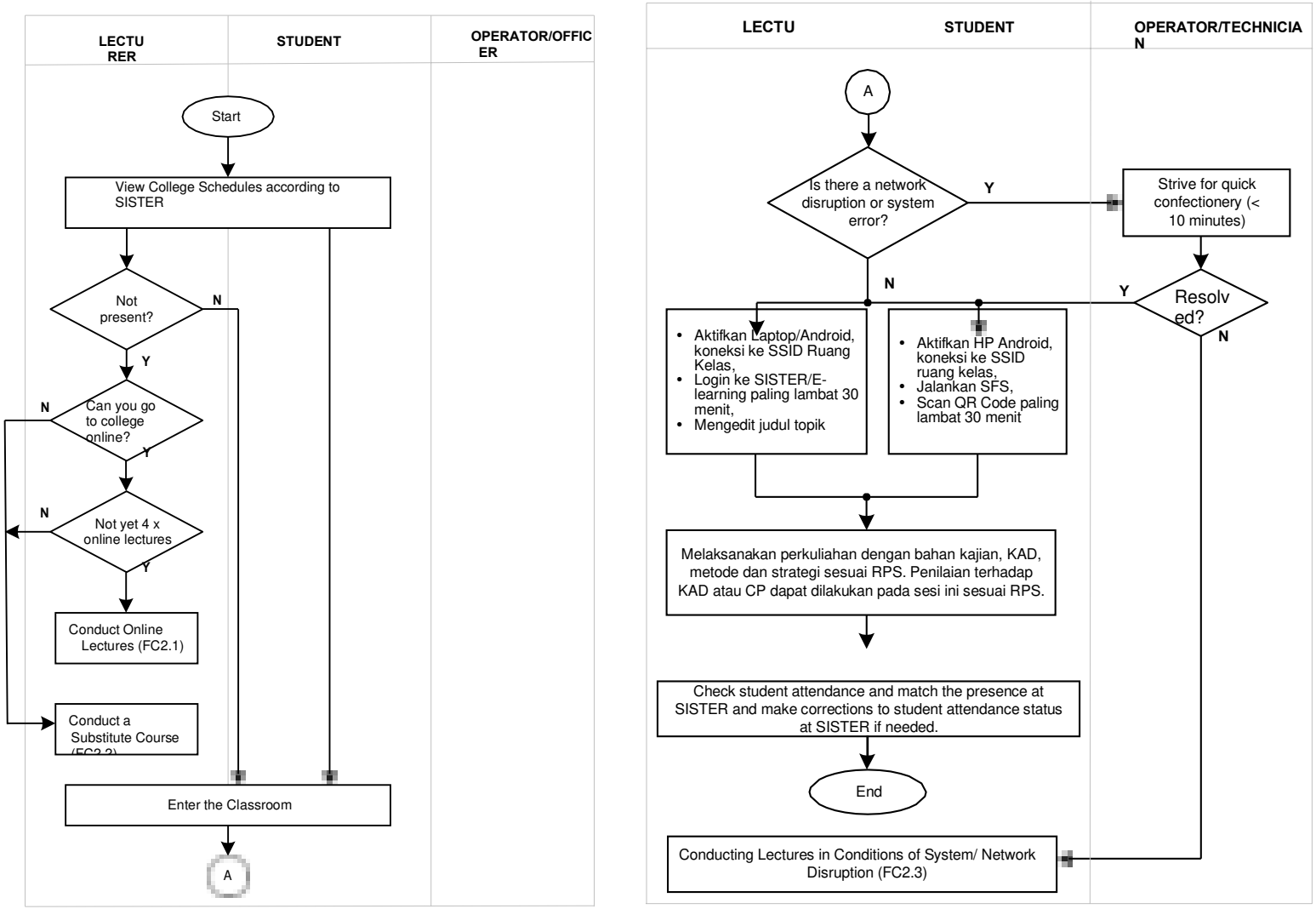


Figure G2.0. Lecture Implementation

	STANDARD OPERATING PROCEDURE (SOP)		
	ONLINE LEARNING IMPLEMENTATION		
	Document Code	**Revision : 0**	**Revision Date : -**
	FC2.1	**Issue Date :**	**Pages : 1 of X**

1. Perpose	:	Carry out online lectures , where lecturers and students do not meet face-to- face in class.
2. Focus and Scope	:	The procedure is applicable to learning that is done by online / on line (maximum 25% of the total face advance per semester).
3. Definition	:	Online learning is the process of learning that is performed when the lecturer could not attend the class according the schedule of lectures using the media e-learning https://e-learning.unej.ac.id
4. Responsible	:	
5. Reference	:	
6. Distributed to	:	
7. Procedures	:	1. The lecturer announces that the lecture will be held online (according to the normal schedule) via Telegram broadcast via the Academic/Lecture menu or BOT Sister University of Jember on the Telegram application . 2. The lecturer opens the course web in e-learning and prepares/creates several activities in the topic section in the form of: - Attendance (See Guide P2.1) - Interactive learning activities such as assignments (Assignment), quizzes , forums, and others. 3. At the beginning of the lecture according to the schedule of lecturers and students login to e-learning 4. Lecturer update the title of the topic of the latest 30 minutes after the study began. 5. Students click Attendance and fill in the attendance list by clicking “Present (P)” no later than 30 minutes after the lecture starts. 6. The lecturer checks the student's attendance and after confirming to the student, saves the attendance data by clicking " Save attendance " in the Attendance section . 7. Lecturer logs in to SISTER and ensures student journals and attendance on the menu "Academics/Lectures". 8. Learning activities are carried out in duration according to the class schedule . 9. In terms of implementing online learning, no successfully implemented, the

		lecturer did turn schedules in college.
8. Related Documents	:	Figure G2.1

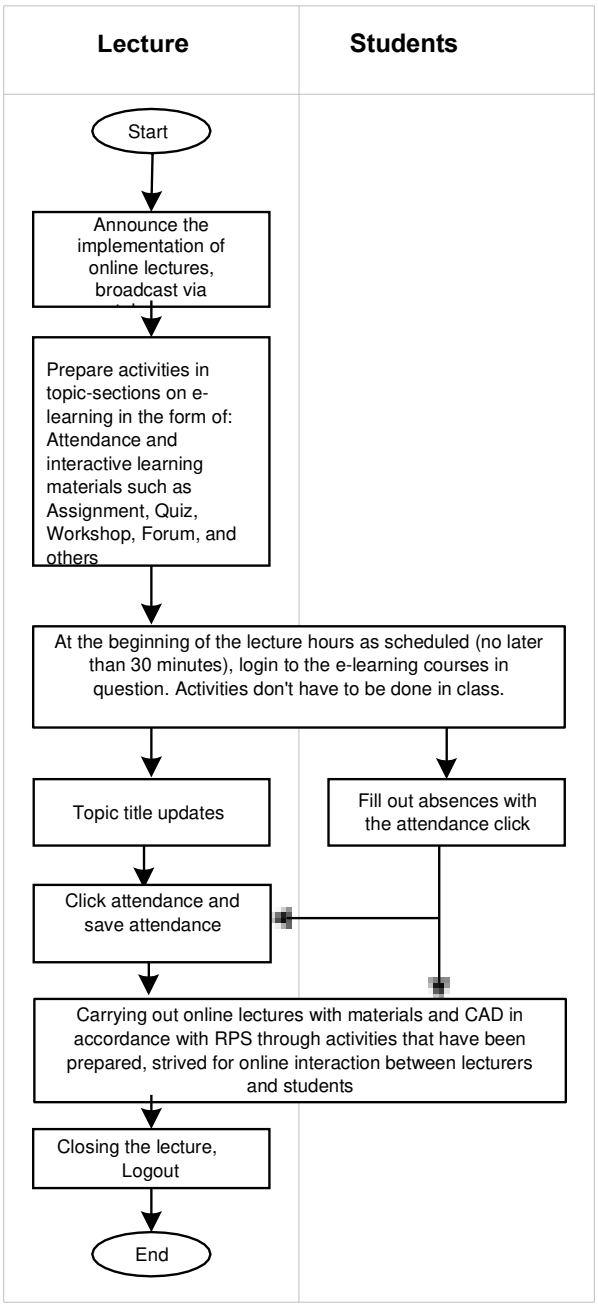


Figure G2.1. Implementation of online lectures (*online*)

	STANDARD OPERATING PROCEDURE (SOP)		
	ONLINE LEARNING IMPLEMENTATION		
	Kode Dokumen	Revisi : 0	Tanggal Revisi : -
	FC2.2	Tanggal Terbit :	Halaman : 1 dari X

1. Perpose	:	Carry out substitute lectures due to not implementating the classes according to schedule.
2. Focus and Scope	:	The change of schedule and lecture rooms by lecturers through SISTER will be carried out in an internal building of the faculty. This procedure is used to carry out a replacement lecture because the lecture has not been carried out (past schedule) or the lecture cannot be carried out according to schedule, and is only valid once (not changing the schedule permanently).
3. Definition	:	
4. Responsible	:	Vice Dean 1
5. References	:	
6. Distributed to	:	Lecturer, Operator, Vice Dean 2, Head of Sub Division for Umper
7. Procedures	:	1. The lecturer announces to the students about the schedule change plan via the SISTER bot (Telegram). 2. Lecturers make schedule changes through the "Change Lecture Schedule" menu in SISTER (See Guide P2.4). Then fill in the alternate day/date and time and choose the class room offered by the system. (Note: The choice of Day/date/hour has been filtered by the system by the student's class schedule; as well as the lecture halls which are filtered based on their availability). 3. The process of changing the schedule can be done before or after the lecture hours of the subject in question. 4. If the schedule change process is confirmed, the system will send (broadcast) notifications to all lecturers, all students, operators, Wadek 1, and Wadek 2 via the SISTER UNIVERSITAS JEMBER Telegram Bot . 5. Based on the notification, Wadek 2 instructs Sub Bag Umper to assign the Class Service Team and Operators according to the new schedule. 6. The lecturer has prepared the study material (material) and uploaded the file in the topic section of the web course in the e-learning that will be implemented. 7. Lecturers and students enter the classroom according to the new schedule . 8. Lecturers access https://sister.unej.ac.id/percepatan , then choose a faculty, click monitor and then click the index sign ( ) to log into E-learning MK, then update the topic title no later than 30 minutes from the start of the lecture schedule (as proof of lecturer attendance and teaching journal storage by SISTER) 9. Lecturers and students connect Android/i-

		OS to the classroom WiFi SSID . 10. As evidence of the presence (Presence), the students perform a scan QRCode classrooms using applications SFS most slow 30 minutes from the initial schedule of lectures. 11. Lecturers can also scan the classroom - class QR Code with SFL as proof of attendance. 12. Lecturer log into SISTER / E-learning, then meng- update titles of topics (as proof of the presence of lecturers and teaching journal storage by SISTER). 13. Lecturers check student attendance through SISTER (See Guide to Checking Student Attendance – P2.3 Document). If there are students who fail to scan QRCode, permit, or ill, the lecturer can fill in the Presence are concerned. If there are students who are found to be absent but their status is "present", the lecturer can cancel their presence. 14. If there is a system/network disturbance or a power outage points 9 to 13 above can be ignored and carry out procedure F2.3 after the Operator fails to resolve the disturbance in a short time (less than 15 minutes) 15. Implementation of lectures with material topics (study materials) and methods/strategies according to the SLP within the time duration according to a predetermined schedule.
8. Related Documents	:	Guide P2.3, Guide P2.4, Figure G2.2

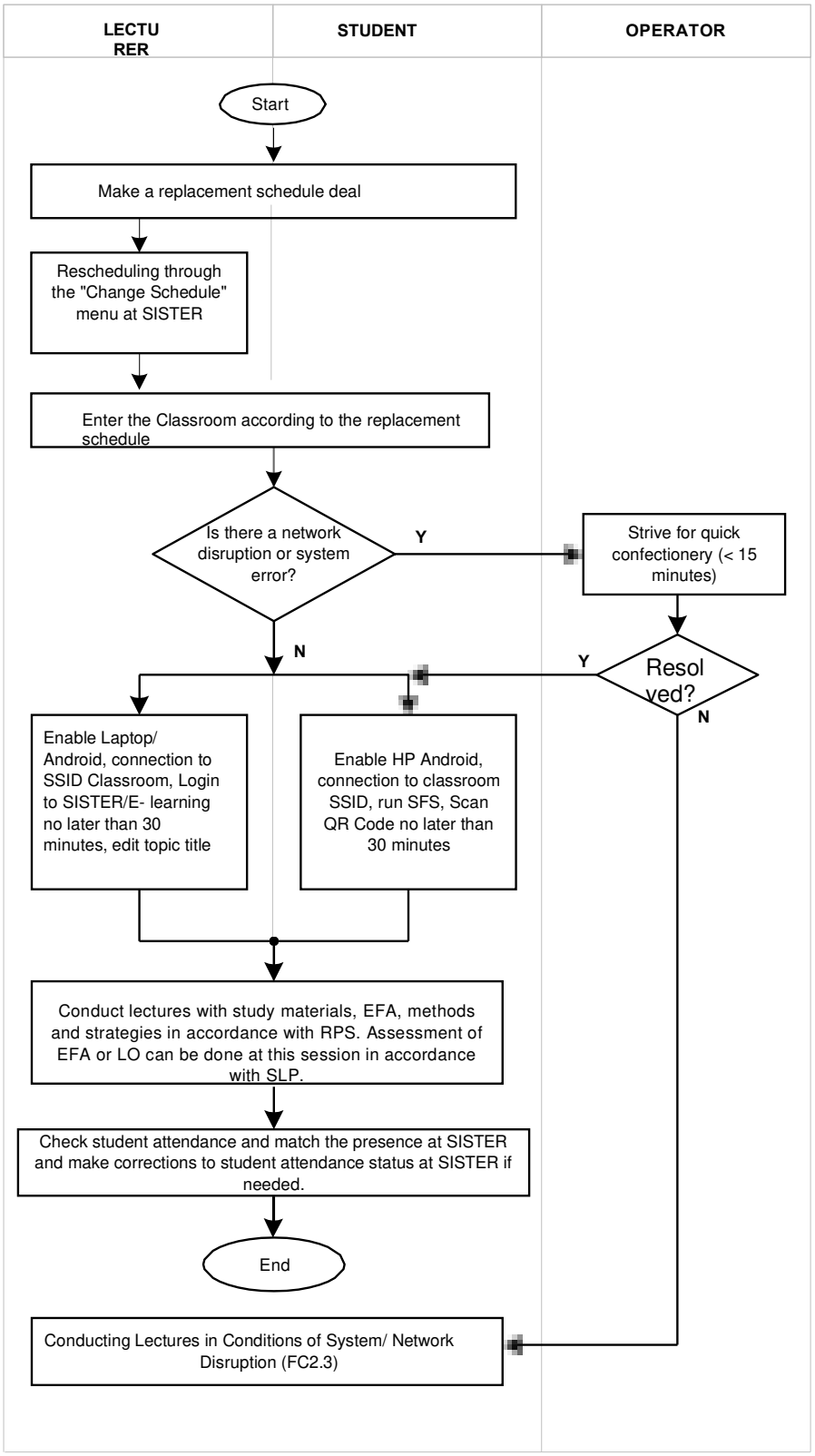
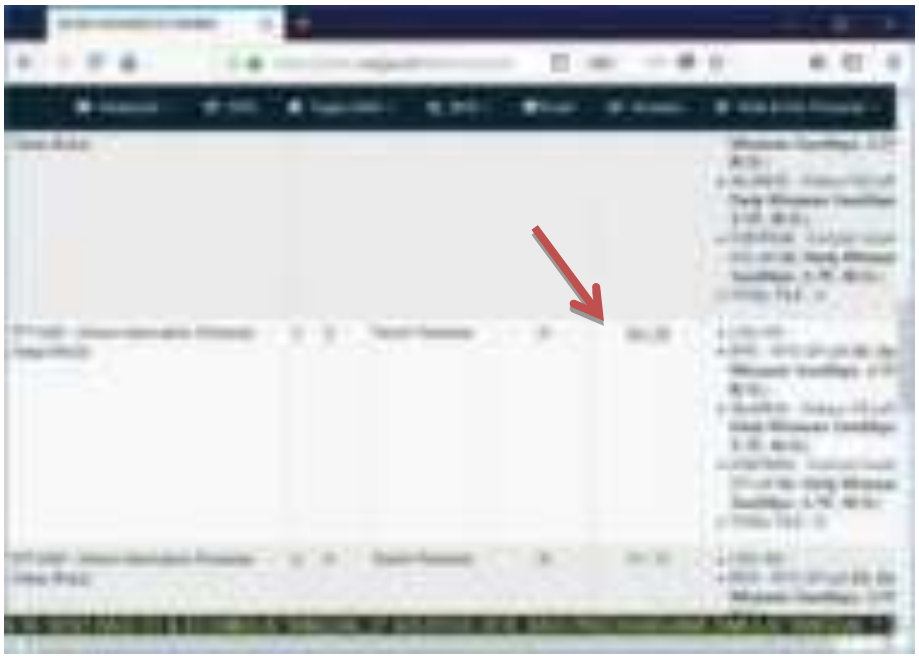


Figure G2.2. Substitute Lecture

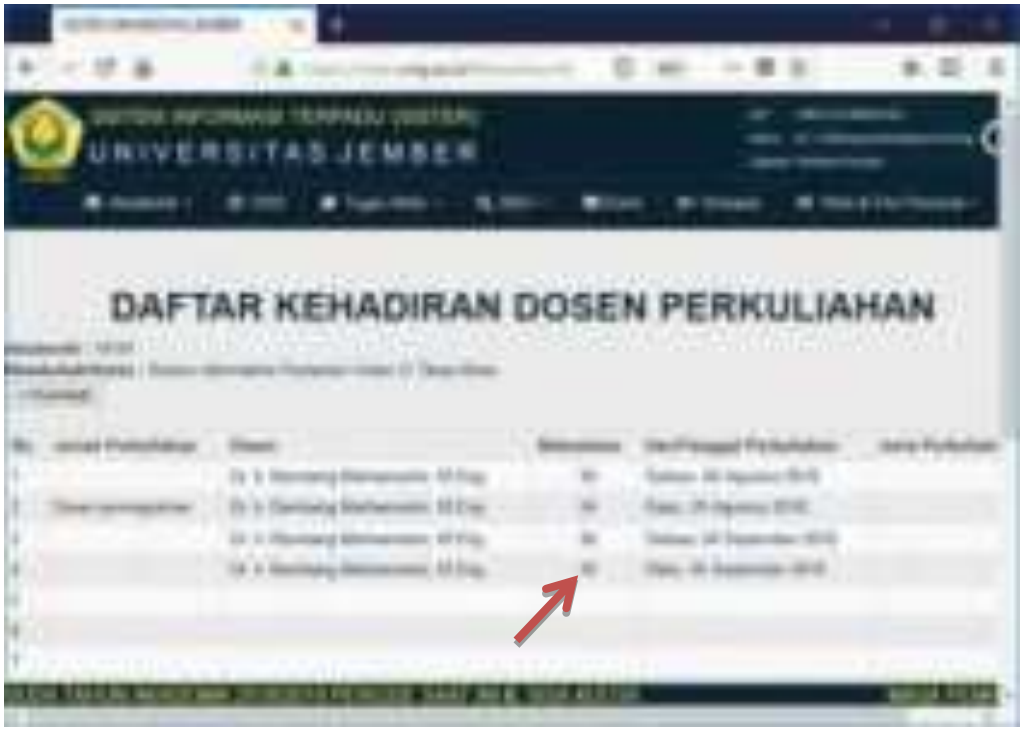
Document Code:	**P2.3**
Name of Document :	**STUDENT ATTENDANCE CHECKING GUIDE**
Perpose :	Checking the presence of students and change the presence status if occurs: a failure of presence, no license, no information, or there is fraud (entrusted presence)

Steps to check student attendance :

1. Login to SISTER
2. Click Academic, select Lecture



3. Click the number ## / ## in the Attendance column



4. Click the number in the last row (bottom) of the Student column

5. Select the sheet "ABSENT(##)", check the name of the registered students on this sheet, if the student attends the class, then click the status and select "Present". Next the name will be deleted from this sheet and moved to the “PRESENT” sheet. If among the list of names there is a letter of permission or a statement of illness, then "Permission" or "Illness" is selected . If without any information, select "Alpha".

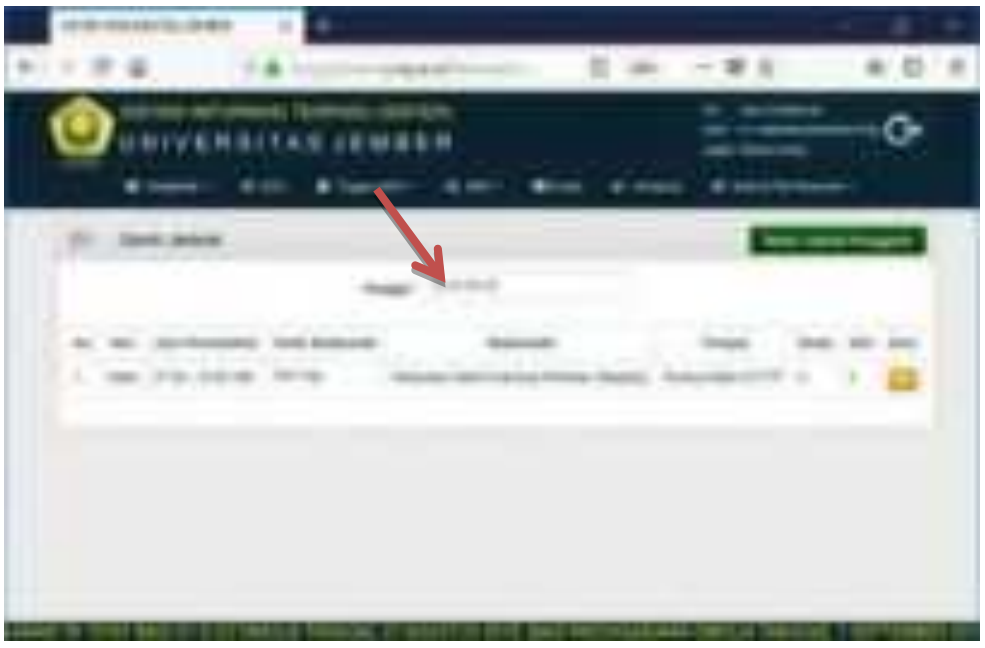
6. Click on the sheet “ATTEND (##)” to make changes to attendance status if indicated there is a student with a status of "Present" but not being in the room class.

Notes: Checking and changing attendance status can only be done during lecture hours.

Document Code:	**P2.4**
Name of Document :	**GUIDE TO CHANGE LECTURE SCHEDULE**
Purpose :	Doing replacement schedule for lectures by professors

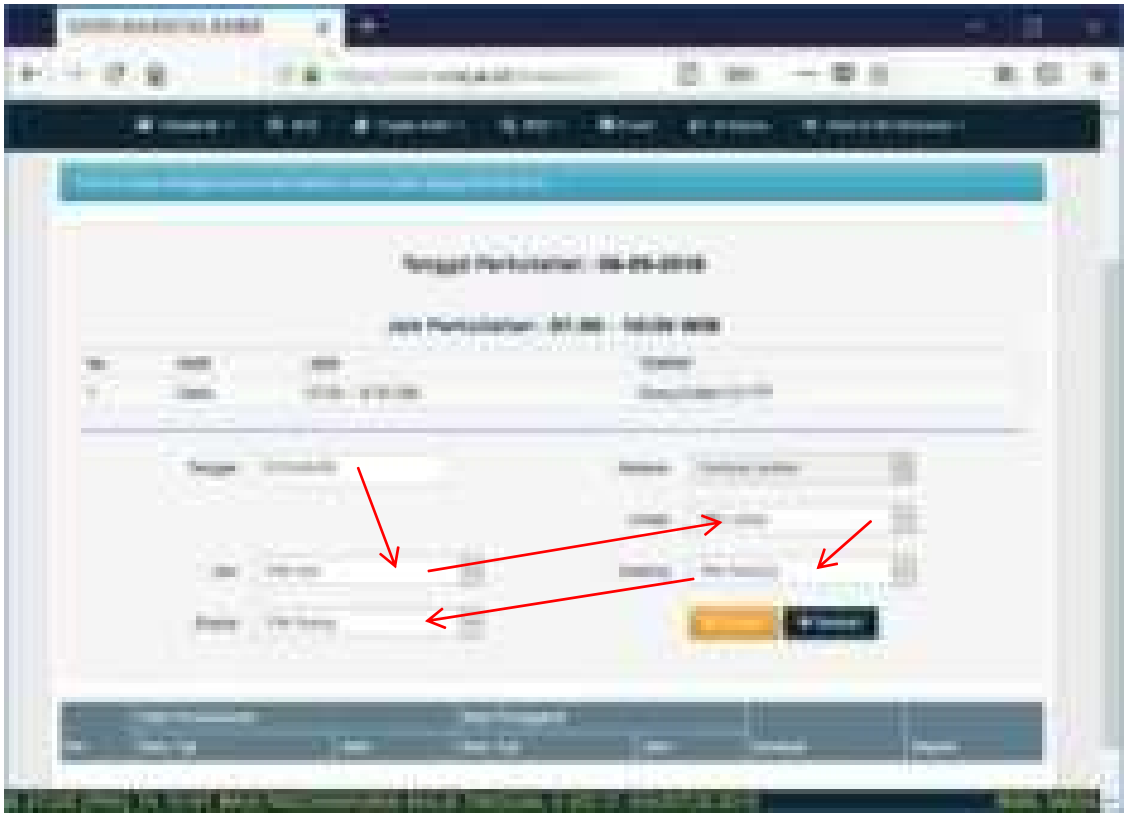
Steps to change the class schedule :

7. Login to SISTER
8. Click Academic, select “Change Class Schedule ”

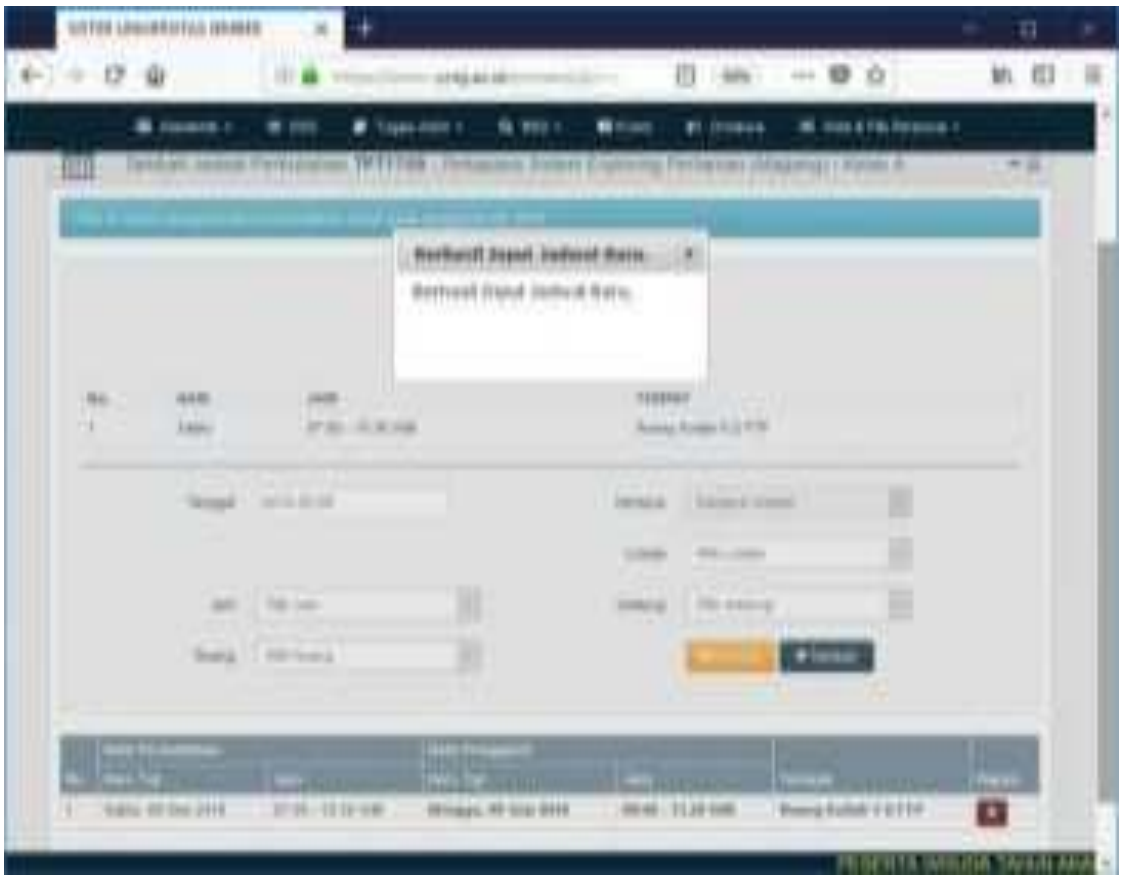


9. Click the box Date to choose subjects when that will be replaced.

10. Click the icon in the Action column of the desired course .

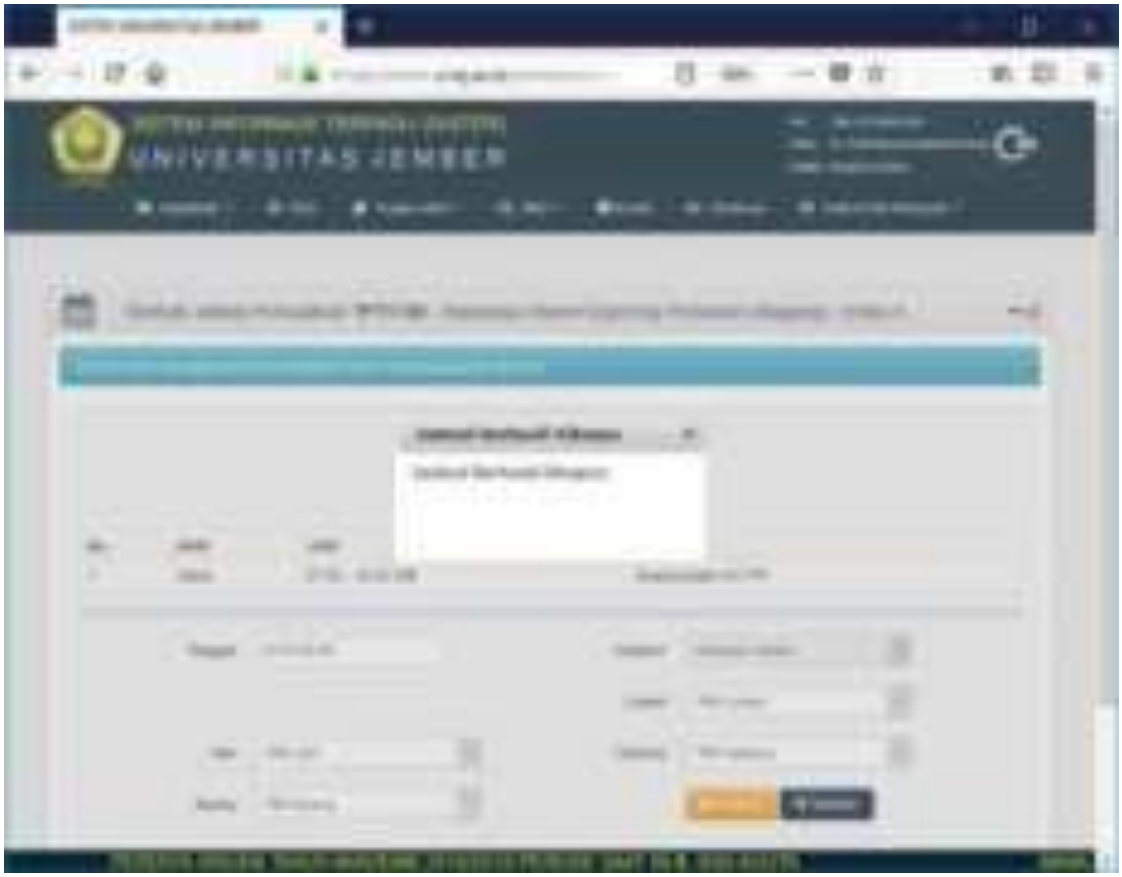


11. Select Date, Time, Location, Building, and Room (in order of arrows). Finish by clicking “+ Add”.



The system will then send notifications via the Telegram Bot as follows :

Click on the "Delete" column to cancel the schedule change. The system will then send notifications to lecturers and students as follows:


UNIVERSITAS JEMBER

	STANDARD OPERATING PROCEDURE (SOP)		
	LECTURE IMPLEMENTATION IN SYSTEM DISORDER CONDITIONS		
	Document Code	Revision : 0	Revision Date: -
	FC2.3	Issue Date:	Pages : 1 of X

1. Purpose	:	Carrying out lectures in conditions of interference network/system
2. Focus and Scope	:	This procedure applies to face-to-face lectures in class when there is a connection failure due to network/system interference
3. Definition	:	
4. Responsible	:	
5. Reference	:	
6. Distributed to	:	
7. Procedures	:	1. The lecturer/class leader takes the student attendance form (F3.2) and the Lecture Journal Form in conditions without QR Code and/or E- learning (F3.1) in the academic sub-section/classroom service room . 2. Students fill in the attendance list (F3.2). 3. The lecturer fills out the lecture journal form (F3.1) along with the type of disturbance. 4. Implementation of lectures with material topics (study materials) and methods/strategies according to the SLP within the time duration according to the normal schedule that has been set. 5. Lecturer/Class Leader submits Form F3.1 and Form F3.2 that have been filled in to the academic operator of the study program. 6. Academic operators upload scanned lecture journals (F3.1) 7. The operator will enter student attendance along with the lecture journal no later than the next working day (16.00 PM).
8. Related Documents	:	Figure G2.3, Form F3.1, Form F3.2

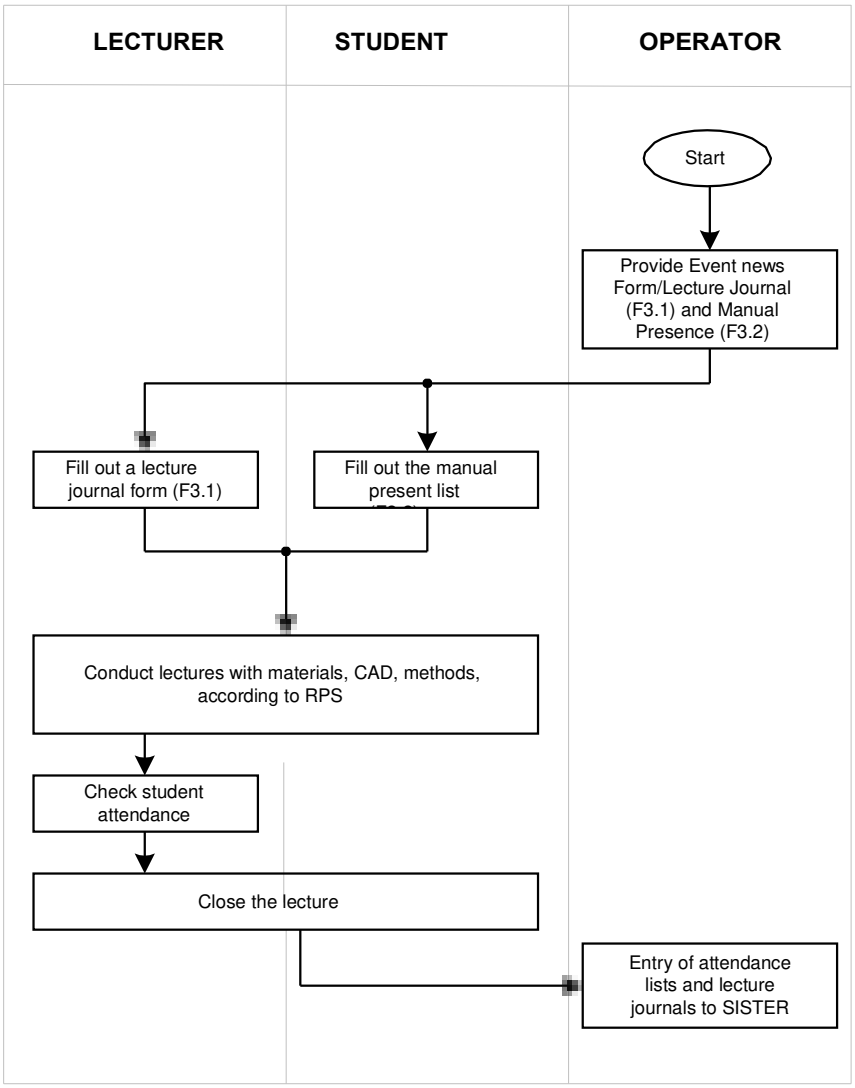


Figure G2.3. Implementation of lectures in conditions of system/network disturbances

Form F3.1

	Name of Document:	**Lecture Minutes Form in conditions without QR Code and/or E-learning**
	Purpose :	**As a basic / reference for Operator Academic Prodi To toggle entry presensi students and journals lectures to SISTER in MANUAL**

It is hereby notified that:

Subjects / Study Programs : ..... /.....

Supporting Lecturer : .....

Room : .....

Day/Date : ..... /.....

Hours : ..... to .....

It has been carried out according to schedule **without** using the presence of *QR Code* and/or *e- learning* because:

- ☐ Black Out
- ☐ Failed to connect to network
- ☐ Device error (HP/Laptop)
- ☐ Moved room / field study
- ☐ Other .....

By because it was so entry presensi students and journal lecture to SISTER performed in MANUAL by Operator study program of Academic.

Jember, ...

Lecturer,

.....

NIP/NRP: .....

Form F3.2

	Name of Document :	**List of Student Attendance**
	Perpose :	Evidence of the presence of students in the lecture will be entered manually by the Academic operator into the SISTER due to the system failure.

Subject : .....

Lecturer: .....

No.	NIM	Name	Date							

Notes:

The student list is filled in the order according to SISTER to facilitate attendance entry into SISTER by the Academic Operators

	STANDARD OPERATING PROCEDURE (SOP)		
	IMPLEMENTATION OF NON E-LEARNING LECTURES		
	Document Code	Revision : 0	Revision Date : -
	FC2.4	Issue Date :	Pages : 1 of X

1. Perpose	:	Carry out non-e-learning lectures determined by the Study Program/Faculty
2. Focus and Scope	:	This procedure applies to non-university lectures e-learning at the University of Jember
3. Definition	:	
4. Responsible	:	
5. Reference	:	
6. Distributed to	:	
7. Procedures	:	1. Program studies suggest Currency Class Non e -learning at the Dean via Vice Dean I. 2. Vice Dean 1 change the status of the Non e-learning in class Currency Class through Siste r (Menu D-Eyes Lecture non e-learning. 3. Lecturer/Chairman of class takes student attendance form (F3.2) and lecture journal form (F3.3). 4. Students fill in the attendance list (F3.2). 5. The lecturer fills out the lecture journal form (F3.3). 6. Implementation of lectures with material topics (study materials) and methods/strategies according to the SLP within the time duration according to the normal schedule that has been set. 7. Lecturer/Class Leader submits Form F3.2 and Form F3.3 that have been filled to the academic operator . 8. Operator entry-kan clicking the presence of students, faculty attendance, and journal lecture at the latest on the day of work next (hours 16.00).
8. Related Documents	:	Form F3.2, Form F3.3

Form F3.2

	Name of Document :	**List of Student Attendance**
	Purpose :	Proof of student attendance in lectures which will be entered manually by the Academic Operator into the SISTER

Subject : .....

Lecturer: .....

No.	NIM	Name	Date							

Notes:

The student list is filled in order according to SISTER to facilitate attendance entry into SISTER by the Academic Operators

Form F3.3

	Name of Document :	**Lecture Journal**
	Purpose :	Evidence of the lecturer attaendance in the lectures and lecture journals

Subject : .....

Lecturer : .....

Meeting to:	Date	Lecturer	Journal	Signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
..				
..				
..				
..				
..				
..				
..				
..				

..				
..				
..				
..				
..				
..				

	STANDARD OPERATING PROCEDURE		
	POLICY FOR STUDENTS EXCUSED AND ILLNESS		
	Code of Document	Revision : 0	Revision Date : -
	FC2.5	Issue Date:	Pages : 1of X

1. Purpose	:	Filling in student attendance status , permission or illness, to the SISTER manually by the academic operator of Study Program
2. Focus and Scope	:	This procedure is used for all types of lecture activities (e-learning , non-e-learning , online , and substitutes) to complete attendance informatio students in learning activities .
3. Definition	:	1. Permission is the status in which students do not attend the lecture supported with relevant documents 2. Sickness is the status in which students do not attend the lecture because of illness supported by relevant documents (doctor/hospital certificate , etc.) 3. The status of permission and illness are included in the "attendance" category in calculating the percentage of student attendance . 4. If the student's absence due to permission or illness is carried out an assessment (quiz, Mid Test, Final Test) then the student concerned can apply to the lecturer to carry out a follow-up assessment/exam . 5. concerning with the lmissing lecture materials/materials due to their absenc, the students are responsibility to catch up Independently.
4. Responsible	:	
5. Reference	:	
6. Distributed to	:	Academic operator , student
7. Procedures	:	Students fill out form F2.1, attach a supporting cdocument and put it in a closed envelope that is written "LETTER OF PERMISSION/ILLNESS", Name, Student ID, Study Program and send it to the Study Program Academic Operator (OAP). 2. OAP updates the attendance status of the student concerned based on the F2.1 form and the supporting documents . 3. OAP archives excused/illness letters . 4. Submission of permit documents is carried out prior to the implementation of the lecture. Current medical evidence or urgent need can be submitted at least not later than 3 days from the stated

date
8. Related Documents

Form F2.1

	Name of Document :	Application form for not attending lectures with status of "Excused Absent " or "Medical Reason"
	Purpose :	As a reference for the operator Academic to enter the students attendance with status "Excused Absent " or "Medical Reason"

The undersigned, I

Name : .....

ID : .....

hereby notify that I am unable to attend the following lectures:

No.	Date	Course Subject and Class	Start	End

Under the following reasons:

- ☐ Participating in the event of .....
- ☐ Ilness

With the attached supporting documents in the form of:

- ☐ Letter of excuses from the parents / guardians of students
- ☐ Letter of information activities from Vice Dean I
- ☐ Medical Evidence Letter
- ☐ Other .....

Jember, ...

Concerned

.....

ID .....

Note: For Medical reason, the filling can be substituted by another person on behalf of the person concerned (parents, guardians of students, father / mother / boarding friends , etc.).