	Universitas Negeri Surabaya Faculty of Education, Special Education Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
ICT-BASED BRAILLE	8620203360		T=2	P=1	ECTS=4.77	4	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
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Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)

PLO study program that is charged to the course

PLO-10	Designs special education curriculum and service programs.

Program Objectives (PO)

PO - 1	Mastering ICT-based braille concepts, history and application of ICT-based braille theory in the learning process at school

PLO-PO Matrix

P.O	PLO-10
PO-1	

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PO-1																

Short Course Description

Discussion about the development of information and communication technology on mastery in understanding the concept of reading and writing braille using a reglet stylus device and the Mibee Braille Converter Version 4 (MBC4) program. Mastery of the application of braille theory for reading writing and arithmetic (3R) for learning in schools, including the design, use and management of braille writing equipment and the Mibee Braille Converter Version 4 (MBC4) program in braille format. Development of information and communication technology in mathematics, Indonesian, reading and writing Braille, Arabic and English letters, word markings, word part markings and sibra for blind students. Lectures are carried out using a system of presentations, discussions, project assignments and reflection.

References

Main :

1. Yayasan Mitra Netra, (2004). Program Mibee Braille Conventer 4 (MBC 4) . Jakarta.
2. Yayasan Mitra Netra, (2004). Petunjuk Penggunaan Mibee Braille Conventer 4 (MBC 4) . Jakarta.
3. Muhammad Shohib, (2012). Pedoman Membaca dan Menulis Alqur'an Braille. Jakarta : Badan Litbang dan Diklat Kementerian Agama RI.
4. Didi Tarsidi, 2010. Belajar Braille . Bandung, Universitas Pendidikan Indonesia Sekolah Pasca-Sarjana .
5. Didi Tarsidi, 2010. Modul Pembelajaran Sistem Tulisan Singkat Braille dan Bahasa Inggris . Bandung, FIP –UPI.
6. Sharon E Smaldino, dkk, 2005. Instructional Technology and Media For Learning . Ohio, By Pearson Education, Inc.
7. Barbara B.Seels, dkk, 1994. Instructional Technology : The Definition and Domains Of the Field . Washington, DC, The Publication Sales Department.
8. Menteri Pendidikan Nasional, 2000. Sistem Braille Indonesia Bidang Kimia. Jakarta : Depdikbud.
9. Menteri Pendidikan Nasional, 2001. Sistem Braille Indonesia Bidang Matematika. Jakarta : Depdikbud.
10. Menteri Pendidikan Nasional, 2001. Sistem Braille Indonesia Bidang Fisika. Jakarta : Depdikbud.

Supporters:

Supporting lecturer

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Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (*offline*)	Online (*online*)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

1	Understand competencies, descriptions, sequences of ICT-based Braille course material	Explaining competencies, descriptions, sequences of ICT-based Braille course material	**Criteria:** 1.4: Explain the 4 CPs correctly 2.3: Only correctly explains 3 CPs 3.2: Correctly explains 2 CPs 4.1: Explains 1 CP 5.0: Did not answer **Form of Assessment** : Participatory Activities	ScientificCollaborative 3 X 50		**Material:** Introduction to ICT-based Braille **Reference:** *Didi Tarsidi, 2010. Learning Braille. Bandung, Indonesian University of Education, Postgraduate School.*	5%
2	Understand the theory of instructional technology and braille learning strategies as well as tools for reading and writing braille	Explains the theory of instructional technology and braille learning strategies as well as tools for reading and writing braille	**Criteria:** 1.4: Explain the 5 types of learning correctly 2.3: Only explains precisely 3 types of learning 3.2: Explain precisely the 2 types of learning 4.1: Explain 1 type of learning 5.0: Did not answer. 6.4: Explain the 3 tools used to read and write braille correctly. 7.3: Explain the 2 tools used to read and write braille correctly. 8.2: Explain 1 phenomenon and problem of learning ATN with the tools used to read and write braille correctly. 9.1: Explain wrong. 10.4: Results of each individual's exposure to writing braille and translating braille to sighted writing **Form of Assessment** : Participatory Activities	ScientificCollaborative 3 X 50		**Material:** use of braille writing tools **Reference:** *Didi Tarsidi, 2010. Learning Braille. Bandung, Indonesian University of Education, Postgraduate School.*	5%

3	Understand the theory of instructional technology and braille learning strategies as well as tools for reading and writing braille	Explains the theory of instructional technology and braille learning strategies as well as tools for reading and writing braille	**Criteria:** 1.4: Explain the 5 types of learning correctly 2.3: Only explains precisely 3 types of learning 3.2: Explain precisely the 2 types of learning 4.1: Explain 1 type of learning 5.0: Did not answer. 6.4: Explain the 3 tools used to read and write braille correctly. 7.3: Explain the 2 tools used to read and write braille correctly. 8.2: Explain 1 phenomenon and problem of learning ATN with the tools used to read and write braille correctly. 9.1: Explain wrong. 10.4: Results of each individual's exposure to writing braille and translating braille to sighted writing **Form of Assessment** : Participatory Activities	ScientificCollaborative 3 X 50		**Material:** use of braille writing tools **Reference:** *Didi Tarsidi, 2010. Learning Braille. Bandung, Indonesian University of Education, Postgraduate School.*	5%
4	Constructing braille alphabet writing into simple words and sentences using a reglet and stylus	Describe the braille alphabet into simple words and sentences using a reglet and stylus	**Criteria:** 4: Exposure results in each group and individual **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	ScientificCollaborative 3 X 50		**Material:** Indonesian Braille **Reference:** *Didi Tarsidi, 2010. Learning Braille. Bandung, Indonesian University of Education, Postgraduate School.*	5%
5	Constructing mathematical braille writing in recognizing number symbols, decimals, fractions and arithmetic operations using A4 reglet and stylus, as well as translating braille writing into visual writing	1.Composing mathematical braille writing to recognize number symbols 2.Composing mathematical braille writing in decimal numbers and fractions 3.Transferring braille writing to sight writing and vice versa	**Criteria:** 4: Exposure results in each group and individual **Form of Assessment** : Practice / Performance	ScientificCollaborative 3 X 50		**Material:** Braille Mathematics **Reference:** *Minister of National Education, 2001. Indonesian Braille System in Mathematics. Jakarta : Department of Education and Culture.*	5%
6	Constructing mathematical braille writing in recognizing number symbols, decimals, fractions and arithmetic operations using A4 reglet and stylus, as well as translating braille writing into visual writing	1.Composing mathematical braille writing to recognize number symbols 2.Composing mathematical braille writing in decimal numbers and fractions 3.Transferring braille writing to sight writing and vice versa	**Criteria:** 4: Exposure results in each group and individual **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	ScientificCollaborative 3 X 50		**Material:** Braille Mathematics **Reference:** *Minister of National Education, 2001. Indonesian Braille System in Mathematics. Jakarta : Department of Education and Culture.*	5%

7	Constructing mathematical braille writing in recognizing number symbols, decimals, fractions and arithmetic operations using A4 reglet and stylus, as well as translating braille writing into visual writing	1. Composing mathematical braille writing to recognize number symbols 2. Composing mathematical braille writing in decimal numbers and fractions 3. Transferring braille writing to sight writing and vice versa	**Criteria:** 4: Exposure results in each group and individual **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	ScientificCollaborative 3 X 50		**Material:** Braille Mathematics **Reference:** *Minister of National Education, 2001. Indonesian Braille System in Mathematics. Jakarta : Department of Education and Culture.*	5%
8	Sub summative	Sub summative	**Criteria:** Sub summative **Form of Assessment** : Project Results Assessment / Product Assessment	Sub summative 3 X 50		**Material:** UTS **Library:** *Didi Tarsidi, 2010. Learning Braille. Bandung, Indonesian University of Education, Postgraduate School.*	10%
9	Understanding braille learning using the Mibee Braille Converter version 4 program on a computer Applying MBC 4 in mathematics	1. Applying the MBC 4 program by using the keyboard for 6 alphabets in writing braille 2. Combining 6 letters on the keyboard to write braille as a way of learning the mathematics of addition, subtraction and multiplication 3. Combining 6 letters on the keyboard to write braille as a way of studying the field of mathematics and geometry	**Criteria:** 1. 4: Correct content and systematics 2. 3: The content is correct, there are deficiencies in the systematics, or the systematic content is correct 3. 2: The contents are partly correct, and partly correct systematically 4. 1: Partly true and partly systematic or partly true and partly false. **Form of Assessment** : Practice / Performance	ScientificCollaborative 3 X 50		**Material:** MBC 4 **Reference:** *Mitra Netra Foundation, (2004). Mibee Braille Converter 4 (MBC 4) program. Jakarta.*	5%
10	Understanding braille learning using the Mibee Braille Converter version 4 program on a computer Applying MBC 4 in mathematics	1. Applying the MBC 4 program by using the keyboard for 6 alphabets in writing braille 2. Combining 6 letters on the keyboard to write braille as a way of learning the mathematics of addition, subtraction and multiplication 3. Combining 6 letters on the keyboard to write braille as a way of studying the field of mathematics and geometry	**Criteria:** 1. 4: Correct content and systematics 2. 3: The content is correct, there are deficiencies in the systematics, or the systematic content is correct 3. 2: The contents are partly correct, and partly correct systematically 4. 1: Partly true and partly systematic or partly true and partly false. **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	ScientificCollaborative 3 X 50		**Material:** MBC 4 in mathematics **Library:** *Mitra Netra Foundation, (2004). Mibee Braille Converter 4 (MBC 4) program. Jakarta.*	5%

11	Applying MBC 4 in the field of Arts, Culture and Crafts (SBDP)	1. Describe the images used in the field of Arts, Culture and Crafts (SBDP) studies 2. Combining 6 letters on the keyboard to draw using braille in the field of Arts, Culture and Crafts (SBDP)	**Criteria:** 1. 4: correct content and systematics 2. 3: the content is correct, there are deficiencies in the systematics, OR the systematic content is correct 3. 2: partially correct content, and partially correct systematics 4. 1: partially correct and partially systematic OR partially correct and incorrect in content **Form of Assessment** : Practice / Performance	ScientificCollaborative 3 X 50		**Material:** MBC 4 in the field of Arts, Culture and Crafts (SBDP) **Library:** *Mitra Netra Foundation, (2004). Mibee Braille Converter 4 (MBC 4) program. Jakarta.*	5%
12	Applying MBC 4 in the field of reading and writing the Koran Applying MBC 4 in the field of English	1. Describe in the field of reading and writing the Koran using a 6 point keyboard on an MBC 4 computer 2. Describe in English using the 6 point keyboard in MBC 4	**Criteria:** 1. 4: correct content and systematics 2. 3: the content is correct, there are deficiencies in the systematics, OR the systematic content is correct 3. 2: partially correct content, and partially correct systematics 4. 1: partially correct and partially systematic OR partially correct and incorrect in content **Form of Assessment** : Project Results Assessment / Product Assessment	ScientificCollaborative 3 X 50		**Material:** MBC 4 in the field of reading and writing the Koran Applying MBC 4 in the field of English Library **:** *Mitra Netra Foundation, (2004). Mibee Braille Converter 4 (MBC 4) program. Jakarta.*	5%

13	Applying MBC 4 in the field of reading and writing the Koran Applying MBC 4 in the field of English	1. Describe in the field of reading and writing the Koran using a 6 point keyboard on an MBC 4 computer 2. Describe in English using the 6 point keyboard in MBC 4	**Criteria:** 1. 4: correct content and systematics 2. 3: the content is correct, there are deficiencies in the systematics, OR the systematic content is correct 3. 2: partially correct content, and partially correct systematics 4. 1: partially correct and partially systematic OR partially correct and incorrect in content **Form of Assessment** : Practice / Performance	ScientificCollaborative 3 X 50		**Material:** MBC 4 in the field of reading and writing the Koran Applying MBC 4 in the field of English Library **:** *Mitra Netra Foundation, (2004). Mibee Braille Converter 4 (MBC 4) program. Jakarta.* **Material:** MBC 4 in the field of reading and writing the Koran Applying MBC 4 in the field of English Reader **:** *Muhammad Shohib, (2012). Guide to Reading and Writing the Braille Qur'an. Jakarta: Research and Development and Training Agency of the Ministry of Religion of the Republic of Indonesia.*	5%

14	Applying MBC 4 in the field of physics Applying MBC 4 in the field of chemistry	1. Describe in the field of physics using a 6 point keyboard on the MBC 4 computer program 2. Describe in the field of chemistry using a 6 point keyboard on the MBC 4 computer program	**Criteria:** 1. 4: Correct content and systematics 2. 3: The content is correct, there are deficiencies in the systematics, or the systematic content is correct 3. 2: The content is partly correct, and partially correct systematically 4. 1: Partly true and false systematic or true systematic and false content. **Form of Assessment** : Practice / Performance	ScientificCollaborative 3 X 50		**Material:** MBC 4 MIPA **Library:** *Mitra Netra Foundation, (2004). Mibee Braille Converter 4 (MBC 4) program. Jakarta.* **Material:** MBC 4 Chemistry **Library:** *Minister of National Education, 2000. Indonesian Braille System in the Field of Chemistry. Jakarta : Department of Education and Culture.* **Material:** MBC 4 Physics **Library:** *Minister of National Education, 2001. Indonesian Braille System in the Field of Physics. Jakarta : Department of Education and Culture.*	5%
15	Applying MBC 4 in the field of physics Applying MBC 4 in the field of chemistry	1. Describe in the field of physics using a 6 point keyboard on the MBC 4 computer program 2. Describe in the field of chemistry using a 6 point keyboard on the MBC 4 computer program	**Criteria:** 1. 4: Correct content and systematics 2. 3: The content is correct, there are deficiencies in the systematics, or the systematic content is correct 3. 2: The content is partly correct, and partially correct systematically 4. 1: Partly true and false systematic or true systematic and false content. **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	ScientificCollaborative 3 X 50		**Material:** MBC 4 MIPA **Library:** *Mitra Netra Foundation, (2004). Mibee Braille Converter 4 (MBC 4) program. Jakarta.*	5%
16	Summative Exam	Summative Exam	**Criteria:** Summative Exam **Form of Assessment** : Project Results Assessment / Product Assessment	Summative Exam 3 X 50		**Material:** UTS **Library:** *Mitra Netra Foundation, (2004). Mibee Braille Converter 4 (MBC 4) program. Jakarta.*	20%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	15%
2.	Project Results Assessment / Product Assessment	47.5%
3.	Practice / Performance	37.5%

	100%

Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.