

## FUTURE READY ED RIGHT SKILLS TO RIGHT JOB

### GUIDELINE FOR OUTPUT 4

# PREPARING COURSE PLAN SAMPLES ACCORDING TO KOLB LEARNING STYLES IN MATHEMATICS, GEOGRAPHY COURSES AND LESSON DESCRIPTION FOR MACHINE TECHNOLOGY AREA



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(It will be used when preparing a lesson plan suitable for learning styles)

ANNEXES



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**A) SCHEDULE AND PLANNING**

	<b>01 March 2021- 05 March 2021</b>	<b>08 March 2021 - 19 March 2021</b>	<b>22 March 2021- 26 March 2021</b>	<b>29 March 2021- 02 April 2021</b>	<b>05 April 2021- 09 April 2021</b>	<b>12 April 2021- 16 April 2021</b>
Sending the Output 4 guideline	X					
Choosing the profession and curriculum and inform it to the activity leader	X					
Changing the teaching style of the curriculum chosen for each learning style		X				
Writing a report to the project leader and sending the curriculum to the project leader			X			
Feedback of the activity leader on incoming documents				X		
Translation of curricula					X	
Delivering all documents to the project leader and putting all documents in google driver						X

## B) STEP-BY-STEP THINGS TO DO IN OUTPUT 4

1. If you are not an educational institution, a vet school that can work with output 4 and output 5 will be selected.
2. Choosing a current profession where you can work with the VET school and inform this profession to the activity leader
3. Documents related to KOLB learning styles will be shared with VET school  
(Documents will need to be reviewed by VET school.)  
(People who have questions about documents should contact Hacettepe University.)
4. A topic related to profession will be chosen in the current curriculum.
5. Lesson plan will be written using the documents and the format in the Annex 1.
6. If it is going to work on soft skill, it will be done according to the survey results. It will work with VET schools on soft skills.
7. Soft skills will be studied on what to do in the existing curriculum in order to gain students. It will be supportive of the existing curriculum. There are two options within this framework.
  - Creating one-hour or two-hour modules to support the curriculum
  - Transferring previous work to the project
8. A report will be written according to the format in Annex 5 to be written about these studies.



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**C) PROFESSIONS SELECTED FROM PARTNERS**

Partner Name	Profession Topic	Soft Skills
<ul style="list-style-type: none"> <li>- Ankara Chamber of Industry</li> <li>- ASO Technical College</li> <li>- Erkunt Vocational Training Center</li> <li>- Hacettepe Ankara Chamber of Industry 1st Organized Industrial Zone Vocational School</li> </ul>	Machinery	
Valsts Izglitibas Satura Centrs		
<ul style="list-style-type: none"> <li>- Anmiro Oy</li> <li>- TTS work Efficiency Institute- Tyotehoseura RY</li> </ul>		
Mitra France		
Chamber of Commerce and Industry Of Alava	Master´s degree in management for international trade	Flexibility Or Adaptability
Europa Training Uk		
Eesti People to People		
Fase-Formacion Y Asesores En Seleccion Y Empleo	IT technician	Flexibility Or Adaptability
Instytut Transportu Samochodowego	<ul style="list-style-type: none"> <li>- Legal issues related to occupational health and safety</li> <li>- Hazards in the work environment</li> <li>- Principles of safe work in a car company</li> <li>- Accidents at work. First aid</li> </ul>	

## D) DESCRIPTION OF THE STUDY

On October 30, 2020, Prof. Dr. A one-day training on "Learning Processes and Learning Styles" was given to our partners by Eda GÜRLLEN. In the content of this training study, "**The Formation of Learning, Learning Styles, Teaching Strategy, Teaching Methods and Techniques**" training was provided. 9 people participated in the survey.

Comments in survey is below.

- It was a very successful education. Thank you very much
- The training was very well organized, the planning was clear and the actual session was according to the planning, we had been sent documents related to the training in advance, so thank you to all who were involved in preparing it!
- I have been a VET teacher for 25 years but over the years I saw the importance of continuous training and today's training was very useful for me, I learned some new techniques. Thank you very much!
- Very good training!
- Very grateful to Eda and Nagihan for the training!
- The professor read to us what had been written on her slides. She could have enlivened her performance with examples and challenged us with her questions. Therefore, the event was a bit boring and monotonous. But the written content of the training was good.
- Thank you very much. It was a very good education.

The following topics were explained in the content of the training.

1. What is Education?
2. Formation of Learning
3. Learning Styles
4. The Place of Learning Styles in the Teaching-Learning Process
5. Teaching Strategies, Methods and Techniques

Within the scope of this study, the subject of Learning Styles was discussed in detail, and arrangement of the teaching-learning process in accordance with the Kolb Learning Styles Model was explained.

Documents related to the training are provided and are available on Google driver. (<https://drive.google.com/drive/u/1/folders/1HB5ksqFP5jQV65F6H6zc3VLRlWZ2ypTh>).

The documents are listed below:

1. Training Guide for Educators
2. Lesson plan
3. Training Guide For Educators on Arranging Teaching-Learning
4. The Process Of Implementing Test Inventory
5. Analyzing The Demographic Characteristics In Learning Styles
6. An Example Of Syllabus
7. Kolb Learning Style Inventory

Explanations about the documents are given below.

**Director:** It is defined as the person who will conduct the training.

**Educational Guidance Guide:**

1. The instructor guidance related to learning styles was prepared to guide how to use the instructor program, which consists of six session plans in total and is expected to take approximately 3-4 hours for each session, developed to organize the teaching process in accordance with learning styles.

2. The second guide was started with a brief reminder of Kolb learning styles

3. Then, the stages that should be followed during the implementation phase while applying each of the six session plans in the educational program, which was prepared in order to provide the participants with the ability to organize the teaching-learning process in accordance with their learning styles, were explained.

"Preparing the cover, writing the introduction and purpose of the plan, determining the learning objectives that the participants are expected to gain, specifying the teaching methods and techniques and materials to be used in the process, explaining how to make the assessment, and finally giving the resources that the participants can use in the sessions"

4. The lesson plan given in the guideline is also given as a sample plan that is recommended to be implemented in order to ensure systematic progress in each session in the trainer program.

5. The unit analysis table given at the end of the guide, the learning objectives determined in each of the six sessions prepared for learning styles, the topics discussed in the relevant session, the teaching methods and techniques and tools used; In other words, in order to make the process more understandable and clear, it has been summarized in a table.

#### Trainer Program

1. It is a program consisting of six session plans in total, developed to organize the teaching process in accordance with learning styles.

2. The titles of date, duration, place, equipment, method-technique, purpose, learning goal, explanation, activities, evaluation for each session are included.

3. The first session is "to increase effective communication between the trainers and the participants", the second session is "to increase the awareness of different learning styles models such as Kolb, Grasha-Reichmann, Barsch, Dunn Dunn", the third session "to organize the teaching process in accordance with concrete life learning styles", The fifth session was organized according to the objectives of "organizing the teaching process in accordance with abstract conceptualization learning styles", and the sixth session "organizing the teaching process in line with active life learning styles".

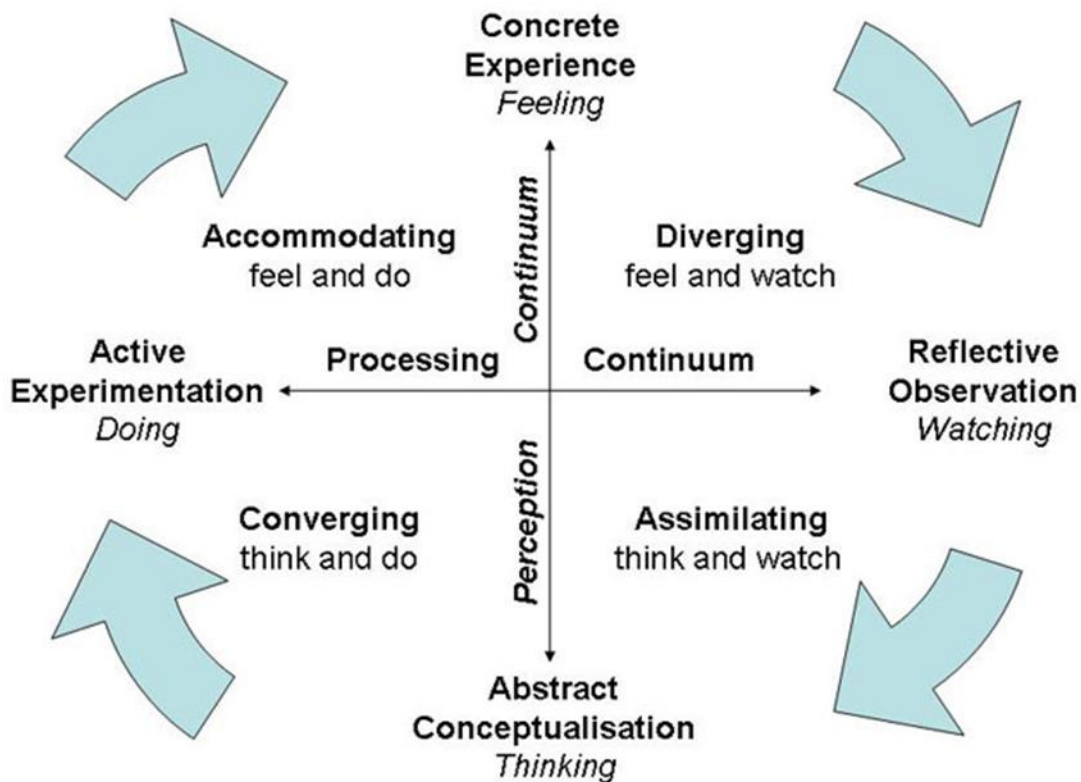
4. In each session, after explaining the learning goals and the activities and evaluation to achieve these goals step by step, what the teaching methods and techniques suggested to be used in that session and how to use them were explained. The reason for the explanation of each teaching method and technique is that someone who does not know can easily practice.

#### Demographic features

In the report titled "Demographic Features", many studies have been examined that look at the relationships between learning styles and variables of individuals' age, gender, academic achievement level, and school type. A comprehensive study was conducted in which the data obtained regarding each demographic feature were presented under separate headings.



## Kolb Learning Styles



- Based on thinking and creativity theories.
- Assimilation and Placement It takes place in J. Piaget's concept of intelligence, which is defined as the balance between the process of adapting concepts to the outside world (installation) and the adaptation of external observations to existing concepts (assimilation).
- Separation and Change takes place in two basic creativity processes from Guilford's intelligence structure model.

David A. Kolb is one of the most widely studied scientists on learning styles. The concept of learning style has gained an important place with the experiential learning theory developed by Kolb.

The approach of experiential learning theory to the learning process is quite different from the approaches of cognitive and behavioral field theories. In experiential learning theory, the link between learning, work and other vital activities and the creation of knowledge is considered important.



While Kolb was the basis of experiential learning, she was influenced by John Dewey from the philosophical view of Pragmatism, Kurt Lewin from the phenomenological view of Gestalt psychology and French developmental psychologist Jean Piaget from the rationalist view. Experiential learning theory is based on the studies of Dewey, who emphasizes the importance of individuals being active in the learning process, and Piaget, who does not see intelligence as an innate feature, but as a result of the interaction between individuals and the environment.

Kolb model defines learning as the adaptation of individuals to the social and physical environment. On the basis of Kolb's model is the transformation of human life into concepts. The Kolb model includes transformations that guide the selection of new lives.

In the experiential learning theory, four learning paths and different learning styles defined based on this are presented. According to Kolb, while learning a subject, students should go through all four learning stages.

- Concrete experience (Real life)
- Reflective Observation
- Abstract Conceptualization
- Active Experience (Active Experiment or Active Living)

The learning preferences in the learning paths that define these four learning styles are different from each other. Of these: Concrete Experience (Concrete Life) "by feeling"; Reflective Observation "by watching"; Abstract Conceptualization is based on learning by "thinking" and "by doing" Active Experience (Active Experimentation or Active Experience).

The Kolb model emphasizes that it is important to understand the current experience and solve problems instead of reaching theories or generalizations in learning with concrete experiences. At this stage, it is more important to feel the situation than to think about it. It is stated that individuals who choose the way of learning concrete experience are open to new views and tend to make decisions based on their intuition.

In this learning style, it is very important to participate in the lesson and to feel the subjects being told. Students in this group are interested in people, values, and the original conditions of the environment in which things happen. For students in this group, the most important thing is to explain the "Why" of the topic. The meaning of the subject and the aspect that interests the student is gained through discussion, animation, and using ways such as stories. As a result, it can be said that this learning style is based on learning from certain experiences, establishing relationships with people, sensing and being sensitive to people.

Reflective observation, which constitutes the second stage of the learning cycle, is the learning state where it is important to develop different perspectives by thinking on what is learned and observed. Kolb model states that individuals who adopt reflective observation learning path try to understand the thought underlying the event and its causes. At this stage, it is a matter of reflecting opinions and thoughts on the subject, questioning how the facts are formed and reaching certain decisions. In reflective observation, the question of where it originated becomes important.

Individuals who learn through reflective observation are very skilled in integrating their existing knowledge with their personal observations. These individuals have a way of thinking that can be called "engineer mind". They work with new ideas, concepts and models by conceptualizing their views. People of this type choose an inductive way of thinking by thinking logically. They prefer more teamwork and social interaction.

The third stage of the experiential learning cycle is abstract conceptualization. At this stage, contrary to learning with concrete experiences, there is a focus on logic, thought and concepts. In other words, thoughts are more important than feelings.

In the abstract conceptualization learning style, individuals show success in regular planning. In this learning style, the individual concentrates on using logic, thoughts and concepts. Learning by thinking is preferred after the logical analysis of the events. Thus, individuals can develop theory and thought.

In the first stage of the learning cycle, the student, who has concrete experiences about the subject of learning, gains different perspectives with an interrogative approach to his experiences in the second stage, and in the third stage, he understands the logical structure of the knowledge he has acquired through his experiences.

The last stage of the learning cycle is active experience. Individuals who learn through active experiences prefer to learn based on practices. Students who choose this learning path like to apply what they have learned, in other words, seeing what they learn work.

In the active experience learning style, individuals are sensitive and successful in completing a job they have started and taking risks to achieve their goals. In this learning style, students give importance to practice instead of watching. These students learn by adapting to the conditions. For these students, teaching methods such as group discussion, role play, field trip, quality circle, simulation, and brainstorming can be used.

In the experiential learning theory, it should not be thought that the learning path features are limited only to the points mentioned above. In experiential learning theory, learning styles are expressed as components of the four basic learning paths mentioned above. Accordingly, Kolb learning styles can be listed as follows;

- Changing (Converter) (diverging),
- Assimilation (Assimilator) (assimilating),
- Parsing (Distinctive) (converging)
- Placement (Adaptor) (accommodating)

**Changing, learning style;** includes concrete experience and reflective observation learning ways. Individuals with this learning style approach concrete situations from different perspectives. He prefers to observe instead of taking immediate action in any situation. These students are able to organize the relationships between various events in a meaningful way. Students who have a change learning style are patient, objective, careful, but do not take an active action during learning.

Students in the exchange learning style prefer to deal with technical issues and problems rather than social and interpersonal issues. In this approach, the closer to the thinking dimension, the more abstraction, the closer to the application dimension, the more gaining experience becomes.

The features of the change learning style can be listed as follows:

- Good problem solving and effective decision making
- Useful, rational, systematic and organized thinking
- Good guidance and focus
- Concluding by induction
- Good discrimination
- Enjoying duty



- Liking technical topics
- Comprehensive thinking
- Enjoying experience
- Concentration of attention / closed thinking
- Empathy but lack of intuition
- Poor imagination
- Theorist
- Careless thinking

The strongest aspects of individuals with change learning style are: Assessment, Imagination, Perception of People, Recognition of Problems and Perception of Different Perspectives; Weaknesses are difficulty in choosing among options, difficulty in making decisions, and sometimes inability to evaluate problems and opportunities.

**Assimilation, learning style;** It includes abstract conceptualization and reflective observation learning ways. It is stated that people with this learning style are quite successful in bringing wide and comprehensive information into a logical whole. Although students in this style have developed skills of planning and identifying problems, it has been observed that they often fail to follow a systematic approach in applied studies. It is stated that individuals with this learning style need to improve themselves in subjects such as organizing knowledge, creating conceptual models, testing theories and ideas, considering not only existing situations but also possibilities.

The characteristics of individuals with this learning style can be listed as follows:

- Abstract thinking
- Understanding inductively
- Good synthesis
- Enjoying developing theories
- Value understanding, Producing multiple perspectives
- Being analytical, logical and organized
- The ability to organize well
- Enjoying numbers and math
- Likes to design
- Enjoying concrete tasks
- Not being action-oriented
- Being less social
- Instability
- Not being mechanical
- Passive learner

**Individuals with a differentiation learning style,** It uses abstract conceptualization and active experience learning ways and is considered as "practical practitioners of ideas". It is emphasized that these people, who have deductive reasoning, have developed logical analysis, correct decision-making and problem solving skills, and prefer to deal with technical issues rather than social and interpersonal activities. It is also stated that the students who prefer to reach the correct information by making applications and experiments need the guidance of the teacher and frequent feedback.

Some of the characteristics of individuals with this style are listed as follows:

- Good summing up
- Good synthesis
- The ability to empathize
- Creativity





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- Intuitive thinking power
- Flexibility
- To be a social person
- Ability to value understanding
- Enjoying inventions
- Generating thought
- Not being systematic
- To hesitate
- Acting without thinking and acting emotionally
- Irrationality
- Not being mechanical
- Non-theoretical

It is stated that the weakest aspects of people with this learning style are wrong problem solving, quick decision making, missing focus, not testing thoughts and having scattered thoughts.

**Placement, learning style**, Students in this style use concrete experiential and active experiential learning styles. These students, who have leadership qualities, prefer to benefit from interpersonal relationships and refer to the personal information of other individuals, instead of technical analysis in the learning process. Students in the placement style, which are described as curious and investigative, generally stand out with their assertiveness, flexibility and open-mindedness.

In this style, facts are often disregarded or re-evaluated. In this orientation, people tend to learn through intuition and solve problems through erroneous behavior. These people rely more on their own analytical abilities than other people to obtain the information. Although people are comfortable with this style, they may look impatient and distressed from time to time.

In summary, the characteristics of individuals with placement learning style can be listed as follows:

- Action oriented
- Have intuitive power and being inquisitive
- Have a goal
- Search opportunity
- Being adaptable and flexible
- Risk taking
- Being open minded
- Guiding well and being social
- To be able to organize well
- Concrete thinking
- Don't act without thinking
- Being a theorist
- Being dependent on the individual
- Inadequate analytical thinking skills
- Being disorganized

Kolb (1984) created a competency circle based on the characteristics of individuals' learning paths and learning styles. In the competence circle, the prominent features of Kolb's learning styles based on the experiential learning theory are summarized.

According to Kolb (1984), change learning style reveals valuing skills such as sensitivity to other individuals' feelings, listening without prejudice, collecting information about learning, predicting / imagining the consequences of complex situations. The assimilation learning style reveals thinking skills such as organizing information, testing theories and ideas, planning experiments, and evaluating

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qualitative data. The decoupling learning style reveals decision-making skills such as creating new ideas and ways of putting them into action, trying new thoughts, choosing the best solution, and setting goals. Placement learning style reveals action-oriented skills such as commitment to the goal, taking advantage of new learning opportunities, influencing and managing others, personal participation, and dealing with other individuals.

Kolb's learning styles have been explained in detail above.

## **E) ORGANIZING THE TEACHING-LEARNING PROCESS SUITABLE TO LEARNING STYLES (It will be used when preparing a lesson plan suitable for learning styles)**

### **1) Arranging the Teaching Process According to Concrete Life Learning Styles**

**TEACHING METHODS AND TECHNIQUES:** Group work, case study, dramatization / animation, movie watching, question-answer, forum

**GOAL:** Being able to organize the teaching process in accordance with concrete life learning styles

#### **LEARNING OBJECTIVES**

- Awareness of concrete life learning style
- To be able to comprehend teaching activities suitable for concrete life learning style
- Be aware of concrete life learning style
- To be able to comprehend teaching activities suitable for concrete life learning style
- To be able to organize a teaching-learning environment suitable for concrete life learning style

#### **EVENTS**

- Heterogeneous groups of five participants are formed. The groups are created by the trainer.
- Then, if the groups want what they watched in the video, they ask them to adapt the leaves and give them time to prepare.
- Gives volunteer groups the right to speak for their animation.
- Afterwards, the working papers containing the questions about the case study are distributed to the groups, stating that they have 20-25 minutes to answer these questions.
- After the given time is over, students are given the opportunity to ask each other questions by having a large group discussion in the classroom.
- At the end of the session, the answers are discussed together in the learning environment.

#### **EVALUATION**

- At the end of the session, asking the participants to evaluate the training.
- For this purpose, one of the discussion techniques, "forum" teaching technique is applied.
- Students are asked about how they learned during the education process and why it is more effective for whom.
- This issue is discussed for a while in the form of questions and answers.
- Finally, the trainer stated that all the activities and all teaching methods and techniques applied including the forum during this session are aimed at students with a concrete life learning style; The education is ended by emphasizing that students with this learning style can learn more effectively when using cooperative learning, problem solving method, dramatization, discussion, simulation, watching movies and question-answer, laboratory,



- group work, case study methods and techniques in the teaching-learning process.

### 1) Organizing the Teaching Process According to the Reflective Learning Style

**TEACHING METHODS AND TECHNIQUES:** Teaching strategy through presentation, brainstorming, concept map, observation

**GOAL:** To be able to organize the teaching process in accordance with reflective learning styles

#### LEARNING OBJECTIVES

- Awareness of reflective observation learning style
- To be able to explain the instructional activities appropriate to the reflective observation learning style. To be able to organize a teaching-learning environment suitable for the reflective observation learning style.

#### EVENTS

- By presenting pre-organizing information about the subject to be learned, the participants try to make a connection between the existing knowledge of the students and the new information they will learn.
- Using the brainstorming technique, students' ideas about the information they will learn are taken.
- A student is chosen from the class and asked to write what was said on the board. Thus, what is said orally is made visual.
- The trainer describes the lesson using the strategy of teaching through presentation. For this, while explaining the subject, he makes a visual presentation from the projection, gives plenty of examples and asks students to make a concept map and prepare a poster. It is also stated that the participants can make different spatial arrangements on paper.
- Ask participants to reflect on their concept maps and posters to share with everyone in the class.
- Participants are encouraged to focus on evaluating from different perspectives in the classroom by carefully observing each other's work.
- In this process, the participants are warned that the participants should be patient and impartial.
- At the end of the session, students are asked to write daily the event that most positively and / or negatively affected them from what they have learned today.

#### EVALUATION

- Asks the students to make observations on the subject.
- He states that they should prepare an observation form for this.
- Emphasizes that they have enough time to make observations.
- Ask them to keep a diary every day until the next week's lessons. It provides students with information about this topic so that they can use their reflective thinking skills while writing their diaries.
- **"What did I do today? What was wrong or missing from what I did? What did I do best? How would I be better off?"** etc. It is stated that they can use their reflective thinking skills by asking questions.
- At the end of the session, it is emphasized that students with a reflective observation learning style may be asked to keep a diary, make observations, and prepare a concept map, as well as write essays, poems, etc. for creative thinking skills.
- Finally, each participant is given written feedback on their performance in the training.

## 2) Arranging the Teaching Process According to the Abstract Conceptualization Learning Style

**TEACHING METHODS AND TECHNIQUES:** Computer-aided instruction, demonstration, simulation

**GOAL:** To be able to organize the teaching process in accordance with the abstract conceptualization learning styles

### LEARNING OBJECTIVES:

- Awareness of abstract conceptualization learning style
- To be able to explain the teaching activities appropriate to the abstract conceptualization learning style
- To be able to organize a teaching-learning environment in accordance with the abstract conceptualization learning style

### EVENTS

- Since it is important for the participants to choose a certain purpose for themselves in abstract conceptualization, it is stated that they will prepare a project for the participants, it is important that this project is consistent with the learning objectives, and they will prepare the project individually.
- Before the participants start their project work, they are presented with a structured problem situation.
- It is explained from the participants that they can present the products they will obtain at the end of the project works using simulation, and those who want to make their preparations accordingly.
- Since they will focus on abstract concepts and ideas, they will need to use higher-order thinking skills more. For this reason, the trainer should be a good guide and guide and give sufficient time to the participants.
- It is stated that they can do logical analysis of ideas during the project preparation process.
- Articles on the subject they will work on are shared with the participants.
- They are reminded that they can work in a laboratory environment or make a model.
- Participants are encouraged for computer-aided instruction and are instructed to prepare graphics and diagrams on the computer.

### EVALUATION

- While evaluating the work of the participants, it is emphasized that it will be paid attention to whether they make a systematic planning or not.
- While preparing their projects, participants are asked how they work.
- In the abstract conceptualization process, it is stated that individuals will prefer to work alone, prefer clear and well-structured presentations, and do more theoretical reading.
- Participants are asked to share the information they have discovered with each other.

## 3) Organizing the Teaching Process in Accordance with Active Life Learning Style

**TEACHING METHODS AND TECHNIQUES:** Drama, role playing, station, six thinking hats

**GOAL:** To be able to organize the teaching process in accordance with active life learning style

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## LEARNING OBJECTIVES

- Awareness of active living learning style
- Being able to comprehend teaching activities suitable for active life learning style Being able to organize a teaching-learning environment suitable for active life learning style

## EVENTS

- The trainer prepares an environment where the participants can move freely.
- While planning the lesson, he takes care to make arrangements to give short breaks.
- Participants are asked to do experiment on the subject they are working on.
- They are given the opportunity to touch objects as much as possible.
- In order to ensure that the participants reinforce what they have learned, the participants are given the opportunity to actively participate in the activities by using the station technique.

### For this;

Students are divided into groups of five or six, and five groups are formed in the classroom.

Each group is given separate tasks.

- The first group is asked to prepare a poster on the subject.
- From the second group, cartoons, comics, etc. they are asked to make a drawing.
- The third group is asked to act out using the creative drama technique, accompanied by music and dance.
- The fourth group is asked to write a story.
- Fifth group is asked to prepare slogans.

After the tasks of the groups are determined, each group works on their own tables within the 15 minutes assigned to them.

After the time given to them is over, the second group goes to the table of the third group, the third group to the fourth group, and the fourth group to the fifth group and continues to work from where each group left off.

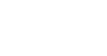
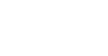
Each group takes turns contributing to the work at all tables.

## EVALUATION

- While evaluating the work of the participants, it is emphasized that whether they make systematic planning or not.
- While preparing their projects, participants are asked how they work.
- The session is concluded by evaluating the session using the six thinking hats technique.

### A) MAKING A LESSON PLAN SUITABLE FOR KOLB LEARNING STYLES

In the annex, Environment and Society unit for the Geography lesson is planned at the 10th grade level. In line with this plan, the fields of Mathematics, Chemistry and Machine Technology, Industrial Automation Technologies must prepare a subject they want for a class level they want.



This study will be prepared as a guide for our **Erasmus + (EU) Future Ed<sup>2</sup> Right Job** partners. In other partner countries, they will adapt the plans prepared in the courses here to the same or other lessons in their home country.

When preparing your plan, it should be very clear and concise so that our other partners have little trouble. In the annex, for the Geography lesson, Kolb's Concrete Life Learning Style was considered, and the teaching methods and techniques suitable for this style were chosen as group work, case study, dramatization / animation, movie watching, question-answer, forum.

This study should be done in Reflective Learning Style, Abstract Conceptualization Learning Style, Active Life Learning Style. It is like this: you chose a topic or several topics. Four lesson plans will be made using these four learning styles (in these styles specified in section C) and the recommended teaching methods and techniques. So you will have prepared four plans for each learning style from the attached geography lesson plan.

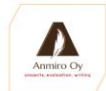
**ANNEXES:**

- 1) Lesson plan format
- 2) Example -Lesson plan for Mathematics Lesson
- 3) Example -Lesson plan for the Geography Lesson
- 4) Example-Lesson plan for the Machine Technology Field
- 5) Report format



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## Annex 1- Lesson Plan Format

It is the format to be used in lesson plans based on KOLB learning styles.

Project partner name:		DATE:
<b>CHAPTER I</b>		
Name Of The Lesson		
Classes		
Name/Number of the Unit/Module		
Subject		
Suggested Time For The Lesson		
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS/GOALS AND BEHAVIORS</b>		
Safety Measures (If Any)		
Kolb Learning Style		
Teaching-Learning Methods and Techniques		
Educational Technologies-Tools, Materials and Bibliography		
*Teacher		
*Student		
1-TEACHING-LEARNING ACTIVITIES		
2. TEACHING-LEARNING PROCESS APPROPRIATE TO LEARNING STYLES		
ARRANGEMENT		
<b>CHAPTER III</b>		
<b>ASSESSMENT AND EVALUATION</b>		
-Assessment and Evaluation for Individual Learning Activities		
- Measurement and Evaluation of Group Learning Activities		
<b>CHAPTER IV</b>		
Explanations Regarding the Implementation of the Plan		

	<p style="text-align: center;"><b>APPROVED</b> ...../12/2021 School Principal</p>
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## Annex 2- Lesson plan for Mathematics Lesson

### Lesson plan for Active Life Model

		DATE:
<b>CHAPTER I</b>		
<b>Name Of The Lesson</b>	MATHEMATICS	
<b>Classes</b>	11A-11B-11C-11D-11E-11F-11G-11H-11I-11K-11L-11M	
<b>Name/Number of the Unit/Module</b>	<b>APPLICATIONS IN FUNCTIONS</b>	
<b>Subject</b>	<b>APPLICATIONS IN FUNCTIONS</b>	
<b>Suggested Time For The Lesson</b>	4 lesson hours (40 + 40 + 40 +40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS/GOALS AND BEHAVIORS</b>		
<p><b>The students will:</b></p> <p>11.3.2.1. Interpret the graph of a quadratic variable function</p> <p>11.3.2.2. Solve problems that can be modeled with quadratic functions.</p>		
<b>Safety Measures (If Any)</b>		
<b>Kolb Learning Style</b>	<b>Active Life Model</b>	
<b>Teaching-Learning Methods and Techniques</b>	question and answer brainstorming active participation	
<b>Educational Technologies-Tools, Materials and Bibliography</b>	smart board	
<b>*Teacher</b>		
<b>*Student</b>		
<b>1-TEACHING-LEARNING ACTIVITIES</b>		
<p><u>First of all</u>, the importance of functions in our daily life is mentioned to the students.</p> <ul style="list-style-type: none"> <li>• Questions and answers are made regarding the usage areas of function graphics.</li> <li>• Ask students what kind of differences exist between: the functions <math>f(x) = ax + b</math> and <math>f(x) = ax^2 + bx + c</math>.</li> <li>• The nature of the second order functions are discussed.</li> </ul>		

- A few visuals and videos are shown with the help of a smart board so that students think about this issue.

## 2. TEACHING-LEARNING PROCESS APPROPRIATE TO LEARNING STYLES ARRANGEMENT

After visual videos are shown that the highest point of the world is **Mount Everest (8 thousand 848 meters)** and the lowest point is the bottom of the **Mariana Trench (10 thousand 994 meters)**, students are asked which mathematical concepts can be expressed in these points.

Then, by asking which similar examples can be given, students' ideas are written on the board with the brainstorming activity. By expressing that this structure is a parabola function, the question of how to calculate these maximum and minimum points is asked, and students are asked to use their problem solving skills.

### CHAPTER III

<p><b>ASSESSMENT AND EVALUATION</b></p> <p>* <b>Assessment and Evaluation for Individual Learning Activities</b></p> <p>* <b>Measurement and Evaluation of Group Learning Activities</b></p>	<p><b>1. Assessment and evaluation for individual learning activities:</b> Developing individual problem solving skills.</p> <p><b>2. Assessment and evaluation for group learning activities:</b> Respect different ideas thanks to brainstorming as a group.</p>
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### CHAPTER IV

<p><b>Explanations Regarding the Implementation of the Plan</b></p>	<p>The subject was taught within the suggested 4 lesson hours and it achieved its purpose by making evaluations.</p>
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<p>Mathematics Teacher</p>	<p><b>APPROVED</b></p> <p>...../12/2020</p> <p>School Principal</p>
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**Lesson plan for Concrete life model**

		<b>DATE:</b>
<b>CHAPTER I</b>		
<b>Name Of The Lesson</b>	MATHEMATICS	
<b>Classes</b>	11A-11B-11C-11D-11E-11F-11G-11H-11I-11K-11L-11M	
<b>Name/Number of the Unit/Module</b>	<b>APPLICATIONS IN FUNCTIONS</b>	
<b>Subject</b>	<b>APPLICATIONS IN FUNCTIONS</b>	
<b>Suggested Time For The Lesson</b>	4 lesson hours (40 + 40 + 40 +40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS/GOALS AND BEHAVIORS</b>		
11.3.1.1. Solves problems using graph and table representation of the function.		
<b>Safety Measures (If Any)</b>		
<b>Kolb Learning Style</b>	<b>Concrete life model</b>	
<b>Teaching-Learning Methods and Techniques</b>	Group work Case study Question and answer	
<b>Educational Technologies-Tools, Materials and Bibliography</b>	Smart board	
<b>*Teacher</b>		
<b>*Student</b>		

**Lesson plan for Reflective learning model**

		<b>DATE:</b>
<b>CHAPTER I</b>		
<b>Name Of The Lesson</b>	<b>MATHEMATICS</b>	
<b>Classes</b>	9A-9B-9C-9D-9E-9F-9G-9H-9I-9K	
<b>Name/Number of the Unit/Module</b>	<b>EQUATIONS AND INEQUALITIES</b>	
<b>Subject</b>	<b>SIMPLE INEQUALITIES</b>	
<b>Suggested Time For The Lesson</b>	<b>4 lesson hours (40 + 40 + 40 +40 minutes)</b>	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS/GOALS AND BEHAVIORS</b>		
9.3.3.1 explain the concept of real numbers set intervals.		
9.3.3.2 Finds the solution sets of equations and inequalities with a first order unknown.		
<b>Safety Measures (If Any)</b>		
<b>Kolb Learning Style</b>	<b>Reflective learning model</b>	
<b>Teaching-Learning Methods and Techniques</b>	Brainstorming Question and answer Way of presentation Observation Discussion technique Concept map	
<b>Educational Technologies-Tools, Materials and Bibliography</b>	Smart board	
<b>*Teacher</b>		
<b>*Student</b>		

**TEACHING-LEARNING ACTIVITIES**

1.

- First of all, the concepts of equality and inequality are asked to students to gain an idea.
- Various visuals depicting the place of inequality in daily life are given.
- Then, according to these visuals, students are asked to make concept maps containing examples of inequality.

**2. TEACHING-LEARNING PROCESS SUITABLE FOR LEARNING STYLES**

**ARRANGEMENT**

In order to make students think about inequality, various images were presented and the contribution of these images to our lives was asked. What other examples can we give? Brainstorming is done by asking the question.

For example; **“Which would be more economical to buy by showing two products with different weight and prices in the market?”** The question is posed as. It is realized that this comparison they make is actually an inequality.

As another example;  
Alternative routes between points A and B are shown on the navigation application. **“Which way you use will be more economical or shorter time to use which way?”** by asking questions such as: Concept maps about inequality examples are made after the activities.

**By hanging them in various parts of the classroom, they can be observed and discussed together.**

**CHAPTER III**

<p><b>ASSESSMENT AND EVALUATION</b></p> <p>* <b>Assessment and Evaluation for Individual Learning Activities</b></p> <p>* <b>Measurement and Evaluation of Group Learning Activities</b></p>	<p><b>1. Assessment and evaluation for individual learning activities:</b> Linking existing information with the subject</p> <p><b>2. Assessment and evaluation for group learning activities:</b> Developing perspectives by observing the presentations of different people</p>
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**CHAPTER IV**

<p><b>Explanations Regarding the Implementation of the Plan</b></p>	<p>The subject was taught within the suggested 4 lesson hours and it achieved its purpose by making evaluations.</p>
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Mathematics Teacher

**APPROVED**

...../12/2021

School Principal

**Lesson plan for Abstract conceptualization learning model**

		<b>DATE:</b>
<b>CHAPTER I</b>		
<b>Name Of The Lesson</b>	<b>MATHEMATICS</b>	
<b>Classes</b>	11A-11B-11C-11D-11E-11F-11G-11H-11I-11K-11L-11M	
<b>Name/Number of the Unit/Module</b>	<b>APPLICATIONS IN FUNCTIONS</b>	
<b>Subject</b>	<b>APPLICATIONS IN FUNCTIONS</b>	
<b>Suggested Time For The Lesson</b>	<b>4 lesson hours (40 + 40 + 40 +40 minutes)</b>	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS/GOALS AND BEHAVIORS</b>		
11.3.2.1. Interprets the graph of a quadratic variable function.		
<b>Safety Measures (If Any)</b>		
<b>Kolb Learning Style</b>	<b>Abstract conceptualization learning model</b>	
<b>Teaching-Learning Methods and Techniques</b>	Demonstration Computer-assisted teaching	
<b>Educational Technologies-Tools, Materials and Bibliography</b>	Smart board Computer	
<b>*Teacher</b>		
<b>*Student</b>		

**1-TEACHING-LEARNING ACTIVITIES**

- First of all, the students are reminded of their prior knowledge by asking the graph of the **2<sup>nd</sup> degree function.**
- Then, using the GeoGebra Computer program, **the plot of the parabola  $f(x) = x^2$**  is shown.
- Students are also asked to draw the parabola  $f(x) = ax^2$ . **As they change the coefficients, they are asked to observe the change occurring in the parabola.**

**1. TEACHING-LEARNING PROCESS SUITABLE FOR LEARNING STYLES**

**ARRANGEMENT**

Graphic drawing is explained to students **by using computer-aided instruction technique.** The intended use and application of the **GeoGebra computer program** are shown.

Students are asked to change their coefficients by drawing a second order function graph. For example; **They are asked to note the change in the arms of the parabola as the values of a in the graph  $f(x) = ax^2$  change.**

They are asked to organize this information by asking for which a situations the arms of the parabola are narrowed and in which cases it decreases.

Then, they are asked to achieve similar results by creating such changes in other function types.

**CHAPTER III**

<p><b>ASSESSMENT AND EVALUATION</b></p> <p><b>* Assessment and Evaluation for Individual Learning</b></p> <p><b>* Measurement and Evaluation of Group Learning Activities</b></p>	<p><b>1. Assessment and evaluation for individual learning activities:</b> Developing a sense of learning by doing.</p> <p><b>2. Assessment and evaluation for group learning activities:</b> Sharing the information they discover with each other</p>
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**CHAPTER IV**

<p><b>Explanations Regarding the Implementation of the Plan</b></p>	<p>The subject was taught within the suggested 4 lesson hours and it achieved its purpose by making evaluations.</p>
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<p>Mathematics Teacher</p>	<p><b>APPROVED</b></p> <p>...../12/2020</p> <p>School Principal</p>
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### Annex 3- Lesson plan for the Geography Lesson

#### Lesson plan for Active Life Model

		DATE:
<b>CHAPTER I</b>		
<b>Name Of The Lesson</b>	GEOGRAPHY	
<b>Classes</b>	10A-10B-10C-10D-10E-10F-10G-10H-10I-10K-10L-10M	
<b>Name/Number of the Unit/Module</b>	<b>Natural Systems</b>	
<b>Subject</b>	<b>Natural Systems</b>	
<b>Suggested Time For The Lesson</b>	4 lesson hours (40 + 40 + 40 +40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS/GOALS AND BEHAVIORS</b>		
<p><b>The students will:</b></p> <p>10.4.1.- Explain the causes and characteristics of disasters.</p> <p>10.4.2.- Relate the distribution of disasters and their effects.</p> <p>10.4.3.- Correlate with the distribution of the effects of disasters in Turkey.</p> <p>10.4.4.- Explain the methods of protection from disasters.</p>		
<b>Safety Measures (If Any)</b>		
<b>Kolb Learning Style</b>	<b>Active Life Model</b>	
<b>Teaching-Learning Methods and Techniques</b>	question and answer brainstorming simulation (analogy) active participation	
<b>Educational Technologies-Tools, Materials and Bibliography</b>	smart map simulation center	board
<b>*Teacher</b>		
<b>*Student</b>		



<b>1-TEACHING-LEARNING</b>	<b>ACTIVITIES</b>
<ul style="list-style-type: none"> <li>• <u>First of all</u>, students are informed about the earthquake issue.</li> <li>• Students' knowledge and experiences about earthquake protection methods are questioned.</li> <li>• Then a few images and videos are shown with the help of the smart board.</li> <li>• We go to the simulation center in order for the students to understand better.</li> <li>• Finally, the active participation of students is ensured with the earthquake drill.</li> </ul>	
<b>2. TEACHING-LEARNING PROCESS APPROPRIATE TO LEARNING STYLES ARRANGEMENT</b>	
<ul style="list-style-type: none"> <li>• As a result of the lecture and demonstration method, the problem is presented first to apply the brainstorming method with the students.</li> <li>• What are the methods of raising awareness and protection against earthquakes? The question is asked to the class.</li> <li>• Their opinions are taken from each student without restrictions and comments and are written on the board.</li> <li>• All comments made are discussed by the class and concluded.</li> </ul>	
<b>CHAPTER III</b>	
<p style="text-align: center;"><b>ASSESSMENT AND EVALUATION</b></p> <p>* <b>Assessment and Evaluation for Individual Learning Activities</b></p> <p>* <b>Measurement and Evaluation of Group Learning Activities</b></p>	<p><b>1. Assessment and evaluation for individual learning activities:</b> Developing students' sense of individual empathy by using visuals about earthquake</p> <p><b>2. Assessment and evaluation for group learning activities:</b> In the exercise, the students take the earthquake seriously and follow the instructions given to create earthquake awareness.</p>
<b>CHAPTER IV</b>	
<b>Explanations Regarding the Implementation of the Plan</b>	The subject was taught within the suggested 4 lesson hours and it achieved its purpose by making evaluations.
Geography Teacher	<p style="text-align: center;"><b>APPROVED</b></p> <p style="text-align: center;">...../12/2020</p> <p style="text-align: center;">School Principal</p>

		<b>DATE:</b>
<b>CHAPTER I</b>		
<b>Name Of The Lesson</b>	GEOGRAPHY	
<b>Classes</b>	10A-10B-10C-10D-10E-10F-10G-10H-10I-10K-10L-10M	
<b>Name/Number of the Unit/Module</b>	<b>Natural Systems</b>	
<b>Subject</b>	<b>Natural Systems</b>	
<b>Suggested Time For The Lesson</b>	4 lesson hours (40 + 40 + 40 +40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS/GOALS AND BEHAVIORS</b>		
10.1.9.- Categorizes the water existence on earth according to its characteristics.		
10:10 ..- General characteristics of the water presence in Turkey and describes the distribution.		
10:11 ..- Economically efficient use of water assets in Turkey, evaluates the social and cultural effects.		
<b>Safety Measures (If Any)</b>		
<b>Kolb Learning Style</b>	<b>Active Life Model</b>	
<b>Teaching-Learning Methods and Techniques</b>	Case study question and answer presentation method simulation discussion technique	
<b>Educational Technologies-Tools, Materials and Bibliography</b>	Smart map	board
<b>*Teacher</b>		
<b>*Student</b>		

## 1. TEACHING-LEARNING

## ACTIVITIES

- First of all, students are informed about water geography.
- A report is distributed to the students to apply the case study method.
- Later, students are allowed to review the report.
- Pre-determined questions are directed to the student.
- In this way, they are expected to feel and resolve the problem.

## 2. TEACHING-LEARNING PROCESS SUITABLE FOR LEARNING STYLES ARRANGEMENT

The students were given the following ready text:

"High school geography teacher Halil YAMAN organizes a trip for his students to get information about Çubuk dam in Ankara. Presence of water in the dam instead they went quite a few trips that students asks questions like **"Do a water shortage happen in Turkey?"** Upon this, Halil teacher, who made statements, asked questions to the students.

- **Have you spent a few days without water before**
- **How important do you think water is for human life?**
- **What happens if there is no water?**
- **What awaits humanity if the thirst you see lasts for many years?"**

At the end of the lesson, possible causes and protection methods were discussed with the discussion technique.

## CHAPTER III

ASSESSMENT AND EVALUATION	
* <b>Assessment and Evaluation for Individual Learning</b>	<b>1. Assessment and evaluation for individual learning activities:</b> Increasing students' sensitivity to problems by providing individual participation.
* <b>Measurement and Evaluation of Group Learning Activities</b>	<b>2. Assessment and evaluation for group learning activities:</b> To be able to listen and respect each other with the case study.

## CHAPTER IV

<b>Explanations Regarding the Implementation of the Plan</b>	The subject was taught within the suggested 4 lesson hours and it achieved its purpose by making evaluations.
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Geography Teacher	...../12/2020 School Principal
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		<b>DATE:</b>
<b>CHAPTER I</b>		
<b>Name Of The Lesson</b>	GEOGRAPHY	
<b>Classes</b>	10A-10B-10C-10D-10E-10F-10G-10H-10I-10K-10L-10M	
<b>Name/Number of the Unit/Module</b>	Human systems	
<b>Subject</b>	Human systems	
<b>Suggested Time For The Lesson</b>	2 lesson hours (40 + 40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT</b>	<b>ACHIEVEMENTS/GOALS</b>	<b>AND BEHAVIORS</b>
<b>The students will:</b>		
10.2.8.- Make inferences about the causes and consequences of migration in the world.		
10.2.9.- Assess migration in terms of causes and consequences in Turkey.		
10.2.10.- Explain with examples 10.2.10.- spatial impact of immigration from Turkey.		
<b>Safety Measures (If Any)</b>		
<b>Kolb Learning Style</b>	Reflective learning model	
<b>Teaching-Learning Methods and Techniques</b>	Brainstorming Question and answer Presentation Observation Discussion technique Concept map	
<b>Educational Technologies-Tools, Materials and Bibliography</b>	Smart board map atlas	
<b>*Teacher</b>		
<b>*Student</b>		

<p><b>1. TEACHING-LEARNING</b></p> <ul style="list-style-type: none"> <li>• First of all, information about migration and its reasons is asked.</li> <li>• Some videos and visuals are prepared to be shown to students.</li> <li>• Later, students are allowed to examine the images and establish a concept network.</li> </ul> <p><b>2. TEACHING-LEARNING PROCESS SUITABLE FOR LEARNING STYLES ARRANGEMENT</b></p> <p>The method of creating a concept network was used to convey the reasons and types of migration to the students more clearly. For this reason, the reasons for migration are written on the board using the brainstorming technique at the beginning of the lesson.</p> <p>Visuals are presented to the student on the smart board. And they are asked to make a concept map. Prepared maps are hung in the corners of the classroom so that everyone can see and benefit. In this way, it is ensured that students realize different points of view.</p>	<p><b>ACTIVITIES</b></p>
<p><b>CHAPTER III</b></p>	
<p><b>ASSESSMENT AND EVALUATION</b></p> <p>* <b>Assessment and Evaluation for Individual Learning</b></p> <p>* <b>Measurement and Evaluation of Group Learning Activities</b></p>	<p><b>1. Assessment and evaluation for individual learning activities:</b> Their ability to express thoughts freely</p> <p><b>2. Assessment and evaluation for group learning activities:</b> Being open to different points of view.</p>
<p><b>CHAPTER IV</b></p>	
<p><b>Explanations Regarding the Implementation of the Plan</b></p>	<p>The subject was taught within the suggested 2 lesson hours and it achieved its purpose by making evaluations.</p>
<p>Geography Teacher</p>	<p><b>APPROVED</b></p> <p>...../12/2020</p> <p>School Principal</p>

		<b>DATE:</b>
<b>CHAPTER I</b>		
<b>Name Of The Lesson</b>	GEOGRAPHY	
<b>Classes</b>	10A-10B-10C-10D-10E-10F-10G-10H-10I-10K-10L-10M	
<b>Name/Number of the Unit/Module</b>	<b>Environment and society</b>	
<b>Subject</b>	<b>Environment and society</b>	
<b>Suggested Time For The Lesson</b>	2 lesson hours (40 + 40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT</b>	<b>ACHIEVEMENTS/GOALS</b>	<b>AND BEHAVIORS</b>
<b>The students will:</b>		
10.4.1.- Explain the occurrence reasons and characteristics of disasters.		
10.4.2.- Relate the distribution and effects of disasters.		
10.4.3.- Relate distribution and impact of disasters in Turkey.		
<b>Safety Measures (If Any)</b>		
<b>Kolb Learning Style</b>	<b>Abstract conceptualization learning model</b>	
<b>Teaching-Learning Methods and Techniques</b>	Screening Simulation Computer aided instruction Fishbone method	
<b>Educational Technologies-Tools, Materials and Bibliography</b>	Smart board map atlas	
<b>*Teacher</b>		
<b>*Student</b>		

<b>1-TEACHING-LEARNING ACTIVITIES</b>	
<ul style="list-style-type: none"> <li>• First, students are asked about their information about disasters and their effects.</li> <li>• To apply the fishbone method, a large fish diagram is drawn on the board.</li> <li>• Then the fishbone activity with the main title of the causes of disasters is started.</li> <li>• Students are asked to deal with the main and sub-causes of disasters on fish.</li> </ul>	
<b>2. TEACHING-LEARNING PROCESS APPROPRIATE TO LEARNING STYLES ARRANGEMENT</b>	
The fishbone technique, which we think will contribute to the teaching learning process, has been found suitable for the subject of disasters.	
Students are given a possible situation - the problem. <b><u>(Causes and consequences of disasters)</u></b>	
Regarding this situation, students are asked to find the reasons one by one.	
Thus, the ability of students to question possible reasons and to associate them with other reasons is provided. It reinforces skills such as recognizing the problem, generating reasons, and analyzing.	
<b>CHAPTER III</b>	
<b>ASSESSMENT AND EVALUATION</b>	<b>1. Assessment and evaluation for individual learning activities:</b>
* <b>Assessment and Evaluation for Individual Learning Activities</b>	Ability of questioning
* <b>Measurement and Evaluation of Group Learning Activities</b>	<b>2. Assessment and evaluation for group learning activities:</b>
	Ability to associate possible causes
<b>CHAPTER IV</b>	
<b>Explanations Regarding the Implementation of the Plan</b>	The subject was taught within the suggested 2 lesson hours and it achieved its purpose by making evaluations.
<b>Halil İbrahim YAMAN</b> Geography Teacher	<b>APPROVED</b> ...../12/2020  School Principal

# Annex 4- -Lesson plan for the Machine Technology Field

## ANNEX 1

### LESSON PLAN

(Designed According to Kolb Learning Style)

PRIVATE ANKARA CHAMBER OF INDUSTRY VOCATIONAL TECHNICAL ANATOLIAN HIGH SCHOOL AND ERKUNT VOCATIONAL TRAINING CENTER		HISTORY:
<b>CHAPTER I</b>		
Course title	BASIC MANUFACTURING PROCESSES	
Classes	10E-10G-10L-10I	
Unit (Module) Name / No	Hand Operations	
Topic	Work Safety and Plane Surface Filing in the Workshop	
Recommended Duration	2 course hours lecture (40 + 40 minutes)  6 lesson hours Practice (40 + 40 + 40 + 40 + 40 + 40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS / GOAL AND BEHAVIOR</b>		
<ol style="list-style-type: none"> <li>1. Understands the rules of the workshop work discipline.</li> <li>2. Understands chip removal types and chip removal methods.</li> <li>3. Learns to attach handle to chip remover.</li> <li>4. Takes appropriate posture in vise.</li> </ol>		
Security Measures (If Any)	Personal safety equipment is used in the workshop.	
Kolb Learning Style	<b>Reflective Observation</b>	
Teaching-Learning-Methods and Techniques	Lecture note, Visual video, question-answer	
Educational Technologies-Tools, Materials and Bibliography	Computer, smart board, Personal security equipment, Chip removal types	
*Teacher		
*Student		



**TEACHING-LEARNING ACTIVITIES**

1. Prepared laboratory occupational health safety lecture note is presented in the classroom by making a presentation on the smart board.
2. Videos explaining the importance of occupational health and safety are shown to students on the smart board.
3. The lecture note including plane surface chip removal is explained by making a presentation on the smart board.
4. An introduction is made about the laboratory to be used. Occupational safety rules to be followed in this laboratory are explained together with the personal equipment to be used.
5. By making the definition of leveling, the first of the equipment to be used in the leveling process, the chip removal tool types are shown together and file types are explained according to their usage areas.
6. Chip removal methods and techniques are shown practically in the workshop environment on the worker's bench.

**ORGANIZING THE TEACHING-LEARNING PROCESS ACCORDING TO LEARNING STYLES**

As a result of the lecture and demonstration method, the method of brainstorming will be applied with the students,

- What are the occupational health and safety measures? Why should these measures be taken?
- What are the types of metal removal tools and their usage areas?

The questions are asked to the class, their opinions are taken and written on the board and the answers are interpreted as a class.

**CHAPTER III**

**ASSESSMENT AND EVALUATION**

**\* Assessment and Evaluation for Individual Learning Activities**

**\* Measurement and Evaluation of Group Learning Activities**

**1. Assessment and evaluation for individual learning activities**

**Quick grasp of chip removal technique**

**2. Assessment and evaluation for group learning activities**

**- They understand the importance of security measures well.**

**CHAPTER IV**

**Explanations Regarding the Implementation of the Plan**

**The subject was taught within the suggested 7 course hours and it achieved its purpose by making evaluations.**

Mechanical Teacher

**APPROVED**

...../03/2021

School Principal

**ANNEX 2**  
**LESSON PLAN**  
**(Designed According to Kolb Learning Style)**

PRIVATE ANKARA CHAMBER OF INDUSTRY VOCATIONAL TECHNICAL ANATOLIAN HIGH SCHOOL AND ERKUNT VOCATIONAL TRAINING CENTER		HISTORY:
<b>CHAPTER I</b>		
<b>Course title</b>	BASIC MANUFACTURING PROCESSES	
<b>Classes</b>	10E-10G-10L-10I	
<b>Unit (Module) Name / No</b>	Basic Turning Operations	
<b>Topic</b>	Connecting Cutters	
<b>Recommended Duration</b>	2 course hours lecture (40 + 40 minutes)  6 lesson hours Practice (40 + 40 + 40 + 40 + 40 + 40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS / GOAL AND BEHAVIOR</b>		
<ol style="list-style-type: none"> <li>1. Recognize the types and parts of lathe.</li> <li>2. Connect the pen properly to the catheter and the catheter to the pen holder.</li> <li>3. Provides suitable cutting conditions.</li> <li>4. Chooses cutters instead of use.</li> </ol>		
<b>Security Measures (If Any)</b>	Personal safety equipment is used in the workshop.	
<b>Kolb Learning Style</b>	<b>Abstract Conceptualization</b>	
<b>Teaching-Learning-Methods and Techniques</b>	Lecture, Demonstration on Lathe, Introducing Cutting Tools, Question and Answer	
<b>Educational Technologies-Tools, Materials and Bibliography</b>		
<b>*Teacher</b>	Computer, Smart Board, Lathe	
<b>*Student</b>		

### TEACHING-LEARNING ACTIVITIES

1. Prepared Lathe Machines lecture note is explained in the classroom by making a presentation on the smart board.
2. It is ensured that students gain awareness by watching videos on the smart board that explain the importance of occupational health safety and contain occupational accidents in case of non-compliance.
3. The introduction of cutting tools is made to students in the workshop environment and how they should be connected to the lathe toolholder is shown. The lesson is completed by making the application by emphasizing the issues to be considered in the connections.

#### ORGANIZING THE TEACHING-LEARNING PROCESS ACCORDING TO LEARNING STYLES

As a result of the lecture and demonstration method, the class;

- The question of what happens when the cutting tools are attached to the counter for a long time is asked to the class and the answers are written on the board and the answers are interpreted by the class.

Students are divided into groups and at the end of the lesson;

-The investigation of how irregular cutting tool marks on the workpiece might be related to the toolholder connection is given to the groups as homework.

### CHAPTER III

#### ASSESSMENT AND EVALUATION

\* Assessment and Evaluation for Individual Learning Activities

\* Measurement and Evaluation of Group Learning Activities

**1. Assessment and evaluation for individual learning activities**

- Understanding the importance of connecting cutting tools

**2. Assessment and evaluation for group learning activities**

- Increasing the spirit of research.

### CHAPTER IV

**Explanations Regarding the Implementation of the Plan**

The subject was taught within the recommended 8 course hours and it achieved its purpose by making evaluations.

Mechanical Teacher

**APPROVED**

...../03/2021

School Principal

**ANNEX 3**  
**LESSON PLAN**  
**(Designed According to Kolb Learning Style)**

PRIVATE ANKARA CHAMBER OF INDUSTRY VOCATIONAL TECHNICAL ANATOLIAN HIGH SCHOOL AND ERKUNT VOCATIONAL TRAINING CENTER		HISTORY:
<b>CHAPTER I</b>		
Course title	BASIC MANUFACTURING PROCESSES	
Classes	10E-10G-10L-10I	
Unit (Module) Name / No	Drilling and Screwing Operations	
Topic	Drill Bit Sharpening	
Recommended Duration	2 course hours lecture (40 + 40 minutes)  6 lesson hours Practice (40 + 40 + 40 + 40 + 40 + 40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS / GOAL AND BEHAVIOR</b>		
<b>1. Knows the types of drill and the parts of the drill.</b> <b>2. Learns the drill point angle determination.</b> <b>3. Makes the drill sharpening by adjusting the sandpaper settings.</b>		
Security Measures (If Any)	Personal safety equipment is used in the workshop.	
Kolb Learning Style	<b>Active Living</b>	
Teaching-Learning-Methods and Techniques	Lecture, Workshop Presentation, Visual Introducing Drills, Sharpening Practice, Question and Answer	
Educational Technologies-Tools, Materials and Bibliography	Computer, Smart Board, Emery Stone, Different Diameter Drills	
*Teacher		
*Student		

**TEACHING-LEARNING ACTIVITIES**

1. The lecture note prepared is presented in the classroom by making a presentation on the smart board.
2. It is ensured that students gain awareness by watching the drill sharpening video on the smart board, accompanied by videos explaining the importance of occupational health safety, which should be followed in drill sharpening.
3. A visual presentation is made to the students by switching to the workshop environment and here with the Drills varieties. Each student is given a drill and can be inspected, so that they can learn together with the other parts of the drill.
4. Students are positioned at a safe distance on the head of the grinding stone and one drill sharpening application is made.
5. It is ensured that each student learns the drill sharpening process by practicing under the supervision of the teacher.

**ORGANIZING THE TEACHING-LEARNING PROCESS ACCORDING TO LEARNING STYLES**

As a result of the application in the workshop environment;

What are the steps to be followed in drill sharpening, respectively? By asking the question, they are provided with awareness.

-Choosing a student from the class, the class is asked to have the imaginary sharpening done by verbal instructions, as if this student was sharpening on an emery stone machine.

**CHAPTER III**

**ASSESSMENT AND EVALUATION**

**\* Assessment and Evaluation for Individual Learning Activities**

**\* Measurement and Evaluation of Group Learning Activities**

**1. Assessment and evaluation for individual learning activities**

- The parts of the drill and the shape of the geometric lines that a drill needs to be able to cut in his mind.

**2. Assessment and evaluation for group learning activities**

- To comprehend the sharpening logic as a result of the application in the workshop.

**CHAPTER IV**

**Explanations Regarding the Implementation of the Plan**

The subject was taught within the recommended 8 course hours and it achieved its purpose by making evaluations.

Mechanical Teacher

**APPROVED**

...../01/2021

School Principal

**ANNEX 4**  
**LESSON PLAN**  
**(Designed According to Kolb Learning Style)**

PRIVATE ANKARA CHAMBER OF INDUSTRY VOCATIONAL TECHNICAL ANATOLIAN HIGH SCHOOL AND ERKUNT VOCATIONAL TRAINING CENTER		HISTORY:
<b>CHAPTER I</b>		
<b>Course title</b>	BASIC MANUFACTURING PROCESSES	
<b>Classes</b>	10E-10G-10L-10I	
<b>Unit (Module) Name / No</b>	Basic Turning Operations	
<b>Topic</b>	Step Turning	
<b>Recommended Duration</b>	2 course hours lecture (40 + 40 minutes) 6 lesson hours Practice (40 + 40 + 40 + 40 + 40 + 40 minutes)	
<b>CHAPTER II</b>		
<b>STUDENT ACHIEVEMENTS / GOAL AND BEHAVIOR</b>		
<p>1. Knows which type of pen to use on lathe.</p> <p>2. Understands the diameter of the lathe at which cycle it can work.</p> <p>3. Learns to process standard surface quality on lathe.</p> <p>4. Gains the ability to work in different diameter values.</p>		
<b>Security Measures (If Any)</b>	Personal safety equipment is used in the workshop.	
<b>Kolb Learning Style</b>	<b>Realistic Living Experience</b>	
<b>Teaching-Learning-Methods and Techniques</b>	Lecture, Practice on Lathe, Question and answer	
<b>Educational Technologies-Tools, Materials and Bibliography</b>	Computer, Smart Board, Lathe, Cutting Tools	
<b>*Teacher</b>		
<b>*Student</b>		

### TEACHING-LEARNING ACTIVITIES

1. 1. The lecture note prepared is presented in the classroom by making a presentation on the smart board.
2. 2. In order to process the workpiece with different diameters in a standard surface quality that will arise in the step turning process on the machine, the information about the importance of the appropriate speed and feed amount and the formulas are taught.
3. 3. In the workshop environment, the students are divided into groups of 2 and each group is given technical drawings in different sizes and they are asked to process the parts by using the calculations and techniques taught on the loom.

#### ORGANIZING THE TEACHING-LEARNING PROCESS ACCORDING TO LEARNING STYLES

As a result of the workshop application;

-Students determine with which pen they should process the workpiece first, in the light of the previously learned information.

- They start to process the workpiece according to the values they obtain by calculating the required diameter, revolution and cutting speed.

They comprehend the importance of acting together in -2-person group work, and by ensuring that one person works at the counter and the others work at the counter by taking the work safety precautions, no concessions should be made from occupational safety.

### CHAPTER III

#### ASSESSMENT AND EVALUATION

\* Assessment and Evaluation for Individual Learning Activities

\* Measurement and Evaluation of Group Learning Activities

**1. Assessment and evaluation for individual learning activities**

- Understands the importance that good work can be done in terms of quality when acting on the bench in the light of technical data.

**2. Assessment and evaluation for group learning activities**

It is observed that the importance and safety of working together in the workshop environment is understood.

### CHAPTER IV

**Explanations Regarding the Implementation of the Plan**

The subject was taught within the recommended 8 course hours and it achieved its purpose by making evaluations.

Mechanical Teacher

**APPROVED**

...../01/2021

School Principal

**Annex-5- Report Format**

<b>Project partner's name</b>	
<b>If there is a Vet organization where the project partner works, its name</b>	
<b>VET school's name that work with (if available)</b>	
<b>Professional field working at Output 4 (If it has been studied in a different area reported, please write the reason)</b>	
<b>What are the problems encountered while working on KOLB learning styles?</b>	
<b>Soft skills name</b>	
<b>What are the studies about soft skills? (How can soft skills be acquired by students in the current curriculum? If small modules can be added to the existing curriculum on this subject, how should they be added? Can the curriculum be taught differently in order to gain soft skills? If so, how?)</b>	