

**LECTURER PLANNING FOR TEACHING SCIENCE AND TECHNOLOGY LAB-I APPLICATIONS  
FOR THE FACULTY OF EDUCATION  
( TST LAB-I 303)**

<b>Course name</b>	<b>TEACHING SCIENCE AND TECHNOLOGY LAB-I</b>
<b>Course code</b>	<b>TST LAB-I 303</b>
<b>Course level</b>	<b>FIRST CYCLE</b>
<b>The AKTS Credit (ECTS)</b>	<b>3</b>
<b>Hours p/week(theoretical)</b>	<b>0</b>
<b>Hours p/week(application)</b>	<b>0</b>
<b>Hours p/week(Laboratory)</b>	<b>2</b>
<b>Years of the course</b>	<b>SECOND CLASS</b>
<b>Semester of the course</b>	<b>PRIMARY</b>
<b>Lecturer</b>	<b>PROF.DR. MEHMET ARSLAN</b>
<b>Teaching system</b>	<b>FORMAL EDUCATION / LABORATORY OF APPLIED, PRACTISE</b>
<b>Language</b>	<b>TURKISH</b>
<b>Pre-conditional course</b>	<b>TEACHING SCIENCE AND TECHNOLOGY</b>
<b>Other suggestions</b>	<b>EXPERIMENTAL APPLICATIONS</b>
<b>Internship status</b>	<b>NONE</b>
<b>The Aim</b>	The main purpose of this course is to achieve basic knowledge and skills related to Primary Science Laboratory . The aim of the course is also to explain that laboratory work makes the science concepts concrete and helps to make pupils problem solvers and critical thinkers. During this course students are required to discuss the pros and cons of science education and lab work. The course provides students the fundamental understanding of practical work and concept of evidence.
<b>Outcomes</b>	<ol style="list-style-type: none"> <li>1. Students will know about science</li> <li>2. Students will have the knowledge about laboratory in science education and they will be able to do research in that area.</li> <li>3. Students will use scientific process skills.</li> <li>4. Students will have the knowledge of the types of experiments and they will be able to design experiments for different age groups.</li> <li>5. Students will be able to know how to assess the experimental skills</li> <li>6. Students will know how to develop scientific process skills for different age groups.</li> </ol>
<b>Course contents</b>	<ul style="list-style-type: none"> <li>• The importance and the purposes of laboratory activities (practical work) in science teaching.</li> <li>•Constructivism and practical work.</li> <li>•Scientific method, scientific process skills and how to teach these skills.</li> <li>•Types of experiments and their specific purposes.</li> <li>•Safety in laboratory.</li> <li>•Experimental error and the ways to minimize it.</li> <li>•How to plan an experiment for pupils and designing worksheets accordingly.</li> <li>•Assessment of practical work.</li> <li>•Designing and carrying out some science experiments.</li> </ul>

Detailed course outline	WEEK	TOPICS	
		Theoretical Courses	Application
	1	Introduction to course: Introduction of course to the students, discussion of students views about course gains.	Discussion, brain storming
	2	Definition of science: The aim of the science education, the aim of the lab studies in science education.	Discussion, brain storming
	3	Introduction to science curriculum, the content of science curriculum, the importance of lab studies in science curriculum.	Presentation, discussion, question-answer
	4	Classification of the experiments regarding their purposes.	Presentation, discussion, question-answer
	5	Defination and classification of the scientific process skills.	Presentation and workshop
	6	Production of the problem.	Presentation and workshop
	7	Midterm Exam	-
	8	Defining variables.	Discussion, brain storming
	9	Doing controlled-experiments.	Discussion, brain storming
	10	Measurement skills in experimental studies.	Lab. study
	11	Measurement skills in experimental studies.	Lab. study
	12	Designing of the experiments with given problems.	Lab. study
	13	Designing of the experiments with given problems.	Lab. study
	14	Designing of the experiments with given problems.	Lab. study
	15	Final Exam	-
	16	Evaluation of the course	Conclusions and recommendations
Course book Reading book	<p>Bagci-Kilic, G. (2006), <i>Ilkogretim bilim ogretimi</i>. Morpa: Istanbul</p> <p>Cepni, S. (ed). (2007), <i>Fen ve teknoloji laboratuar uygulamalari I</i> . Trabzon.</p> <p>Cepni, S. (ed). (2007), <i>Fen ve teknoloji laboratuar uygulamalari II</i> . Trabzon.</p> <p>Ergin, O., Sahin-Pekmez, E. and Ongel-Erdal, S. (2005), 'Deney yoluyla fen ogretimi'. Izmir.</p> <p>Gott, R. and Duggan, S. (1995), 'Investigative work in the science curriculum. Open University Pres: Buckingham.</p> <p>Gott, R. and Duggan, S. (2003), 'Understanding and Using Scientific Evidence: How to Critically Evaluate Data'. Sage: London</p> <p>Wellington, J. (ed.) (1998), 'Practical work in school science'. Routledge: London.</p> <p>Woolnough, B. (1991), 'Practical Science'. Open University Pres: Milton Keynes.</p>		

**REVIEW: 8 PIECES IN THE YEAR STUDENTS IN THE FIELD OF SCIENCE OF WHICH IS SUBJECT EXPERIMENTAL APPLICATION OF WORK, CONCRETE PRESENTATION AND WORKSHOP WITH THE STUDENTS IN THE CLASS. PROJECT PREPARATION AND PRODUCTIVITY WORKING GROUP WILL BE GIVEN THE NOTE.**

<b>Semester activities</b>		
<b>Homework</b>	<b>8</b>	<b>%12.5</b>
<b>Midterm</b>	<b>0</b>	<b>-</b>
<b>Final exam</b>	<b>0</b>	<b>-</b>
<b>Total</b>	<b>8</b>	<b>%100</b>
<b>The contribution of the semester activities to the midterm exam</b>		<b>%40</b>
<b>The contribution of semester exam activities to the grade</b>		<b>%60</b>
	<b>TOTAL</b>	<b>%100</b>

**The Calculation of workload in terms of learning, teaching and evaluation activities.**

<b>Activities</b>	<b>No</b>	<b>Time</b>	<b>Total work</b>
<b>Hours p/week</b>	<b>2</b>	<b>14</b>	<b>28</b>
<b>Homework</b>	<b>8</b>	<b>3</b>	<b>24</b>
<b>Internet and library research</b>	<b>10</b>	<b>2</b>	<b>20</b>
<b>Midterm</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>a) Exam</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>b) Individual study for the exam</b>			
<b>Final exam</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>a) Exam</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>b) Individual study for exam</b>			
<b>Individual Reading (Reading books and articles)</b>	<b>6</b>	<b>3</b>	<b>18</b>
<b>TOTAL WORKLOAD (HOUR)</b>			<b>90 HOURS</b>

**The course the AKTS credit of = Total workload/(30hours AKTS)**

**90/30 = 3 ECTS**

**Program and Learning Outcomes**

Learning Outcomes	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
LO 1	4	4	3	3	5	5	4	3	2	2	3	4
LO 2	5	5	3	4	4	2	2	3	3	3	5	5
LO 3	4	3	3	3	4	2	2	5	5	4	4	3
LO 4	4	4	4	3	3	4	4	5	5	5	4	4
LO 5	5	5	3	2	4	4	3	3	3	4	2	3
LO 6	4	4	5	5	4	4	3	4	2	3	4	4
LO 7	0	0	0	0	0	0	0	0	0	0	0	0
LO 8	0	0	0	0	0	0	0	0	0	0	0	0
LO 9	0	0	0	0	0	0	0	0	0	0	0	0
LO 10	0	0	0	0	0	0	0	0	0	0	0	0
LO 11	0	0	0	0	0	0	0	0	0	0	0	0
LO 12	0	0	0	0	0	0	0	0	0	0	0	0

**\*Level of Contribution:            1 Very low   2.Low   3.Middle   4. High   5.Very High**