

AGEP IMPLEMENTATION PLAN FOR DC CIRCUIT ANALYSIS COURSE

(1st Semester - 1st Course)

The DC Circuit Analysis course is directly related to the following program outcomes of the Electronics Technology Associate Degree Program at Boğazlıyan Vocational School:

PO1: Models electronic systems and performs problem-solving processes by using fundamental and current theoretical knowledge related to electronics and automation.

PO2: Uses electronic measurement and test devices in accordance with occupational health and safety rules and analyzes the obtained results.

PO3: Designs and implements analog and digital electronic circuits by taking into account the characteristics of electronic circuit components.

PO7: Detects and resolves faults and malfunctions occurring in electronic systems using analytical methods.

Accordingly, the course aims to enable students to learn the fundamental concepts of direct current circuit theory, understand Kirchhoff's laws and circuit analysis methods through practice, use measurement instruments correctly, and analyze the results obtained.

Within the scope of AGEP activities for this course, students are expected to conduct a study on DC circuit analysis that includes reviewing sources on fundamental circuit laws, constructing and analyzing a circuit in a real or simulation environment, interpreting the obtained data, and preparing a short report and presentation. Accordingly, a total student workload of 12 hours has been determined within the scope of AGEP.

AGEP Activity	Duration (Hours)
Literature and source review (fundamental circuit laws)	3
Circuit analysis application (simulation or real circuit)	4
Report writing	3
Presentation preparation	2
Total	12

The implementation schedule for this course within the scope of AGEP has been set as 7 weeks, and the activities to be carried out during the relevant weeks are planned below.

Week Range	Activity
Weeks 1-2	Topic selection and identification of sources
Weeks 3-4	Circuit analysis application
Weeks 5-6	Data interpretation and report preparation
Week 7	Presentation and evaluation

Studies conducted within the scope of AGEP may be planned individually or in groups. Students will perform an analysis of a DC circuit of their choice and examine the behavior of circuit components both theoretically and practically. The study outputs will be integrated into the classroom environment and reinforced through discussion and presentation activities.

Evaluation criteria: Alignment with course learning outcomes, mastery of fundamental circuit concepts, analysis and problem-solving skills, methodology and academic approach, originality, quality of reporting and presentation, and timely submission.

Through the aforementioned AGEP practices and evaluations, students are expected to acquire the following competencies:

Students are expected to reinforce the fundamental concepts and laws of DC circuits, gain circuit analysis skills, develop measurement and evaluation competence, and improve their technical reporting and presentation skills.

AGEP IMPLEMENTATION PLAN FOR DIGITAL ELECTRONICS COURSE

(1st Semester - 2nd Course)

The Digital Electronics course is directly related to the following program outcomes of the Electronics Technology Associate Degree Program at Boğazlıyan Vocational School:

PO1: Models electronic systems and performs problem-solving processes by using fundamental and current theoretical knowledge related to electronics and automation.

PO3: Designs and implements analog and digital electronic circuits by taking into account the characteristics of electronic circuit components.

PO5: Effectively uses professional information technologies (software, simulation, programming, etc.) for design and implementation.

Accordingly, the course aims to enable students to learn the fundamental concepts of digital systems (number systems, logic gates, Boolean algebra), analyze and design combinational and sequential logic circuits, and construct digital circuits using simulation tools.

Within the scope of AGEP activities for this course, students are expected to conduct a study on the fundamental topics of digital electronics that includes reviewing sources on logic gates and Boolean algebra, designing and simulating a selected combinational or sequential circuit, reporting the obtained results, and preparing a presentation. For this purpose, a total workload of 12 hours has been determined within the scope of AGEP.

AGEP Activity	Duration (Hours)
Literature and source review (logic gates, Boolean algebra)	3
Circuit design and simulation application	4
Report writing	3
Presentation preparation	2
Total	12

The implementation schedule for this course within the scope of AGEP has been set as 7 weeks, and the activities to be carried out during the relevant weeks are planned below.

Week Range	Activity
Weeks 1-2	Topic selection and identification of sources
Weeks 3-4	Circuit design and simulation application
Weeks 5-6	Analysis, report writing, and editing
Week 7	Presentation and evaluation

The studies will be carried out individually, and each student will implement a digital circuit design using simulation software (e.g., Logisim, Multisim). The outputs will be reinforced through mutual discussion and presentation activities in the classroom.

Evaluation criteria: Alignment with course learning outcomes, mastery of digital circuit concepts, design and simulation skills, academic method and approach, originality, quality of reporting, presentation performance, and timely submission.

Through the aforementioned AGEP practices and evaluations, students are expected to acquire the following competencies:

Students are expected to reinforce the fundamental concepts of digital electronics, gain circuit design and simulation skills, use professional software tools effectively, and develop technical reporting and presentation competencies.

AGEP IMPLEMENTATION PLAN FOR AC CIRCUIT ANALYSIS COURSE

(2nd Semester - 1st Course)

The AC Circuit Analysis course is directly related to the following program outcomes of the Electronics Technology Associate Degree Program at Boğazlıyan Vocational School:

PO1: Models electronic systems and performs problem-solving processes by using fundamental and current theoretical knowledge related to electronics and automation.

PO2: Uses electronic measurement and test devices in accordance with occupational health and safety rules and analyzes the obtained results.

PO3: Designs and implements analog and digital electronic circuits by taking into account the characteristics of electronic circuit components.

PO7: Detects and resolves faults and malfunctions occurring in electronic systems using analytical methods.

Accordingly, the course aims to enable students to understand the fundamental concepts of alternating current circuits (impedance, reactance, resonance, and power analysis), analyze RLC circuits, and interpret waveforms using oscilloscopes and similar measurement instruments.

Within the scope of AGEP activities for this course, students are expected to conduct a study on AC circuit analysis that includes reviewing sources on RLC circuits and impedance concepts, constructing circuits and taking measurements in a real or simulation environment, analyzing and interpreting the obtained data, and preparing a report and presentation. For this purpose, a total workload of 12 hours has been determined within the scope of AGEP.

AGEP Activity	Duration (Hours)
Literature and source review (RLC circuits, impedance)	3
Circuit construction, measurement, and simulation application	4
Report writing and data analysis	3
Presentation preparation	2
Total	12

The implementation schedule for this course within the scope of AGEP has been set as 7 weeks, and the activities to be carried out during the relevant weeks are planned below.

Week Range	Activity
Weeks 1-2	Topic selection and identification of sources
Weeks 3-4	Circuit application and measurement
Weeks 5-6	Analysis, data interpretation, and report preparation
Week 7	Presentation and evaluation

The studies may be carried out individually or in groups. Each student or group will perform both theoretical analysis and measurement applications on a selected RLC circuit. Study outputs will be shared in the classroom through presentation and discussion activities.

Evaluation criteria: Alignment with course learning outcomes, mastery of AC circuit concepts, measurement and analysis skills, methodology and academic approach, originality, quality of reporting, presentation performance, and timely submission.

Through the aforementioned AGEP practices and evaluations, students are expected to acquire the following competencies:

Students are expected to gain an in-depth understanding of AC circuit concepts, develop analysis and measurement skills, improve their ability to interpret obtained data, and strengthen their

technical report writing and presentation skills.

AGEP IMPLEMENTATION PLAN FOR DIGITAL DESIGN COURSE

(2nd Semester - 2nd Course)

The Digital Design course is directly related to the following program outcomes of the Electronics Technology Associate Degree Program at Boğazlıyan Vocational School:

PO3: Designs and implements analog and digital electronic circuits by taking into account the characteristics of electronic circuit components.

PO5: Effectively uses professional information technologies (software, simulation, programming, etc.) for design and implementation.

PO8: Develops an electronics-based product or system in accordance with specified requirements and reports the results technically.

Accordingly, the course aims to enable students to understand combinational and sequential logic circuit design methods, gain the ability to analyze and implement components such as counters, registers, and state machines, and use digital design tools (HDL or simulation software).

Within the scope of AGEP activities for this course, students are expected to conduct a study on digital design topics that includes reviewing sources on sequential logic circuits and state machines, developing and simulating a circuit to solve a selected design problem, converting the obtained outputs into a technical report, and preparing a presentation. For this purpose, a total workload of 12 hours has been determined within the scope of AGEP.

AGEP Activity	Duration (Hours)
Literature review (sequential circuits, state machines)	3
Design application and simulation	5
Report writing	2
Presentation preparation	2
Total	12

The implementation schedule for this course within the scope of AGEP has been set as 7 weeks, and the activities to be carried out during the relevant weeks are planned below.

Week Range	Activity
Weeks 1-2	Selection of design problem and source research
Weeks 3-4	Circuit design and simulation application
Weeks 5-6	Analysis of results and report writing
Week 7	Presentation and evaluation

The studies will be carried out individually, and each student will identify a digital design problem for a real-life application and develop a solution. The design, verified using simulation software, will be shared and discussed in the classroom.

Evaluation criteria: Alignment with course learning outcomes, mastery of digital design concepts, design and simulation skills, system development approach, originality and problem-solving, quality of technical reporting, presentation performance, and timely submission.

Through the aforementioned AGEP practices and evaluations, students are expected to acquire the following competencies:

Students are expected to understand digital design methods, gain competence in analyzing and synthesizing complex logic circuits, use digital design tools effectively, and develop technical report preparation and presentation skills.