

Course Outline

TELEVISION SERVICE & REPAIR

Course Title

GE 215

Dep't. & Course No.

I. COURSE DESCRIPTION

This course is designed to train students in servicing and repairing television receivers. It also includes the practical applications and utilization of various test equipment necessary in circuit analysis and troubleshooting.

II. SEMESTER CREDITS: 3 Credits

III. CONTACT HOURS PER WEEK: 2 3 5 (Lecture) (Lab.) (Total)

IV. PREREQUISITE: GE116 & GE 124

V. STUDENT LEARNING OUTCOMES: VI. COURSE CONTENT

At the end of the semester, the student with a combined accuracy of 65% should be able to:

1. Discuss the fundamentals of TV transmission signals.
2. Explain the TV signals bandwidth.
3. List the different section of CRT TV and explain briefly it's function.
4. Identify the different types and symptoms of trouble in CRT TV.
5. Discuss the technique in troubleshooting and repairing the CRT TV.
6. List the different section of LCD TV and explain briefly it's function.
7. Identify the different types and symptoms of trouble in LCD TV.
8. Discuss the technique in troubleshooting and repairing the LCD TV.

A. Fundamentals

1. Electronic System
2. Energy, Signals and Frequency
3. Radio Frequency Signals

B. CRT TV Block Diagram and Operation

1. Introduction to CRT TV
2. Cathode Ray Tube
3. Powers Supply LV and HV
4. Tuning section
5. Video Section
6. Sweep Section
7. Audio Section
7. Troubleshooting techniques

C. LCD TV Block Diagram and Operation

1. Introduction to LCD TV
2. Powers Supply Section
3. Power Inverter Section
4. Main Board
5. T-Controller
6. Troubleshooting techniques

9. List the different section of LED TV and explain briefly it's function.
10. Identify the different types and symptoms of trouble in LED TV.
11. Discuss the technique in troubleshooting and repairing the LRD TV.
12. List the different section of Plasma TV and explain briefly it's function.
13. Identify the different types and symptoms of trouble in Plasma TV.
14. Discuss the technique in troubleshooting and repairing the Plasma TV.

C. LED TV Block Diagram and Operation

1. Introduction to LED TV
2. Powers Supply Section
3. Main Board
4. T-Controller
5. Troubleshooting techniques

D. Plasma TV Block Diagram and Operation

1. Introduction to Plasma TV
2. Powers Supply Section
3. X Board
4. Main Board
5. T-controller
6. Troubleshooting techniques

VII. EQUIPMENT AND MATERIALS

- A. Color Pattern Generator
- B. VOM/DMM
- C. Portable Air Compressor
- D. Cathode Ray Oscilloscope
- E. Color Television Receivers(CRT, LCD, LED, PLASMA)
- F. Tool Kits

VIII. TEXT AND REFERENCES

- A. Text: Liew, Kent . **PLASMA TV Repair Tips PV1 and LED?LCD Television Repair Tips V4**

IX. METHODS OF INSTRUCTION

The following methods of instruction will be used.

1. Lecture for the presentation of theory.
2. Demonstration for the presentation of skills.
3. Discussion and questioning for test of understanding.
4. Laboratory experiments for emphasis of known principles.
5. Project Construction.

X. METHOD OF EVALUATION

A. Lecture presentation will be tested using the written test method. Laboratory evaluation will be rated based on the following four criteria:

- A. Accuracy
- B. Appearance
- C. Completion
- D. Techniques

B. The components with corresponding weight in percent included in the computation of Midterm and Final grade are:

Participation	10%
Portfolio	10%
Quizzes/Homework	10%
Midterm/Final Examination	20%
Laboratory Performance/Project....	<u>50%</u>
TOTAL = 100%	

The transmutation of total percent to letter grade is as follows:

90% - 100%	A
80% - 89%	B
70% - 79%	C
65% - 69%	D
0 - 64%	F

TASK LISTING SHEET

TELEVISION SERVICE & REPAIR

Course Title

GE 215

Dep't. & Course No.

Credits: 2 1 48
Lec Lab Total Lab Hrs

Laboratory Objectives	Time Allotment
1. Read and Interpret television diagram and operating/service manual a. Read the operating manual and setup the channel, sound, color, and picture b. Read the service manual and identify the different stages of a Television Receiver	8
2. Troubleshoot and Repair CRT TV a. Identify the different parts of the CRT TV b. Test the CRT tube c. Test the low voltage section d. Test the high voltage section e. Adjust the color driver f. Test the sweep section g. Perform troubleshooting	10
3. Troubleshoot and Repair LCD TV a. Identify the different parts of the LCD TV b. Test the inverter board c. Test the power supply board d. Test the main board e. Test the T-controller board f. Perform troubleshooting	10
4. Troubleshoot and Repair LED TV a. Identify the different parts of the LED TV b. Test the power supply board c. Test the main board d. Test the T-controller board e. Perform troubleshooting	10
5. Troubleshoot and Repair Plasma TV a. Identify the different parts of the Plasma TV b. Test the power supply board c. Test the X board board d. Test the main board e. Test the T-controller board f. Perform troubleshooting	10

Palau Community College
 GE 215 – TELEVISION SERVICE AND REPAIR
 Course Learning Outcomes

During the course experience, the course learning outcomes (CLO) will be assessed through the use of signature assignments. A rating scale will be used to determine the students' proficiency level of each CLO using specifically aligned assignments. The numerical rating of 4,3,2 and 1 are not intended to represent the traditional school grading system of A, B, C, D and F. The descriptions associated with each of the numbers focus on the level of student performance for each of the course learning outcome listed below.

- Rating Scale:
- 5 Excellent
 - 4 Above-Average
 - 3 Average
 - 2 Below Average
 - 1. Unacceptable

CLO 1: Read and interpret television diagram and operating/service manual.

5	Identify the block and schematic diagram of television receiver, determine the parameters of the input and output signals, identify the components on each section of the block diagram, and locate each component in television circuit board with 90% - 100% accuracy.
4	Identify the block and schematic diagram of television receiver, determine the parameters of the input and output signals, identify the components on each section of the block diagram, and locate each component in television circuit board with 80% -89% accuracy.
3	Identify the block and schematic diagram of television receiver, determine the parameters of the input and output signals, identify the components on each section of the block diagram, and locate each component in television circuit board with 70% -79% accuracy.
2	Identify the block and schematic diagram of television receiver, determine the parameters of the input and output signals, identify the components on each section of the block diagram, and locate each component in television circuit board with 65% - 69% accuracy.
1	Identify the block and schematic diagram of television receiver, determine the parameters of the input and output signals, identify the components on each section of the block diagram, and locate each component in television circuit board with below 65% accuracy.

CLO 2: Troubleshoot and repair CRT television.

5	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 90% - 100% accuracy.
4	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 80% - 89% accuracy.
3	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 70% - 79% accuracy.
2	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 65% - 69% accuracy.

1	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with below 65% accuracy.
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CLO 3: Troubleshoot and repair LCD television.

5	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 90% - 100% accuracy.
4	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 80% - 89% accuracy.
3	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 70% - 79% accuracy.
2	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 65% - 69% accuracy.
1	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with below 65% accuracy.

CLO 4: Troubleshoot and repair LED television.

5	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 90% - 100% accuracy.
4	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 80% - 89% accuracy.
3	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 70% - 79% accuracy.
2	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 65% - 69% accuracy.
1	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with below 65% accuracy.

CLO 5: Troubleshoot and repair PLASMA television.

5	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 90% - 100% accuracy.
4	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 80% - 89% accuracy.
3	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 70% - 79% accuracy.
2	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with 65% - 69% accuracy.
1	Identify the source of troubles, locate the cause of troubles, repair the specific cause of trouble, and test the operation with below 65% accuracy.