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| <b>SEMESTER</b><br><i>Sixth</i>   | <b>DEPARTMENT</b><br><i>Telecommunications Engineering</i> | <b>COURSE TITLE</b><br><i>TV Systems Lab.</i>            |
| <b>COURSE CODE</b><br><i>ET606</i>  | <b>HOURS: 3</b><br><b>UNITS: 1</b>                         | <b>COURSE SPECIFICATIONS</b><br><i>Practical Content</i> |
| <p><b>1. Appreciate vision characteristics, and the basic operation of a TV camera and TV transmission:</b></p> <ul style="list-style-type: none"> <li>➤ Inspect various types of TV tube.</li> <li>➤ Observe flicker in a TV</li> </ul>  |  |  |
| <p><b>2. Describe the principles of operation of Black and White TV receivers:</b></p> <ul style="list-style-type: none"> <li>➤ Explain how to demonstrate the principles of:                             <ul style="list-style-type: none"> <li>• RF section.</li> <li>• IF section.</li> <li>• Video section.</li> <li>• Automatic gain control circuits.</li> <li>• Sync section.</li> <li>• Raster circuits.</li> <li>• High voltage section.</li> <li>• Power supplies.</li> </ul> </li> </ul>   |  |  |
| <p><b>3. Diagnose and clear faults of the common types found in each stage of a black and white TV set:</b></p> <ul style="list-style-type: none"> <li>➤ Demonstrate, operate and how to use the equipments needed in maintenance (pattern generator, IF sweep generator, dual trace oscilloscope, signal generator, high voltage probes, and attenuators (different values)).</li> <li>➤ Introduce techniques for trouble shooting in a television set.</li> <li>➤ List the common faults in the various stages of a TV receiver starting with:                             <ul style="list-style-type: none"> <li>• Tuner stage and IF amplifier stages, e.g. raster without picture and sound, weak picture and sound, picture and sound come on different channels.</li> <li>• Video amp stage and CRT circuit such as: poor picture quality, no picture but with normal sound, low brightness and contrast.</li> </ul> </li> </ul> |  |  |

- Sync stage such as: picture pulling.
- AGC circuit such as: No picture and no sound, and poor picture.
- Power supply.

**4. Understand the principles of color mixing and the basic concepts of a color TV set:**

- Use a color TV set to identify various parts of the color section.

**5. Introduce the basic three color systems used in the world:**

- Explain how to test various types of TV receiver systems.

**6. Appreciate picture tube construction/function, and install/adjust CRTs:**

- Explain how to remove, install and adjust the cathode Ray Tube (CRT).

**7. To install and study satellite TV Receiver system including Dish Antenna and Receiver.**

**References:**

- 1- R. R. Gulati, *Monochrome Television Practice, Principles, Technology and servicing*, Second edition, New age International Publishes, 2004.
- 2- R. R. Gulati, “*Monochrome and colour television*“, New age International Publisher, 2003
- 3- A.M Dhake, *Television and Video Engineering*, Second edition, TMH, 2003.
- 4- Bernard Grob, *Basic Television and Video Systems*, Fifth edition, McGraw-Hill, Inc, 1984.
- 5- Bernard Grob, *Basic Television Principles and Servicing*, Fourth edition, McGraw-Hill, Inc, 1975.
- 6- التلفزيون من الهوائي إلى الشاشة، دكتور مهندس/ رشدي الحديدي
- 7- أساسيات التلفزيون الملون، مهندس / محمد طومسون