ELECTIVE MODULE FOR NORMAL (TECHNICAL) STUDENTS

Module Title: Laser Show

Duration: 30 hours (6T, 24P)

Pre-requisite: Nil

Aims of Module

1 To expose students to special effects in a high technology entertainment world by introducing the basic knowledge and skills of using the laser projection system.
2 To promote a creative spirit amongst the students.

Learning Outcomes

At the end of the module, students will be able to:

1 Describe the basic principles and applications of laser systems
2 State the potential hazards and safety requirements.
3 Create logos, graphics, animations and a simple show production
4 Commission the laser projection system for a given event/show

Module Outline

Students will be trained to produce a simple laser show by using the laser projection system. They will be trained to create laser graphics/animations and synchronize to the music, using the software.

Outline of Module Syllabus

Item	General Instructional Objective Students should be able to:	Instructional Hours Th	Pr
1	**Fundamentals of laser operation** ➢ Explain the principles of laser operation. ➢ Differentiate between RGB laser and monochrome laser ➢ Identify the components of the Laser projector	1	-
2	**Laser Safety** ➢ State the classifications of lasers. ➢ Identify the potential hazards. ➢ State the basic safety precautions of lasers.	1	
3	**Laser Show Basics** ➢ Differentiate between graphics and beam effects ➢ Differentiate between Live Show and Pre-Programmed Show ➢ State the types of add-on effects (eg. smoke machines, other lighting effects).	1	

4	**Frame Creation** ➢ Describe the techniques for frame creation. • Apply the "Optimization of points" technique • Create still frames • Create animations • Use the colourizing command • Create logos	1	6
5	**Show Creation** ➢ Create a storyboard ➢ Create a show timeline. ➢ Differentiate between scenes, modules and shows. ➢ Demonstrate the techniques of synchronization to music	2	10
6	**Laser Show Project** ➢ Establish the requirements for event/show. ➢ Determine the storyboard. ➢ Create the logos/graphics/animations on the timeline. ➢ Apply the techniques of synchronization to music ➢ Commission the laser projector to run the show production.	-	8
	Total	6	24

Teaching and Learning Approaches

This elective is a practical oriented module. Students will learn how to design and create a simple show production using the laser projection system.
During the project, the teacher will facilitate the group discussion and project definition stage. Thereafter, the students will work independently in their respective groups to complete the show production. The teacher will assist them to complete the commission of the show production.

Completion Criterion

Students will be deemed to have successfully completed the module if they pass all the assessments. The guidelines for the assessments are given below

S/N	Assessment Component	Assessment Guidelines	Weighting
1	Theory Test	20 multiple choice questions to test the understanding of the students on the topics.	20%
2	Practical Assignment 1	Students should be able to create laser logos, graphics and animations	20%
3	Practical Assignment 2	Students should be able to program the laser system for a simple show production	20%
4	Project	Students should be able to commission the laser projection system for a given event/ show.	40%
		Total	100%

Target Audience

Sec 3 / 4 Normal (Technical) students

Target Size

20 students per class

Duration

30 instructional hours

Certification

ITE Certification of Attendance will be issued upon successful completion of the course. ITE Certificate of Achievement will be issued upon students meeting the assessment criteria.