Mechanisms (10-assignment)

This is an integrated instructional module designed specifically to operate within a Modular Program environment. It is ideal for use with our Scantek Technology program. The module includes a 10-assignment exploratory curriculum that is split into two parts. Each part includes a pre-test and post test. The module includes hardware, software and curriculum materials sufficient to provide a complete learning experience.

The curriculum incorporates continuous assessment through questions. When used in conjunction with a ClassAct networked management system, this provides instant feedback of student performance. The assessments begin with a comprehensive pre-test. This quiz includes questions for each subsequent assignment, together with questions that will specifically test math and reading ability.

Every assignment starts with a series of questions designed to track inventory. These ensure that any missing items are located before they are needed.

Each assignment is divided into a series of tasks. Hands-on tasks form the core of the student work. Where appropriate, these are accompanied by research tasks based upon illustrated textbooks and software applications. Assessment questions are incorporated into each task.

Typical 10-assignment topic areas include:

- Direction of rotation and speed change using spur gears
- Simple gear trains
- Pulley and belt systems
- Power transmission systems
- Energy inputs and outputs
- Mechanical advantage of pulley systems
- Cranks and slider mechanisms
- Cams
- Pneumatic, hydraulic and electrical power systems
- First order levers
- Inclined planes
- Gear boxes

Typical 10-assignment activities include:

- Learn about safety when using the mechanisms training system.
- Find out what spur gears are.
- Use spur gears to see how they can reduce or increase speed.
- Learn about gear ratios, which can be used to calculate how much gears will change speed.
- Evaluate pulley belt systems and discover a method of solving problems they can cause.
- Examine the use of cams, and discover how they can be used to change rotary motion to straight-line motion.
- Examine the effect of fixed pulleys on the size and direction of forces.
- Set up a moveable pulley system.
- Use a spring balance to measure the effect moveable pulleys have on forces.
- Calculate mechanical advantage.
- Perform experiments with second and third order levers.
- Examine the uses of inclined planes.
- Compare friction forces involved when dragging and rolling weights up a slope.

Typical 10-assignment activities include (continued):

- Design a winch power transmission system. Use the mechanisms training system to build and test a simulation of the winch design.

Each assignment is designed around a list of performance objectives. These lists include academic, technical and occupational objectives. The assignments are written in such a way as to enable a student to attain the performance objectives, with the assessment questions linked to these in order to provide a measure of true competency.

The performance objectives are used by the ClassAct management system to generate a comprehensive portfolio of student competency reports. Default reports supplied with this module include:

- Entry report
- Technical/Occupational Exit report
- Basic Skills report based upon the federal SCAN's report.

The items supplied with this instructional module include:

- 10-assignment On-Screen Student Assignment Guide CD
- 10-assignment Student Assignment Guide
- 10-assignment Student Workbook
- 10-assignment Instructor Guide
- Book: 'Mechanisms'
- Mechanisms Trainer
- Accessory kit

Additional items required:

- Computer

Module Facts

For Technology Program, order as:
ST260/10 Mechanisms

	No.	Average time
Assignments	10	45 minutes
Extension Activities	2	45 minutes
	Total	9 hours

LJ Technical Systems
Web site: www.ljgroup.com

Ref No. P5082-E