

PRACTICAL ASTRONOMY—

Methods of determining Latitude, Local Time, Direction of the Meridian, and Difference of Longitude.

Theory of the Theodolite, Transit-Theodolite, Level, Sextant, and Solar Compass.

Text Books—Gillespie's Higher Surveying (b), (c).

Chauvenet's Spherical and Practical Astronomy (c).

Nautical Almanac for 1889 (c).

Chamber's Practical Mathematics (c).

Fee for Special Students, \$15.

(IV.) APPLIED MECHANICS.

STATICS—

The Calculation of the Stresses in Framed Structures, Solid and Rivetted Beams, Stone Arches, etc. Both Graphical and Analytical Methods used.

THEORY OF THE STRENGTH OF MATERIALS—

DESIGNING OF STRUCTURES in Timber, Iron and Masonry—Arches, Retaining Walls, Foundations, Roofs, Bridges, etc.

DYNAMICS—

Representation and Measurement of Forces and Motions.

Principles of *Work* and *Energy*.

Efficiency of Machines. Friction.

Transmission of Energy—Belts, Shafts, Crank and Connecting Rod, etc.

Fly-Wheels, Governors.

Balancing of Machinery.

Etc., etc.

STRENGTH OF THE PARTS OF MACHINES.

MACHINE DESIGN.

HYDRAULICS—

Discharge of Water through Orifices, Notches, etc. Flow in Pipes, and Open Channels. Water Power. Water Wheels, Turbines, Pumps, etc.