

SPECIFICATIONS AND ESTIMATES : Reports and net earnings. Practical problems. Coloring and etching.

TOPOGRAPHICAL DRAWING : Levelling. Architecture. Cuppling or joining of wood, stone, &c. Perspective.

2. *Mines and Metallurgy.*

GEODESY. Civil Engineering Course. Geological and mineralogical excursions.

STUDY AND LAYING OUT OF PUBLIC ROADS, &c. Evaluations. Calculations on excavations.

MINE MACHINERIES. Crane. Exhaustion-pumps.

Ventilators. Machines for forges. Blasting-Machines.

CHEMISTRY of minerals and ores ; of fuel and light.

CHEMICAL reaction at high temperature. Laboratory work. Fusion, &c. &c.

Workmanship. The sinking of wells and galleries. Ventilation. Preparation of the ores. *Exploitation*. Drainage. Metallurgy. Blast-furnaces. Fuel. Casting and moulding. Puddling, &c. History of the different ways of working mines. Mines in actual operation. Great manufactures of America, England and France.

SPECIFICATIONS AND ESTIMATES. Practical problems on the net returns.

FACTORY WORK. Metals. Forges. Visits to foundries.

3. *Mechanics and the Working of Metals.*

CHEMISTRY of metals and alloys ; building materials, fuel, light, &c.

METALLURGY. Casting. Moulding. Electro plating. Gilding and silvering.

STUDY AND SKETCHING of machines and component parts. Study of special machines. Calculation of their different pieces. Construction and setting steam-engines, mills ; machines driven by water, wind, and electricity. Locomotives. Repairs and inspection of engines, boilers, &c.

HISTORICAL view of machines, particularly of steam-machines. Master-pieces of machinery. Recent ameliorations and discoveries.

PROBLEMS on the durability and resistance of machines and boilers. Practical problems on the results obtained. Friction. Loss of heat.

FACTORY WORK. The working of metals. Construction of machines. Laboratory work.

MECHANICAL DRAWING.

4. *(Diverse industries. Productions.)*

QUANTITATIVE AND QUALITATIVE ANALYSIS. Chemistry of fuel. Light. Building materials. Potash. Soda. Soap. Gas. Gelatine. Dye-stuffs