First Year's Course.—Syllabus of Fortnightly Demonstrations.

1. Matter and its indestructibility; elements and compounds; three general properties of matter—viz., extension, divisibility, and weight.
2. The three states of matter: the solids, the liquid, and the gaseous; some of the characteristics of each; fluids.
3. Solid bodies; the force of cohesion; adhesion; powders. Structure of solids; molecules and atoms; crystals and crystalline bodies; amorphous solids; hardness of solids; alloys.
4. Effects of heat on solids; practical applications; welding.
5. Properties of liquids; viscous substances; surface of liquids; the spirit-level.
6. Capillary phenomena; pressure of liquids; the diving-bell.
7. Specific gravity of liquids and solids.
8. Buoyancy of liquids; floating bodies.
9. Effects of heat on liquids; the thermometer; conversion of liquids into solids and gases.
10. Properties of gases; use of the air-pump; pressure of the air; the sucker.
11. The barometer: its use in measuring heights and as an indicator of change of weather.
12. The siphon.
13. Valves and pumps.
14. Effects of heat on gases; winds.
15. Porosity, compressibility, and elasticity of matter.
16. Tenacity, ductility, and malleability of solids.
17. Measurement of length, space, and velocity.
18. Measurement of time; divisions of the day and year; sundial, clock, &c.

Recapitulatory lessons are given in each stage as time permits.

Second Stage.—"Matter in motion. The weight of a body: its inertia and momentum. Measures of force and work."

Syllabus of Fortnightly Demonstrations.

1. Force and matter.
2. The forces of nature; differences between the physical forces and the chemical force.
3. The force of gravitation, and the laws by which it acts.
4. Effects of the force of gravity.
5. Centre of gravity.
6. Falling bodies: their rates of motion.
7. Falling bodies—continued.
8. The first law of motion; inertia of matter at rest.
9. Inertia of matter in motion; friction.
10. Mass and momentum.
11. Representation of forces; composition of forces.
12. The second law of motion.
13. The third law of motion.
14. Work, and how to measure it.

Third Stage.—"The simple mechanical powers, viz.: (1) The lever; (2) the wheel and axle; (3) pulleys; (4) the inclined plane; (5) the wedge; (6) the screw. Liquid pressure; the hydrostatic press. Liquids under the action of gravity. The parallelogram of velocities. The parallelogram of forces. Examples commonly met with, illustrating the mechanical powers."

Syllabus of Third Year's Course of Fortnightly Demonstrations.

1. Specification of a force; nature and action of machines; principle of work.
2. The mechanical powers; conditions of equilibrium; the mechanical advantage; friction.
3. The lever; parts of a lever; three orders of levers.
4. Practical applications of a lever; double levers.
5. Weighing-machines; the balance; the steel-yard.
6. The wheel and axle; practical applications of this machine.
7. The toothed wheel; clocks and watches.
8. The pulley; fixed and movable pulleys; the three systems of pulleys.
9. The inclined plane; its principle and applications.
10. The wedge.
11. The screw.
12. Compound machines.
13. Pressure of liquids; surface of liquids; liquids under the action of gravity.
14. The hydrostatic press.
15. The parallelogram of forces.
16. The parallelogram of velocities.

SYLLABUS FOR CHEMISTRY, AS DEFINED IN THE FOURTH SCHEDULE (SPECIFIC SUBJECT, No. 10) OF THE NEW CODE.

First Stage.—"Elementary and compound matter. Illustrations of combination and decomposition in such bodies as hydrochloric acid, water, oxide of mercury, and rust of iron."

First Year's Course.—Syllabus of Fortnightly Demonstrations.

1. Division of matter into elements and compounds; the names and symbols of the most important elements; division of the elements into solids, liquids, and gases; and into metals and non-metals.