

MCGILL UNIVERSITY.

THE accompanying engravings will serve to illustrate the new W. C. McDonald Engineering Building and the Physical Building in connection with McGill University, Montreal. Some particulars are appended concerning the institution, the course of studies prescribed for students of electrical and mechanical engineering, and the facilities afforded the youth of Canada for acquiring a technical education.

The Faculty of Applied Science is composed as follows: Sir William Dawson, C.M.G., L.L.D., F.R.S., Principal; Henry I. Bovey, M.A., M. Inst. C.E., F.R.S.C., Dean of the Faculty; Professors: B. J. Harrington, B.A., Ph.D., F.R.S.C., Green-shields Professor of Chemistry and Mineralogy; Henry T. Bovey, M.A., M. Inst. C.E., William Scott Professor of Civil Engineering and Applied Mechanics; C. H. McLeod, M.A., Professor of Surveying and Geodesy, and Superintendent of the Observatory; G. H. Chandler, M.A., Professor of Practical Mathematics; Charles A. Carus-Wilson, M.A., A.M. Inst. C.E., A. Inst. E.E., W. C. McDonald Professor of Electrical Engineering; Associate Professors: Sir William Dawson, L.L.D., F.R.S., Logan Professor of Geology, and Professor of Natural History; Pierre J. Dorey, M.A., B.C.L., L.L.D., Officier d'Académie, Professor of French Language and Literature; Charles E. Moyse, B.A., Molson Professor of English Language

and Literature; D. P. Penhallow, B.Sc., F.S.S.C., Professor of Botany; John Cox, M.A., W. C. McDonald Professor of Experimental Physics.—Associate Lecturers: Paul T. Lafleur, M.A., Lecturer in English; P. Toews, M.A., Lecturer in German Language and Literature; Frank D. Adams, M.A.Sc., Lecturer in Geology.—Assistants: Andrew T. Taylor, F.R.I.B.A., Instructor in Freehand and Model Drawing; Percy Norton Evans, B.A.Sc., Assistant in Practical Chemistry.

The Professorship of Mechanical Engineering and the Lectureship in Mining are to be filled before the beginning of next session.

The instruction in this Faculty is designed to afford a complete preliminary training, of a practical as well as theoretical nature, to such students as are preparing to enter any of the various branches of the professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

Five distinct Departments of study are established, viz:—Civil Engineering and Surveying; Electrical Engineering; Mechanical Engineering; Mining Engineering; Practical Chemistry. Each of these extends over four years, and is specially adapted to the prospective pursuits of the student.

The course in Electrical Engineering is based on a thorough training in mathematics and experimental physics gained during the first three years. In the fourth year the student will enter

the Electrical Engineering Laboratory, where the practical application of physical laws and methods is illustrated in the working of the apparatus with which the Laboratory is equipped. The lectures and class work in the Department of Mechanical Engineering are devoted to a study of the principles of Kinematics and Dynamics of Machinery, and of Thermodynamics. Work is done in the Mechanical and Thermodynamic Laboratories, where the practical application of the theories discussed in the lecture room is illustrated. The student will also go through a course of Mechanical Drawing and of work-shop practice.

In the Laboratories the student will be instructed in the art of conducting experiments. The principal experiments carried out in these will relate to the elasticity and strength of materials, friction, the theory of structure, the accuracy of springs, gauges, dynamometer, etc., the efficiency of shafting, gearing, etc. The equipment will include a 100 ton Wicket and a 75 ton Emery machine for testing the tensile, compressive and transverse strength of materials. The Laboratories are also provided with an autographic torsion machine for testing the torsional strength of materials, machines for determining the effect of repeated stresses, oil testers, steam extensometers, etc., and a very complete supply of gauges, micrometers, and other apparatus for exact measurements.



MCDONALD TECHNICAL BUILDING, MCGILL UNIVERSITY, MONTREAL.

The Laboratory of Mechanics is fully equipped with a variety of apparatus, such as chronographs for measuring small intervals of time, pendulums for determining the acceleration of gravity and other dynamical constants, machines for deducing the laws of falling bodies, etc.

The Thermodynamic Laboratory is furnished with an experimental steam engine of 80 I.H.P., specially designed for the investigation of the behaviour of steam under all possible conditions; there are four cylinders, which can be connected so as to allow of single, compound, triple or quadruple expansion, condensing or non-condensing, with or without jackets. The measurements of heat are made by large tanks, which receive the condensing water and the condensed steam. There are two hydraulic absorption brakes for measuring the mechanical power developed, and an alternative friction brake for the same purpose. The Laboratory is further equipped with a variety of apparatus for the investigation and illustration of the general principles of thermodynamics, including hot air and other engines, indicators, pyrometers, pressure gauges, etc.

The equipment of the Electrical Engineering Laboratory includes a high speed steam engine coupled direct to a dynamo for incandescent lighting; a slow speed steam engine for driving the experimental dynamos. These latter have been chosen to represent the best types now in general use, both of high tension and low tension direct current dynamos—with various methods