Genetics

A Self Instruction Manual

Compiled & Edited by:
Tan Chun Hoe

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Preface

Genetics is the cornerstone of modern biology, providing insights into the intricate mechanisms of inheritance, variation, and evolution. This Self Instruction Manual aims to introduce you to the fundamental concepts of genetics, from the molecular basis of genes and DNA to the principles of heredity, genetic diversity, and the latest advances in biotechnology.

As an ever-evolving field, genetics impacts diverse disciplines including medicine, agriculture, anthropology, and forensic science. Understanding genetic principles will not only equip you with the foundational knowledge needed to appreciate these applications but will also foster critical thinking skills necessary to engage with the ethical, social, and scientific issues that arise in this dynamic field.

This manual is designed for independent learners, offering a comprehensive yet accessible approach. Each section builds upon the last, guiding you through key topics like Mendelian inheritance, DNA replication, genetic mutations, and genetic engineering. In addition to theoretical knowledge, you'll find exercises, practical examples, and thought-provoking case studies that reinforce the material and allow you to apply the concepts to real-world scenarios.

Whether you are preparing for a formal course, seeking to enhance your professional knowledge, or simply curious about the science of genetics, this module provides a structured pathway to help you achieve a deeper understanding of the genetic code that drives all life.

Happy learning!

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Table of Content

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