

NANYANG TECHNOLOGICAL UNIVERSITY
SCHOOL OF BIOLOGICAL SCIENCES

BS-Book List AY20/21S2

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BS2020	MATHEMATICS AND PHYSICS FOR THE STRUCTURAL BIOLOGIST
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BS4019	DISCOVERY AND DEVELOPMENT OF THERAPEUTIC ANTIBODIES [NEW]
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CH9200	FOOD MICROBIOLOGY

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BS1005 BIOCHEMISTRY I

Subject Coordinator: Assoc Prof Curtis Davey

Prescribed Textbook

Christopher K. Mathews, *Biochemistry*, 4th Edition, Pearson, 2013. (Call no: QD415.M429 2013)

Other Reference

Albert L. Lehninger, *Lehninger principles of biochemistry*, 7th Edition, W.H. Freeman, 2017.

BS1006 PRINCIPLES OF GENETICS

Subject Coordinator: Assoc Prof Peter Droge

Prescribed Textbooks

D. Peter Snustad, *Genetics*, 6th Edition, International student version, Wiley, 2012
(Call No: QH430.S674 2012a)

Jocelyn E. Krebs, *Lewin's essential genes*, 3rd Edition, Jones and Bartlett Learning, 2013
(Call no: QH430.K92 2013)

Essentials of Genetics (9th Edition) - Standalone book 9th Edition
by William S. Klug (Author), Michael R. Cummings (Author), Charlotte A. Spencer (Author), Michael A. Palladino (Author);

Publisher: Pearson; 9 edition (October 17, 2015)

Language: English

ISBN-10: 0134047796

ISBN-13: 978-0134047799

<https://www.mheducation.com/highered/product/human-genetics-lewis/M9781259700934.html>

<https://www.mheducation.com/highered/product/genetics-genes-genomes-goldberg-fischer/M9781260240870.html>

BS1007 MOLECULAR & CELL BIOLOGY I

Subject Coordinator: Assoc Prof Thirumaran Thanabalu

Prescribed Textbooks

Bruce Alberts, *Molecular biology of the cell*, 6th Edition, Garland Science, 2015
(Call No: QH581.2.M718 2015)

Molecular Cell Biology 8th Edition

by Harvey Lodish (Author), Arnold Berk (Author), Chris A. Kaiser (Author), Monty Krieger (Author), Anthony Bretscher (Author), Hidde Ploegh (Author), Angelika Amon (Author), Kelsey C. Martin (Author)

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Publisher: W. H. Freeman; 8 edition (April 1, 2016)
Language: English
ISBN-10: 1464183392
ISBN-13: 978-1464183393

Other Reference

Gerald Karp, *Cell and molecular biology: concepts and experiments*, 7th Edition, Wiley, 2013 (Call no: QH581.2.K18 2013)

BS1009 INTRODUCTION TO COMPUTATIONAL THINK

Subject Coordinator: Asst Prof Marek Mutwil

Prescribed Textbooks

NIL

BS1100 MOLECULAR & CELL BIOLOGY TECHNIQUES LEVEL 1

Subject Coordinator: Assoc Prof Tan Suet Mien

Prescribed Textbooks

Rob Reed, David Holmes, Jonathan Weyers, Allan Jones, *Practical Skills in Biomolecular Sciences*, 4th Edition, Pearson Education, 2013 (Call no: QH506.P895 2013)

BS2004 MOLECULAR & CELL BIOLOGY II

Subject Coordinator: Assoc Prof Koh Cheng Gee

References

Alberts, Bruce. *Molecular biology of the cell*, 6th Edition, Garland Science
(Call no: QH581.2.M718 2015)

Molecular Cell Biology 8th Edition

by Harvey Lodish (Author), Arnold Berk (Author), Chris A. Kaiser (Author), Monty Krieger (Author), Anthony Bretscher (Author), Hidde Ploegh (Author), Angelika Amon (Author), Kelsey C. Martin (Author)

Publisher: W. H. Freeman; 8 edition (April 1, 2016)

Language: English

ISBN-10: 1464183392

ISBN-13: 978-1464183393

Cell and Molecular Biology: Concepts and Experiments 8e Binder Ready Version + WileyPLUS Learning Space Registration Card 8th Edition

by Gerald Karp (Author)

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Publisher: Wiley (WileyPLUS Products); 8 edition (May 9, 2016)
Language: English
ISBN-10: 1119231515
ISBN-13: 978-1119231516

BS2010 BIOIMAGING

Subject Coordinator: Asst Prof Lu Lei

Reference

Douglas B. Murphy, *Fundamentals of light microscopy and electronic imaging*, 2nd Edition, Wiley-Blackwell, 2013. (Call no: QH211.M978 2013)

BS211S EQUATIONS OF LIFE [Self-paced course]

Subject Coordinator: Asst Prof Lu Lanyuan

Reference

A standard mathematics textbook of A-level.

BS2012 GENETICS & GENOMICS

Subject Coordinator: Asst Prof Amartya Sanyal

Prescribed Textbook/References

L. H. Hartwell, *Genetics, from genes to genomes*, 5th Edition, McGraw-Hill Education, 2014
Robert J Brooker, *Genetics, Analysis and Principles*, 5th Edition, McGraw-Hill Education, 2015

BS2020 MATHEMATICS, PHYSICS AND BASIC PROGRAMMING FOR THE STRUCTURAL BIOLOGIST

Subject Coordinator : Assoc Prof Julien Lescar

Prescribed Textbook

Eugene Hecht, *Optics*, 5th Edition, Pearson, 2017. ISBN-13:978-0-133-97722-6

References

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KF Riley, MP Hobson SJ Bence *Mathematical methods for physics and engineering*. 3rd edition. Cambridge University Press. 2016. ISBN 978-0-521-67971-8

Grant R. Fowles, *Introduction to Modern Optics*, 2nd Edition, Dover, 1989. ISBN-13: 978-0486659572

John D. Jackson, *Classical Electrodynamics*, 3rd Edition, John Wiley & Sons, 1998. ISBN: 978-0-471-30932-1

M. Born & E. Wolf, *Principles of Optics*, 7th Edition Cambridge University Press, 1999 ISBN: 0 521 64 2221

Igor N. Serdyuk, Nathan R. Zaccai, Giuseppe Zaccai, *Methods in Molecular Biophysics: Structure, Dynamics, Function* 1st Edition, Cambridge University Press, 2007, ISBN: 0-521-81524-X

BS2021 RNA STRUCTURES & RNA BASED DRUG DEVELOPMENT

Subject Coordinator: Asst Prof Wu Bin, Asst Prof Luo Dahai

Prescribed Textbook

James Darnell, *RNA: Life's Indispensable Molecule*, Cold Spring Harbor Laboratory Press, 2011. (Call no: QP623.D223)

Molecular Biology of RNA 2nd Edition
by David Elliott (Author), Michael Ladomery (Author)
Publisher: Oxford University Press; 2 edition (January 2, 2016)
Language: English
ISBN-10: 0199671397
ISBN-13: 978-0199671397

David S. Goodsell, *The Machinery of Life*, 2nd Edition, Harvard University Press, Cambridge, MA, USA, 2009. (E-Book)

BS3006 BIOENTREPRENEURSHIP

Subject Coordinator: Dr Hong Yan

References

Shimasaki, C. D. (2014). *Biotechnology entrepreneurship : starting, managing, and leading biotech companies*, Oxford : Academic Press

Patzelt, H. and T. Brenner (2008). *Handbook of bioentrepreneurship*, New York ; London : Springer

Teng, P. (2008). *Bioscience Entrepreneurship in Asia: Creating Value with Biology Singapore*, World Scientific Publishing Company.

Leach, J. C. and R. W. Melicher (2015). *Entrepreneurial finance*, Australia ; Singapore : South-Western Cengage Learning, 5th edition.

BS3008 COMPUTATIONAL BIOLOGY AND MODELING

Subject Coordinator: Assoc Prof Mu Yuguang

Prescribed Textbooks

Schlick, Tamar, *Molecular modeling and simulation: an interdisciplinary guide*, 2nd Edition, Springer, 2010. (Call no: QD480.S344 2010, E-Book)

Hinchliffe, Alan., *Molecular modelling for beginners*, 2nd Edition, Wiley, 2008. (QD480.H659M 2008)

Höltje, Hans-Dieter, *Molecular modeling: basic principles and applications*, 3rd revised and expanded Edition, Wiley-VCH, 2008. (Call no: QH506.M718MMB 2008)

BS3012 FUNCTIONAL GENOMICS AND PROTEOMICS

Subject Coordinator: Assoc Prof Sze Siu Kwan, Newman

References

Richard M. Twyman, *Principles of proteomics*, 2nd Edition, Garland Science, 2014 (Call No: QP551.T975 2014)

Jonathan Pevsner, *Bioinformatics and Functional Genomics*, 3rd Edition, Wiley-Blackwell, 2015

Chhabil Dass, *Fundamentals of Contemporary Mass Spectrometry*, Wiley Interscience, 2007 (Call no: QC454.M3D231)

Timothy D. Veenstra, John R. Yates, *Proteomics for Biological Discovery*, Wiley-Liss, 2006 (Call no: QP551.P967T)

Nobuhiro Takahashi, Toshiaki Isobe, *Proteomic Biology Using LC-MS*, Wiley Interscience, 2008 (Call no: QP551.T136)

Franz Hillenkamp and Jasna Peter-Katalinic, *MALDI MS : a practical guide to instrumentation, methods, and applications*, 2nd Edition, Wiley, 2013 (E-copy)

Richard J. Simpson, *Proteins and Proteomics: a laboratory manual*, Cold Spring Harbor Laboratory Press, 2003 (Call no: QP551.P967PAP)

Igor A. Kaltashov and Stephen J Eyles, *Mass Spectrometry in Biophysics*, Wiley Interscience, 2005 (Call no: QP519.9.M3K14)

BS3013 DRUG DISCOVERY & DEVELOPMENT, BIOTECHNOLOGY

Subject Coordinator: Assoc Prof Liu Chuan Fa

References

Silverman, Holladay, *The organic chemistry of drug design and drug action*, 3rd Edition, Elsevier Academic Press, 2014. (Call no: RS403.S587 2014, E-copy)

Wilson, Charles Owens, *Wilson and Gisvold's textbook of organic medicinal and pharmaceutical chemistry*, 12th Edition, Lippincott Williams & Wilkins, 2011. (Call no: RS403.W746 2011)

An Introduction to Medicinal Chemistry 6th Edition
by Graham Patrick (Author)
Publisher: Oxford University Press; 6 edition (June 20, 2017)
Language: English
ISBN-10: 0198749694 and ISBN-13: 978-0198749691

Foye, William O., *Foye's principles of medicinal chemistry*, 7th Edition, Lippincott Williams & Wilkins, 2013. (Call no: RS403.W722 2013)

BS3017 ADVANCED MICROBIAL PATHOGENESIS

Subject Coordinator: Asst Prof Kimberly Kline

Prescribed Textbook

Wilson B.A., *Bacterial pathogenesis: a molecular approach*, 4th Edition, ASM Press, 2019. (Call no: QR201.B34S186 2019)

Reference

Walsh C., *Antibiotics: challenges, mechanisms, opportunities*, ASM Press, 2016. (Call no. RM267.W223a)

BS3022 PROTEIN TRAFFICKING

Subject Coordinator: Asst Prof Guillaume Thibault

Prescribed Textbook

Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, *Molecular Biology of the Cell*, 6th Edition, Garland Science, 2014. (Call no: QH581.2.M718 2015)

Lukas K. Buehler, *Cell Membranes*, Garland Science, 2016, ISBN: 9780815341963 (Call no: QH601.B928)

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BS3025 NMR IN STRUCTURAL BIOLOGY

Subject Coordinator: Assoc Prof Konstantin Pervushin

Prescribed Textbook

NIL

BS3028 NATURAL PRODUCTS IN MEDICINAL CHEMISTRY

Subject Coordinator: Assoc Prof Liang Zhao-Xun

Prescribed Textbook:

Natural Product Biosynthesis: Chemical Logic and Enzymatic Machinery

Christopher T Walsh, Yi Tang

<https://pubs-rsc-org.ezlibproxy1.ntu.edu.sg/en/content/ebook/978-1-78801-076-4>

BS0005 ONE HEALTH

Subject Coordinator: Dr Hong Yan

References :

Maloy, S. R. and R. M. Atlas (2014). One Health: People, Animals, and the Environment. Washington DC, ASM Press.

Mackenzie, J. S., M. Jeggo, P. Daszak and J. A. Richt (2013). One Health: The Human-Animal-Environment Interfaces in Emerging Infectious Diseases. The Concept and Examples of a One Health Approach, Berlin, Heidelberg: Springer Berlin Heidelberg

Mackenzie, J. S., M. Jeggo, P. Daszak and J. A. Richt (2013). One Health: The Human-Animal-Environment Interfaces in Emerging Infectious Diseases. Food Safety and Security, and International and National Plans for Implementation of One Health Activities, Berlin, Heidelberg: Springer Berlin Heidelberg

BS3036 FUNDAMENTALS OF IMMUNOLOGY – CONCEPTS AND EXPERIMENTS [NEW]

Subject Coordinator: Assoc Prof Su I-Hsin

Prescribed Textbook:

Nil

References:

1. The Immune Response–Basic and Clinical Principles by Tak Wah Mak, ISBN 978-0-12-088451-3, 2006, Academic Press

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2. **Janeway's ImmunoBiology** by [Kenneth Murphy](#), [Casey Weaver](#), ISBN 978-0-8153-4551-0, 2016, Garland Science
3. **Molecular Biology of the Cell** by Bruce Alberts, chapter 24, ISBN 978-4-3155-2062-0, 2017, Garland Science
4. **NCBI, Google and other online tools**

BS4018 BIOLOGY OF AGING AND NEURODEGENERATION

Subject Coordinator: Dr Choe Young Jun

Prescribed Textbook:

[Bruce Alberts, *Molecular biology of the cell*, 6th Edition, Garland Science, 2015
(Call No: QH581.2.M718 2015)

Lewin's Genes XI, Jones & Bartlett Learning, 2014 (Call No: QH430.L672 2014)]

BS4019 DISCOVERY AND DEVELOPMENT OF THERAPEUTIC ANTIBODIES [NEW]

Subject Coordinator: Dr Ignacio Asial

Prescribed Textbook:

References:

BS4205 GOOD MANUFACTURING PRACTICE AND STERILISATION FOR MEDICAL DEVICES

Subject Coordinator: Dr Nealda Yusof/Dr Sze Chun Chau

Prescribed Textbook:

1. Mindy J. Allport-Settle, Current Good Manufacturing Practices: Pharmaceutical, Biologics, and Medical Device Regulations and Guidance Documents, PharmaLogika, 2009.

ISBN-10: 19372558173
ISBN-13: 978-1937258177

2. Christopher J. Devine, Devine Guidance for Complying with the FDA's Quality System Regulation: 21 CFR Part 820, CreateSpace 2011.

ISBN-10: 1466358769
ISBN-13: 978-1466358768

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3. Susanne Marz, *Medical Device Quality Management Systems: Strategy and Techniques for Improving Efficiency and Effectiveness*, Academic Press 2018.

ISBN-10: 0128142219
ISBN-13: 978-0128142219
4. International Standards Organization (ISO), *ISO 13485:2016 – Medical Devices – Quality Management Systems – Requirements for regulatory purposes*, 2016.
5. International Standards Organization (ISO), *ISO 17665-1:2006 – Sterilization of healthcare products – Moist heat – Part 1: Requirements for the development, validation and routine control of a sterilization process for medical devices*, 2006.
6. International Standards Organization (ISO), *ISO 17665-2:2009 – Sterilization of healthcare products – Moist heat – Part 2: Guidance on the application of ISO 17665-1*, 2009.
7. International Standards Organization (ISO), *ISO 17665-3:2013 – Sterilization of healthcare products – Moist heat – Part 3: Guidance on the designation of a medical device to a product family and processing category for steam sterilization*, 2013.
8. International Standards Organization (ISO), *ISO 11135:2014 – Sterilization of healthcare products – Ethylene Oxide – Requirements for the development, validation and routine control of a sterilization process for medical devices*, 2014.
9. International Standards Organization (ISO), *ISO 11137-1:2006 – Sterilization of healthcare products – Radiation – Part 1: Requirements for the development, validation and routine control of a sterilization process for medical devices*, 2006.
10. International Standards Organization (ISO), *ISO 11137-2:2013 – Sterilization of healthcare products – Radiation – Part 2: Establishing the sterilization dose*, 2013.
11. International Standards Organization (ISO), *ISO 11137-3:2017 – Sterilization of healthcare products – Radiation – Part 3: Guidance on dosimetric aspects of development, validation and routine control*, 2017.

BS8001 HUMAN BODY FUNCTION AND DISEASE

Subject Coordinator: Dr Peter Cheung

Prescribed Text

Jane B Reece, Martha Taylor, *Campbell Biology Concepts and Connections*, 8th Edition, Pearson. ISBN 10: 1-292-05780-7.

Other References

Michael D Johnson, *Human Biology Concepts and Current Issues*, 8th Edition, Pearson. ISBN 10: 1-292-16627-4.

BS8101 DEEP, BIOLOGICALLY

Subject Coordinator:

Dr Sze Chun Chau (Sem 1)

Dr Goh Wen Bin Wilson (Sem 2)

Prescribed Textbook

McWilliams, *Foods: Experimental Perspectives*, 8th Edition, Pearson, 2016.

Introductory Foods (14th Edition) 14th Edition

by Barbara Scheule Ph.D. RD (Author), Marion Bennion (Author)

Publisher: Pearson; 14 edition (January 31, 2014)

Language: English

ISBN-10: 0132739275

ISBN-13: 978-0132739276

CH9200 FOOD MICROBIOLOGY

Subject Coordinator: Dr Sze Chun Chau

Prescribed Textbook

Adams, M. R., *Food Microbiology*, 4th Edition, Royal Society of Chemistry, 2016

(Call No: QR115.A215 2016)