

NANYANG TECHNOLOGICAL UNIVERSITY  
SCHOOL OF BIOLOGICAL SCIENCES

BS-Book List Updating AY19/20 S2

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BS2004	MOLECULAR & CELL BIOLOGY II
BS2010	BIOIMAGING
BS211S	EQUATIONS OF LIFE [Self-paced course]
BS2012	GENETICS & GENOMICS
BS2020	MATHEMATICS, PHYSICS AND BASIC PROGRAMMING FOR THE STRUCTURAL BIOLOGIST
BS2021	RNA STRUCTURES & RNA BASED DRUG DEVELOPMENT
BS3006	BIOENTREPRENEURSHIP
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BS3013	DRUG DISCOVERY & DEVELOPMENT, BIOTECHNOLOGY
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BS0005	ONE HEALTH
BS4205	GOOD MANUFACTURING PRACTICE AND STERILISATION FOR MEDICAL DEVICES <b>[NEW]</b>
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BS8101	DEEP, BIOLOGICALLY
CH9200	FOOD MICROBIOLOGY

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**BS1005 BIOCHEMISTRY I**

Subject Coordinator: Assoc Prof Curtis Davey

**Prescribed Textbook**

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

**Other Reference**

Albert L. Lehninger, *Lehninger principles of biochemistry*, 5<sup>th</sup> Edition, W.H. Freeman, 2008.  
(QD415.L523 2008)

**BS1006 PRINCIPLES OF GENETICS**

Subject Coordinator: Assoc Prof Peter Droge

**Prescribed Textbooks**

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

Jocelyn E. Krebs, *Lewin's essential genes*, 3<sup>rd</sup> 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

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**BS1007 MOLECULAR & CELL BIOLOGY I**

Subject Coordinator: Assoc Prof Thirumaran Thanabalu

**Prescribed Textbooks**

Bruce Alberts, *Molecular biology of the cell*, 6<sup>th</sup> 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)

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*, 7<sup>th</sup> 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*, 4<sup>th</sup> 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*, 6<sup>th</sup> 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)

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*, 2<sup>nd</sup> 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.

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**BS2012 GENETICS & GENOMICS**

Subject Coordinator: Asst Prof Amartya Sanyal

**Prescribed Textbook/References**

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

**BS2020 MATHEMATICS, PHYSICS AND BASIC PROGRAMMING FOR THE STRUCTURAL BIOLOGIST**

Subject Coordinator : Assoc Prof Julien Lescar / Assoc Prof Mu Yuguang

**Prescribed Textbook**

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

Peter Wentworth, Jeffrey Elkner, Allen B. Downey, and Chris Meyers, *How to Think Like a Computer Scientist: Learning with Python 3*, October 2012 (online book)  
<http://openbookproject.net/thinkcs/python/english3e/>

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

**References**

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

M. Born & E. Wolf, *Principles of Optics*, 7<sup>th</sup> 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* 1<sup>st</sup> 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 Lodomery (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*, 2<sup>nd</sup> 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.

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**BS3008 COMPUTATIONAL BIOLOGY AND MODELING**

Subject Coordinator: Assoc Prof Mu Yuguang

**Prescribed Textbooks**

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

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

Höltje, Hans-Dieter, *Molecular modeling: basic principles and applications*, 3<sup>rd</sup> 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*, 2<sup>nd</sup> Edition, Garland Science, 2014 (Call No: QP551.T975 2014)

Jonathan Pevsner, *Bioinformatics and Functional Genomics*, 3<sup>rd</sup> 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*, 2<sup>nd</sup> 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)

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**BS3013 DRUG DISCOVERY & DEVELOPMENT, BIOTECHNOLOGY**

Subject Coordinator: Assoc Prof Liu Chuan Fa

**References**

Silverman, Holladay, *The organic chemistry of drug design and drug action*, 3<sup>rd</sup> 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*, 12<sup>th</sup> 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*, 7<sup>th</sup> 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*, 3<sup>rd</sup> Edition, ASM Press, 2011.  
(Call no: QR201.B34S186 2011)

**New Edition:**

Wilson B.A., *Bacterial pathogenesis: a molecular approach*, 4<sup>th</sup> Edition, ASM Press, 2019.

**Reference**

Walsh C., *Antibiotics: actions, origins, resistance*, ASM Press, 2003. (Call no: RM267.W223)

**New Edition:**

Walsh C., *Antibiotics: challenges, mechanisms, opportunities*, ASM Press, 2016.

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**BS3019 NEUROPSYCHOLOGY OF STRESS AND RESILIENCE**

Subject Coordinator: Asst Prof Rupshi Mitra

**Prescribed Textbook**

Robert M. Sapolsky, *Why Zebras don't get ulcers*, 3<sup>rd</sup> Edition, Holt Paperbacks, 2004. (Call no: QP82.2.S8S241)

**BS3022 PROTEIN TRAFFICKING**

Subject Coordinator: Asst Prof Guillaume Thibault

**Prescribed Textbook**

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

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

**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>

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**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

**BS4018 BIOLOGY OF AGING AND NEURODEGENERATION [NEW]**

Subject Coordinator: Dr Choe Young Jun

**Prescribed Textbook:**

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

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

**BS4205 GOOD MANUFACTURING PRACTICE AND STERILISATION FOR MEDICAL DEVICES [NEW]**

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
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.

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11. International Standards Organization (ISO), ISO 11137-2:2017 – 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*, 8<sup>th</sup> Edition, Pearson. ISBN 10: 1-292-05780-7.

#### Other References

Michael D Johnson , *Human Biology Concepts and Current Issues*, 8<sup>th</sup> 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*, 8<sup>th</sup> 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*, 4<sup>th</sup> Edition, Royal Society of Chemistry, 2016  
(Call No: QR115.A215 2016)