

NANYANG TECHNOLOGICAL UNIVERSITY  
SCHOOL OF BIOLOGICAL SCIENCES

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**BS1001 INTRODUCTORY BIOLOGY**

Subject Coordinator: Dr Peter Cheung

**Prescribed Textbook**

Sylvia S. Mader, *Biology*, 12<sup>th</sup> Edition, McGraw-Hill, 2015. (Call no: QH308.2.M181b 2016)

Johnson, George, *Essentials of The Living World*, 4<sup>th</sup> Edition, McGraw-Hill 2013. (QH308.2.J67 2013)

**BS1002 BIOPHYSICAL CHEMISTRY**

Subject Coordinator: Assoc Prof Mu Yuguang

**Prescribed Textbook**

Ignacio Tinoco, Jr. and co-authors, *Physical Chemistry Principles and Applications in Biological Sciences*: 5th Edition (Call no: QH345.P578 2014)

**References**

Nicholas C. Price, *Principles and problems in physical chemistry for biochemists*, 3<sup>rd</sup> Edition, Oxford University Press, 2001. (Call no: QD415.P957)

Christopher K. Mathews, *Biochemistry*, 4<sup>th</sup> Edition, Pearson, 2013. (QD415.M429 2013)

**BS1003 ORGANIC CHEMISTRY**

Subject Coordinator: Prof Zhao Yanli / Assoc Prof Liu Chuan Fa

**Prescribed Textbook**

MCMURRY - ASIA IAC OWL V2 W/MTR ORG CHEM, 9E, 2016  
ISBN: 9788000010519

**References**

Organic Chemistry (Fifth Edition) 5th Edition  
by Maitland Jones Jr. (Author), Steven A. Fleming (Author)  
Publisher: W. W. Norton & Company; 5 edition (February 1, 2014)

Language: English

ISBN-10: 0393913031

ISBN-13: 978-0393913033

T. W. Graham. Solomons, *Organic chemistry*, 11<sup>th</sup> Edition, Wiley, 2014. (QD253.2.S689 2014)

John McMurry, *Fundamentals of organic chemistry*, 7<sup>th</sup> International Edition, Brooks/Cole, 2011. (QD251.2.M168 2011)

Paula Yurkanis Bruice, *Organic chemistry*, 7<sup>th</sup> International Edition, Prentice Hall, 2014. (QD251.3.B896 2014)

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**Introductory Texts**

Robert Charles Atkins, *Organic chemistry: a brief course*, 3<sup>rd</sup> International Edition, McGraw-Hill, 2007. (Call no: QD253.2.A874 2007)

T. W. Graham Solomons, *Fundamentals of organic chemistry*, 5<sup>th</sup> Edition, Wiley, 1997. (QD251.2.S689F)

Morris Hein, *Introduction to general, organic, and biochemistry*, 10<sup>th</sup> Edition, John Wiley, 2012. (QD31.3.I61 2012)

Douglas Applequist, *Introduction to organic chemistry*, 3<sup>rd</sup> Edition, Wiley, 1982. (QD253.A648)

**Oxford Chemistry Primers**

Michael Hornby, *Foundations of organic chemistry*, Oxford University Press, 1995. (QD253.H814)

Michael Hornby, *Foundations of organic chemistry: worked examples*, Oxford University Press, 2000. (QD253.H814F)

Howard Maskill, *Mechanisms of organic reactions*, Oxford University Press, 1996. (QD476.M397)

Michael J. T. Robinson, *Organic stereochemistry*, Oxford University Press, 2000. (QD481.R663)

**Additional Books**

Dieter Hellwinkel, *Systematic nomenclature of organic chemistry: a directory to comprehension and application of its basic principles*, Springer, 2001. (QD291.H477)

**BS1008 BIostatISTICS**

Subject Coordinator: Assoc Prof Lu Lanyuan

**Prescribed Textbook**

Geoffrey R. Norman, *Biostatistics: the bare essentials*, 4th Edition, People's Medical Publishing House-USA, 2014 (Call no: QH323.5.N842 2014, E-Book)

**BS1200 UNDERSTANDING SINGAPORE HEALTHCARE SYSTEM**

Subject Coordinator: Dr Sze Chun Chau

**Prescribed Textbook**

Singapore's Health Care System

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(Ed. Lee Chien Earn & K. Satk, World Scientific Publishing)  
ISBN 978-9814696050

**BS0004 INTRODUCTION TO DATA SCIENCE**

Subject Coordinator: Dr Wilson Goh

**Prescribed Textbook / Reference**

NIL

**BS2001 PHYSIOLOGY**

Subject Coordinator: Assoc Prof Valerie Lin

**Prescribed Textbook**

Sherwood, Lauralee, *Human physiology : from cells to systems*, 9<sup>th</sup> Edition, Cengage Learning, 2016 (ISBN: 9781285866932).

**Reference**

Eric P. Widmaier, *Vander's human physiology: the mechanisms of body function*, 13<sup>th</sup> Edition, McGraw-Hill, 2014. (QP34.5.V228 2014)

**BS2002 MICROBIOLOGY**

Subject Coordinator: Assoc Prof Scott Rice / Assoc Prof Kevin Pethe

**Prescribed Textbook**

Joanne M. Willey, *Prescott's microbiology*, 9<sup>th</sup> Edition, McGraw-Hill, 2014. (Call no: QR41.2.W714 2014)

**BS2003 BIOCHEMISTRY II**

Subject Coordinator: Prof Gerhard Gruber

**Prescribed Textbook**

Donald Voet, *Biochemistry*, 4<sup>th</sup> Edition, John Wiley & Sons, 2011. (Call no: QP514.2.V876 2011)

Christopher K. Mathews, *Biochemistry*, 4<sup>th</sup> Edition, Pearson, 2013. (QD415.M429 2013)

Jeremy Mark Berg, *Biochemistry*, 7<sup>th</sup> International Edition, W.H. Freeman, 2012. (QP514.2.S928 2012)

Laurence A . Moran, *Principles of biochemistry*, 5<sup>th</sup> International Edition, Pearson, 2012. (QP514.2.P957 2012)

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**BS2015 VIROLOGY**

Subject Coordinator: Assoc Prof Richard Sugrue

**Prescribed Textbook**

Introduction to Modern Virology 7th Edition  
by Nigel J. Dimmock (Author), Andrew J. Easton (Author), Keith N. Leppard (Author)  
Language: English  
ISBN-10: 1119978106  
ISBN-13: 978-1119978107

Edward K. Wagner, *Basic virology*, 3<sup>rd</sup> Edition, Blackwell Pub., 2008. (Call no: QR360.W132 2008) E book

Understanding Viruses 3rd Edition  
by Teri Shors (Author)  
ISBN-13: 978-1284025927  
Publisher: Jones & Bartlett Learning; 3 edition (August 12, 2016)  
Language: English  
ISBN-10: 1284025926  
ISBN-13: 978-1284025927

N. H. Acheson, *Fundamentals of molecular virology*, 2<sup>nd</sup> Edition, John Wiley & Sons, 2011. (QR389.A177 2011)

**BS2100 MOLECULAR AND CELL BIOLOGY TECHNOQUES LEVEL 2**

Subject Coordinator: Asst Prof Alexander Ludwig / Asst Prof Li Yinghui

**Reference**

CRISPR-Cas: A Laboratory Manual (ISBN 978-1-621821-31-1)

Molecular Cloning: A Laboratory Manual (ISBN 0879695773)

Principles and Techniques of Biochemistry and Molecular Biology (ISBN 9780511813412)

**BS3001 NEUROBIOLOGY**

Subject Coordinator: Asst Profs Ayumu Tashiro/ Albert I. Chen

**Prescribed Textbook**

Dale Purves, *Neuroscience*, 6<sup>th</sup> Edition, Sinauer Associates, 2018. (Call no: QP355.2.N494 2018)

**Reference**

Eric R. Kandel, *Principles of neural science*, 5<sup>th</sup> Edition, McGraw-Hill, 2012. (QP355.2.P957 2013)

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Mark Bear, *Neuroscience*, 4<sup>th</sup> Edition, Wolters Kluwer, 2015

**BS3003 DEVELOPMENTAL BIOLOGY**

Subject Coordinator: Dr Peter Cheung

**Prescribed Textbook**

Michael J.F. Barresi and Scott F. Gilbert, *Developmental biology*, 12th Edition, Oxford University Press, 2019. (ISBN: 9781605358222)

Lewis Wolpert, *Principles of development*, 4<sup>th</sup> Edition, Oxford University Press, 2011. (QH491.P957 2011)

**Reference**

Alfonso Martinez Arias, *Molecular principles of animal development*, Oxford University Press, 2002. (QH506.M385)

J. M. W. Slack, *Essential developmental biology*, 3rd Edition, Blackwell Pub., 2013 (QH491.S631 2013)

**BS3004 CANCER BIOLOGY AND THERAPY**

Subject Coordinator: Asst Prof Melissa Fullwood

**Prescribed Textbook**

Robert Allan Weinberg, *The biology of cancer*, 2<sup>nd</sup> Edition, Garland Science, 2013. (Call no.: RC268.4.W423 2014)

**BS3014 BIOLOGICAL FOUNDATIONS OF BEHAVIOR**

Subject Coordinator: Assoc Prof Ajai Vyas

**Reference**

John Alcock, *Animal Behavior: An Evolutionary Approach* 10<sup>th</sup> Edition. Sinauer Associates. ISBN-13: 978-0878939664.

**BS3018 PLANT BIOLOGY**

Subject Coordinator: Asst Prof Oliver Mueller-Cajar

**Prescribed Textbook**

Raven Biology of Plants 8th Edition  
by Ray F. Evert (Author), Susan E. Eichhorn (Author)  
Publisher: W. H. Freeman; 8 edition (March 2, 2012)

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Language: English  
ISBN-10: 1429219610

Bob B. Buchanan, *Biochemistry and Molecular Biology of Plants*, 2<sup>nd</sup> Edition, American Society of Plant Physiologists, 2015.

**Reference**

Lincoln Taiz, *Plant Physiology and Development*, 6<sup>th</sup> Edition, Sinauer Associates, 2015

**BS3021 BIOIMAGING TECHNIQUES IN EM**

Subject Coordinator: Asst Prof Shashi Bhushan

**Prescribed Textbook**

Williams and Carter, *Transmission Electron Microscopy a Textbook for Material Science*, 2<sup>nd</sup> Edition, Springer, 2009. (Call No.: TA417.23.W716 2009)

Joachim Frank, *Three-Dimensional Electron Microscopy of Macromolecular Assemblies: Visualization of Biological Molecules in their Native State*, 2<sup>nd</sup> Edition, Oxford, 2006. (QH324.9.T45F828) E book

**BS3023 REGULATORY CONTROL OF HEALTHCARE PRODUCTS AND MEDICAL DEVICES**

Subject Coordinator: Prof Yoon Ho Sup, Joe / Dr Nealda Yusof

**Reference**

Jonathan S. Kahan, Hogan Lovells US LLP, *Medical Device Development: Regulation and Law*, 3<sup>rd</sup> Edition, Parexel Intl Corp, 2014, ISBN-13: 978-0988314436

Rosemary Hawkins, *Medical Device Approval and Regulation in 16 Countries: Brief Overviews*, Nova Science Publishers, ISBN: 978-1-63484-242-6

Carl T. DeMarco, *Medical Device Design and Regulation*, ASQ Quality Press, 2011, ISBN: 0873898168, 9780873898164

Mindy J. Allport-Settle, *Current Good Manufacturing Practices: Pharmaceutical, Biologics, and Medical Device Regulations and Guidance Documents*, PharmaLogika, Inc., ISBN: 1449505236, EAN-13 9781449505233

Jean-Pierre Boutrand, *Biocompatibility and Performance of Medical Devices*, Woodhead Pub Limited, 2012, ISBN: 0857090704, 9780857090706

*Medical devices – Application of risk management to medical devices*, ISO (the International Organization for Standardization) ISO14971:2019 (en), **Document published on:** 2019-12

*Medical devices – Quality management systems – Requirements for regulatory purposes*, ISO (the International Organization for Standardization) ISO13485:2016 (en), **Document published on:** 2016-03-01

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C. C. W. Schoenmakers, *Ce Marking for Medical Devices: A Handbook to the Medical Devices Directives: Medical Devices Directive 93/42/Eec : The Active Implantable Medical Devices Directive 90/396/Eec*, ISBN-13: 978 1559379465

**BS3024 EVOLUTION IN HEALTH & DISEASE**

Subject Coordinator: Assoc Prof Konstantin Pervushin/ Asst Prof Kim Hie Lim

**Reference**

Mark Jobling et al. Human Evolutionary Genetics. Second edition. (Garland Science, 2014). ISBN: 9780815341482

Johnathan B. Losos. The Princeton Guide to Evolution. (Princeton: Princeton University Press, 2014). ISBN: 9780691149776.

Andrew F.G. Bourke. Principles of social evolution. (Oxford: Oxford University Press, 2011). ISBN: 9780199231157

John Maynard-Smith and Eörs Szathmáry. The Major Transitions in Evolution. (Oxford: Oxford University Press, 1995) ISBN: 9780198502944

Stephen C. Stearns and Jacob C. Koella. Evolution in Health and Disease. Second edition (Oxford: Oxford University Press, 2008) ISBN: 9870199207459

David N. Cooper (Editor), Hildegard Kehrer-Sawatzki (Editor). Handbook of Human Molecular Evolution, 2 Volume Set (Wiley 2008). ISBN: 978-0-470-51746-8

**BS3027 SPECTROSCOPIC METHODS IN BIOMEDICAL STRUCTURAL BIOLOGY**

Subject Coordinator: Assoc Prof Jaume Torres

**Prescribed Textbooks / Reference**

NIL

**BS3032 ENVIRONMENTAL MICROBIOLOGY**

Subject Coordinator: Assoc Prof Scott Rice / Dr McDougald Diane

**Prescribed Textbooks / Reference**

NIL



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**BS4002 CURRENT TOPICS IN CELL BIOLOGY**

Subject Coordinator: Asst Prof Miao Yansong

**Reference**

References information and papers will be given using TEL online system.

Bruce Alberts, Dennis Bray, Karen Hopkin, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter, *Essential Cell Biology*, Fourth Edition, Garland Science - Taylor & Francis Group; October 14, 2013, ISBN: 9780815344544;

Research Articles will be provided.

**BS4010 SYNTHETIC BIOLOGY**

Subject Coordinator: Assoc Prof Gao Yonggui

**Prescribed Textbook**

Zhao Huimin, *Synthetic Biology: Tools and Applications*, Academic Press, 2013. (Call no.: TA164.S993) E book

E.R.Hamilton, M. L. Morales, *Synthetic Biology: Prospects and Implications*, Nova Science Pub Inc., 2012. (Call no.: QH585.S993)

Markus Schmidt, *Synthetic Biology: Industrial and Environmental Applications*, Wiley-Blackwell Press, 2012. (Call no.: TP248.S993) E book

[Anton Glieder](#), [Christian P. Kubicek](#), [Diethard Mattanovich](#), [Birgit Wiltschi](#), [Michael Sauer](#), *Synthetic Biology*, 1<sup>st</sup> Editor, Springer Press, 2016.

**BS4014 MOLECULAR BASIS OF DISEASES**

Subject Coordinator: Assoc Prof Surajit Bhattacharyya

**Prescribed Textbook**

John Mendelsohn, Joe W. Gray, Peter M. Howley, Mark A. Israel, Craig B. Thompson. Philadelphia, PA, The molecular basis of cancer, 4th Edition, 2015, Elsevier Saunders, ISBN-13: 978-1455740666

Patrick G. Guilfoile, Antibiotic resistant bacteria, Chelsea House Publishers, New York, N.Y., c2007, ISBN: 0791091880 (hc : alk. paper)

**Reference**

Thomas E. Creighton, Protein folding, W.H. Freeman and Co., Biochemical Education [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1879-1468](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1879-1468)>, Volume 21, Issue 1

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<http://onlinelibrary.wiley.com/doi/10.1002/bmb.569.v21:1/issuetoc>>, Article first published online: 30 JUN 2010, ISBN 0-7167-7027-X

### BS4015 PLANT BIOTECHNOLOGY

Subject Coordinator: Dr Hong Yan / Asst Prof Ma Wei

#### Reference

Plant Biotechnology and Agriculture: Prospects for the 21st Century, 1st Edition by Arie Altman and Paul Michael Hasegawa, Academic Press, 2011, ISBN: 9780123814661

Plant Biotechnology and Genetics: Principles, Techniques, and Applications, 2nd Edition by C. Neal Stewart Jr. (Editor), John Wiley & Sons, 2016, ISBN: 978-1-118-82012-4, 432 Pages

### BS4016 ADVANCED VIROLOGY

Subject Coordinator: Assoc Prof Richard Sugrue

#### Prescribed Textbook / Reference

### BS4017 HIGH-THROUGHPUT BIOINFORMATICS

Subject Coordinator: Asst Prof Jarkko Tapani Salojarvi

#### Prescribed Textbook / Reference

NIL

### BS8004 TRADITIONAL CHINESE MEDICINE: A PRIMER COURSE 中医入门

Subject Coordinator: Dr Zhao Yan

#### Reference

Sun, Guangren. *Zhong yi ji chu li lun*, 2<sup>nd</sup> Edition, Zhongguo Zhong yi yao chu ban she, 2007 (Call no: R601.Z63J 2007)

Gao, Xuemin. *Zhong yao xue*, 2<sup>nd</sup> Edition, Zhongguo Zhong yi yao chu ban she, 2007 (RS180.C5Z63X 2007)

Shi, Xuemin. *Zhen jiu xue*, 2<sup>nd</sup> Edition, Zhongguo Zhong yi yao chu ban she, 2007 (RM184.Z63E 2007A)

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**BS8101 DEEP, BIOLOGICALLY**

Subject Coordinator:

Dr Sze Chun Chau (Sem 1)

Dr Wilson Goh (Sem 2)

**Prescribed Textbook**

McWilliams, *Foods: Experimental Perspectives*, 8<sup>th</sup> Edition, Pearson, 2016. ISBN-13: 978-0134204581

Barbara Scheule and Marion Bennion, *Introductory Foods*, 14<sup>th</sup> Edition, Pearson, 2014. ISBN-13: [978-0132739276](#)

**SP0056 WORKINGS OF THE HUMAN BODY**

Subject Coordinator: Dr Peter Cheung

**Prescribed Textbook**

Jane B Reece, Martha Taylor, *Campbell Biology Concepts and Connections*, 9<sup>th</sup> Edition, Pearson, 2017, ISBN: 978-0134296012

**References**

Michael D Johnson, *Human Biology Concepts and Current Issues*, 8<sup>th</sup> Edition, Pearson, 2016, ISBN: 978-0134042435.