

**NANYANG TECHNOLOGICAL UNIVERSITY  
SCHOOL OF BIOLOGICAL SCIENCES**

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**BS1001 INTRODUCTORY BIOLOGY**

Subject Coordinator: Dr Sze Chun Chau

**References**

Mader, Sylvia S., *Biology*, 12<sup>th</sup> Edition, McGraw-Hill, 2015.

Johnson, George, *Essentials of The Living World* 4th Edition, McGraw-Hill 2013.

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**BS1002      BIOPHYSICAL CHEMISTRY**

Subject Coordinator: Assoc Prof Mu Yuguang

**Prescribed Textbook**

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

**Other References**

Atkins, P. W. (Peter William) *Elements of physical chemistry*, 6th Edition, Oxford University Press, (QD453.2.A874t 2013)

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

**BS1003      ORGANIC CHEMISTRY**

Subject Coordinator: Assoc Prof Liu Chuan Fa

**Prescribed Textbook**

Carey, Francis A. and Giuliano Robert M. *Organic chemistry*, 9<sup>th</sup> Edition, McGraw-Hill, 2011 (Call no: QD251.2.C273 2011)

**Other References**

Jones, Maitland. *Organic chemistry*, 4<sup>th</sup> Int'l Edition, W.W. Norton, 2010 (QD253.2.J78 2010)

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

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

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

**Introductory Texts**

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

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

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

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

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**Oxford Chemistry Primers**

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

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

Maskill, Howard. *Mechanisms of organic reactions*, Oxford University Press, 1999 (QD476.M397 1999)

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

**Additional Books**

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

**BS1005 BIOCHEMISTRY I**

Subject Coordinator: Assoc Prof Yoon Ho Sup, Joe

**Prescribed Textbook**

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

**Other Reference**

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

**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**

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

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**BS2002 MICROBIOLOGY**

Subject Coordinator : Drs Scott Rice / McDougald Diane

**Prescribed Textbook**

Willey, Joanne M., *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**

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

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

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

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

**BS2004 MOLECULAR & CELL BIOLOGY II**

Subject Coordinator: Assoc Prof Koh Cheng Gee

**Prescribed Textbook**

Alberts, Bruce. *Molecular biology of the cell*, 6<sup>th</sup> Edition, Garland Science

Lodish, Harvey F. *Molecular cell biology*, 7<sup>th</sup> Edition, W.H. Freeman, 2013 (QH581.2.M718m 2013)

**Other References**

Watson, James D. *Molecular biology of the gene*, 7<sup>th</sup> Edition, Cold Spring Harbor Laboratory Press, 2014 (QH506.M718B 2004)

Karp, Gerald. *Cell and molecular biology: concepts and experiments*, 7<sup>th</sup> Edition, Wiley, 2013 (QH581.2.K18 2013)

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**BS3001 NEUROBIOLOGY**

Subject Coordinator : Assistant Professors Ayumu Tashiro/ Albert I. Chen

**Prescribed Textbook**

Purves, Dale. et. al. *Neuroscience*, 5<sup>th</sup> Edition, Sinauer Associates, 2012.  
(Call no: QP355.2.N494 2012)

**Other Reference**

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

**BS3003 DEVELOPMENTAL BIOLOGY**

Subject Coordinator : Dr Peter Cheung

**Prescribed Textbook**

Gilbert, Scott F. *Developmental biology*, 10<sup>th</sup> Edition, Sinauer Associates, 2013 (Call no: QL955.G466 2013)

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

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

**Other References**

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

**BS3004 CANCER BIOLOGY**

Subject Coordinator : Prof Mark Featherstone

**Prescribed Textbook**

Weinberg, Robert A. (Robert Allan) *The biology of cancer*, 2<sup>nd</sup> Edition, Garland Science, 2013 (ISBN-10: 0815342195 / ISBN-13: 978-0815342199)

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**BS3005 ADVANCED MOLECULAR GENETICS**

Subject Coordinator : Asst Prof Zhang Li-Feng

**Prescribed Textbook**

Alberts, Bruce. *Molecular biology of the cell*, 5<sup>th</sup> Edition, Garland Science, 2008 (Call no: QH581.2.M718 2008)

**BS3016 MOLECULAR EVOLUTION**

Subject Coordinator : Assoc Prof Konstantin Pervushin

**Textbooks**

Stephen C. Stearns, Rolf F. Hoekstra. *Evolution: an introduction*, 2<sup>nd</sup> Edition, Oxford University Press, 2005 (Call no: QH366.2.S799)

John Maynard Smith and Eörs Szathmary, *The major transitions in evolution*, Oxford University Press, 1998 (QH366.2.M471m)

John Maynard Smith and Eörs Szathmary, *The Origins of Life: From the Birth of Life to the Origin of Language*, Oxford University Press, 2000 (QH366.2.M471)

Brett Calcott and Kim Sterelny, *The major transitions in evolution revisited*, The MIT Press, 2011 (QH366.2.M234., E-book)

**References**

Barton, Nicholas H. et. Al, *Evolution*, Cold Spring Harbor Laboratory Press, 2007 (QH366.2.E93EV)

Volff, Jean-Nicolas, *Gene and protein evolution*, Karger, 2007 (QH447.G326)

Yockey, Hubert P. *Information theory, evolution, and the origin of life*, Cambridge University Press, 2005 (QH506.Y54)

Paul G. Higgs and Teresa K. Attwood, *Bioinformatics and molecular evolution*, Blackwell Pub., 2005 (QH371.3.M37H637)

Nowak, M. A. (Martin A.) *Evolutionary dynamics: exploring the equations of life*, Belknap Press of Harvard University Press, 2006 (QH371.3.M37N946)

Massimo Pigliucci, Gerd B. Müller, *Evolution, the extended synthesis*, MIT Press, 2010 (QH366.2.E93ES)

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**BS3018 PLANT BIOLOGY**

Subject Coordinator : Asst Prof Oliver Mueller-Cajar

**Prescribed Textbook**

Raven, Peter H. *Biology of plants*, 7<sup>th</sup> Edition, W.H. Freeman and Co., 2005 (Call no: QK47.R253 2005)

Buchanan, Bob B. *Biochemistry & molecular biology of plants*, American Society of Plant Physiologists, 2000 (QK861.B615)

**BS3021 BIOIMAGING TECHNIQUES IN EM [New Course]**

Subject Coordinator : Asst Prof Shashi Bhushan

**Prescribed Textbooks**

Williams and Carter, *Transmission Electron Microscopy a Textbook for Material Science*, 2<sup>nd</sup> Edition, Springer, 2009 [ISBN: 9780387765013].

Frank, *Three-Dimensional Electron Microscopy of Macromolecular Assemblies: Visualization of Biological Molecules in their Native State*, 2<sup>nd</sup> Edition, Oxford, 2006 [ISBN: 9780195182187].

**BS4001 CURRENT TOPICS IN MUSCLE BIOLOGY & NEUROMUSCULAR DISEASES**

Subject Coordinator : Prof Ravi Kambadur

**References**

Alfonso J. Cruz-Jentoft, John E. Morley, *Sarcopenia*, John Wiley & Sons, 2012, (ISBN: 1118338057, 9781118338056)

Engel, Andrew. *Myology: basic and clinical*, 3<sup>rd</sup> Edition, Medical Pub. Division, 2004 (Call no: RC925.M997 V1, RC925.M997 V2)

Martini, Frederic. *Fundamentals of anatomy & physiology*, 9<sup>th</sup> Edition, Pearson Education Inc., 2012 (QP34.5.M386 2012)

Purves, Dale. *Neuroscience*, 5<sup>th</sup> Edition, Sinauer Associates, 2012 (QP355.2.N494 2012)

Haines, Duane E. *Fundamental neuroscience for basic and clinical applications*, 4<sup>th</sup> Edition, Elsevier Churchill Livingstone, 2013 (QP355.2.F981fn 2013)

Nicholls, John G. *From neuron to brain*, 5<sup>th</sup> Edition, Sinauer Associates, 2012 (QP355.2.F931 2012)

Hille, Bertil. *Ion channels of excitable membranes*, 3<sup>rd</sup> Edition, Sinauer, 2001 (QH603.I54H651)

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Blumenfeld, Hal. *Neuroanatomy through clinical cases*, 2<sup>nd</sup> Edition, Sinauer Associates, 2010 (QM451.B658 2010)

Rodieck, Robert W. *The first steps in seeing*, Sinauer Associates, 1998. (QP475.R692)

**BS4004 CURRENT TOPICS IN IMMUNOLOGY**

Subject Coordinator : Asst Prof Su I-Hsin

**Other References**

Murphy, Kenneth P. *Janeway's immunobiology*, 8<sup>th</sup> Edition, Garland Science, 2012 (Call no: QR181.M978 2012)

Tak W. Mak and Mary E. Saunders, *The immune response: basic and clinical principles*, Elsevier/Academic, 2006 (QR181.M235, E-book)

Abul K. Abbas, Andrew H. Lichtman, Shiv Pillai *Cellular and molecular immunology*, 7<sup>th</sup> Edition, Saunders/Elsevier, 2012 (QR185.5.A122 2012)

Kindt, Thomas J., *Kuby immunology*, 6<sup>th</sup> Edition, W.H. Freeman, 2007 (QR181.K51)

**BS4006 VIROLOGY**

Subject Coordinator: Assoc Prof Richard Sugrue

**Prescribed Textbooks**

Dimmock, N. J., *Introduction to modern virology*, 6<sup>th</sup> Edition, Blackwell Pub., 2007. (QR360.D582 2007)

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

Teri Shors, *Understanding viruses*, 2<sup>nd</sup> Edition, Jones and Bartlett Learning, 2013. (RC114.5.S559 2013)

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

**BS4009 BIOLOGY OF AGING**

Subject Coordinator : Asst Prof Esther Wong

**Prescribed Textbooks**

Masoro EJ and Austad SN, *Hand book of the biology of aging*, 7<sup>th</sup> Edition, 2010. (Call No. : QP86.H236 2011, E-book)



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Guarente, L., Partridge, L. and Wallace, D., *Molecular biology of aging*, 2008. (QP86.M718)

**BS4010 SYNTHETIC BIOLOGY**

Subject Coordinator : Assoc Prof Gao Yonggui

Prescribed textbooks:

Zhao H., *Synthetic Biology: Tools and Applications*, Academic Press, 2013

Hamilton, E.R, Morales M.L., *Synthetic Biology: Prospects and Implications (Biotechnology in Agriculture, Industry, and Medicine)*, Nova Science Pub Inc; 1<sup>st</sup> Edition (September 25, 2012)

Schmidt M., *Synthetic Biology: Industrial and Environmental Applications*, Wiley-Blackwell Press, 2012

**BS4011 BIOLOGY OF SOCIAL BEHAVIOR [New Course]**

Subject Coordinator : Asst Prof Ajai Vyas

Prescribed Textbooks

Edward O. Wilson, *The Social Conquest of Earth*, 1 Edition, Liverright, April 2013.  
[ISBN-10: 0871403633, ISBN-13: 978-0871403636]

Edward O. Wilson, *The Meaning of Human Existence*, 1 Edition, Liverright, October 2014.  
[ISBN-10: 0871401002, ISBN-13: 978-0871401007]

**ELECTIVES**

**BS0001 BIOLOGY AND SOCIETY**

Subject Coordinator : Dr Kenneth Yu

Prescribed Text

Minkoff, Eli C., *Biology today: an issues approach*, 3<sup>rd</sup> Edition, Garland Pub., 2004 (Call no: QH315.M665 2004)

**BS8001 HUMAN BODY FUNCTION AND DISEASE**

Subject Coordinator : Dr Peter Cheung

Prescribed Text

Hartwell, Leland et. Al, *Genetics: from genes to genomes*, 4<sup>th</sup> Edition, McGraw-Hill, 2011  
(Call no: QH430.G328G 2011)

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Lauralee Sherwood, *Human Physiology*, 5<sup>th</sup> Edition, Thomson Brooks Cole, International Edition.

Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter, *Molecular Biology of the Cell*, 5<sup>th</sup> Edition, Garland Science.

**References**

Yashon, Ronnee K., *Human genetics and society*, 2<sup>nd</sup> Edition, Brooks/Cole, 2012 (QH438.7.Y29)

**BS8003 SCIENCE OR FICTION? - BIOLOGY IN POPULAR MEDIA**

Subject Coordinator: Dr Sze Chun Chau

**References**

Mader, Sylvia S., *Biology*, 12<sup>th</sup> Edition, McGraw-Hill, 2015.

Mader, Sylvia S., *Inquiry into life*, 14<sup>th</sup> Edition, McGraw-Hill, 2014.