

NANYANG TECHNOLOGICAL UNIVERSITY
SCHOOL OF BIOLOGICAL SCIENCES

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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)

William S. Klug, Michael R. Cummings, Charlotte A. Spencer, Michael A. Palladino; *Essentials of Genetics*, 9th Edition, Standalone book, Pearson, 2015, ISBN-10: 0134047796 and 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*, 6th Edition, Garland Science, 2015
(Call No: QH581.2.M718 2015)

Harvey Lodish, Arnold Berk, Chris A. Kaiser, Monty Krieger, Anthony Bretscher, Hidde Ploegh, Angelika Amon, Kelsey C. Martin, *Molecular Cell Biology*, 8th Edition, W. H. Freeman; 2016.
ISBN-10: 1464183392 and 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)

BS1008 BIOSTATISTICS

Subject Coordinator: Asst Prof Lu Lanyuan

Prescribed Textbooks

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

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)

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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)

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, *Molecular Cell Biology*, 8th Edition, W. H. Freeman; 2016. ISBN-10: 1464183392 and ISBN-13: 978-1464183393

Gerald Karp, *Cell and Molecular Biology: Concepts and Experiments*, 8e Binder Ready Version + WileyPLUS Learning Space Registration Card 8th Edition, Wiley (WileyPLUS Products); 2016. ISBN-10: 1119231515 and ISBN-13: 978-1119231516

BS2007 IMMUNOLOGY

Subject Coordinator: Assoc Prof Christiane Ruedl

Prescribed Textbook

Kenneth P. Murphy, *Janeway's immunobiology*, 9th Edition, Garland Science, 2017
(Call no: QR181.M978 2017)

Other Reference

Abul K. Abbas MBBS, Andrew H. H. Lichtman MD PhD, Shiv Pillai MBBS PhD, *Cellular and Molecular Immunology*, 9th Edition, Elsevier; 2017. ISBN-10: 0323479782 and ISBN-13: 978-0323479783

BS2008 EXPERIMENTAL MOLECULAR & CELL BIOLOGY

Subject Coordinator: Dr Kenneth Yu

Prescribed Textbook

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

Other Reference

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Robert H. Reed, *Practical skills in biomolecular sciences*, 4th Edition, Pearson Education, 2013 (Call no: QH506.P895 2013)

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

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BS2014 MICROBIAL BIOTECHNOLOGY

Subject Coordinator: Asst Prof Yang Liang

Prescribed Textbook

E. M. T. El-Mansi, C. F. A. Bryce, Arnold L. Demain, A.R. Allman, *Fermentation Microbiology and Biotechnology*, 3rd Edition, Published by CRC Press, 2012
(Call no: TP248.27.M53F359f 2012)

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)

David Elliott, Michael Ladomery, *Molecular Biology of RNA*, 2nd Edition, Oxford University Press; 2016. ISBN-10: 0199671397 and 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: Prof Sten Albert Ohlson

References

C. Shimasaki, *Biotechnology entrepreneurship : starting, managing, and leading biotech companies*, 1st Edition, Academic Press, 2014. (E-book)

H.Patzelt and T. Brenner, *Handbook of Bioentrepreneurship (International Handbook Series on Entrepreneurship)*, Springer New York, 2008. (E-book)

J. Kapeleris and D. Hine, *Innovation and entrepreneurship in biotechnology, an international perspective : concepts, theories and cases*, Edward Edgar Publishing, 2006.
(Call no: HD9999.B442H662)

P. Dobers and S. Wikander, *BioNova: Building a Biotech Company*, Student literature, 2004

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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*, 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)

BS3010 CURRENT TOPICS IN STEM CELL AND DEVELOPMENTAL BIOLOGY

Subject Coordinator: Prof Klaus Karjalainen

Textbook: Nil

BS3011 PROTEIN FOLDING AND BIOMOLECULAR NMR

Subject Coordinator: Assoc Prof Surajit Bhattacharyya

Prescribed Textbooks

Roger H. Pain, *Mechanisms of protein folding*, 2nd Edition, Oxford University Press, 2000. (Call no: QP551.M486)

Jeremy N. S. Evans, *Biomolecular NMR spectroscopy*, Oxford University Press, 1995. (Call no: QP519.9.N83E92)

Other References

Thomas E. Creighton, *Protein folding*, W.H. Freeman and Co., 1992. (Call no: QP551.P967F)

Alan Fersht, *Structure and mechanism in protein science: a guide to enzyme catalysis and protein folding*, W.H. Freeman, 1999. (Call no: QD431.25.S85F399)

Kurt. Wüthrich, *NMR of proteins and nucleic acids*, Wiley, 1986. (Call no: QP519.9.N83W973)

Andrew E. Derome, *Modern NMR techniques for chemistry research*, 1st Edition, Pergamon Press, 1987. (Call no: QD96.N8D437)

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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)

Graham Patrick, An Introduction to Medicinal Chemistry, 6th Edition, Oxford University Press; 2017. ISBN-10: 0198749694 and ISBN-13: 978-0198749691

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

BS3015 The RNA World

Subject Coordinator: Asst Prof Francesc Xavier Roca Castella

Prescribed Textbooks

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

John F. Atkins, *RNA worlds: from life's origins to diversity in gene regulation*, Cold Spring Harbor Laboratory Press, 2011 (Call no: QH450.R627rw)

Other Reference

James E. Darnell, *RNA: life's indispensable molecule*, Cold Spring Harbor Laboratory Press, 2011. (Call no: QP623.D223)

BS3017 ADVANCED MICROBIAL PATHOGENESIS

Subject Coordinator: Asst Prof Kimberly Kline

Prescribed Textbook

Wilson B.A., *Bacterial pathogenesis: a molecular approach*, 3rd Edition, ASM Press, 2011.
(Call no: QR201.B34S186 2011)

Reference

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

BS3019 NEUROPSYCHOLOGY OF STRESS AND RESILIENCE

Subject Coordinator: Asst Prof Rupshi Mitra

Prescribed Textbook

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

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BS3022 PROTEIN TRAFFICKING

Subject Coordinator: Asst Prof Guillaume Thibault / Asst Prof Wang Xiaomeng (LKCSOM)

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)

BS3023 REGULATORY CONTROL OF HEALTHCARE PRODUCTS AND MEDICAL DEVICES

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

References

Jonathan S. Kahan, Hogan Lovells US LLP, *Medical Device Development: Regulation and Law*, 3rd Edition, Barnett International, 2014. (Call no: KF3827.M4K12)

Rosemary Hawkins, *Medical Device Approval and Regulation in 16 Countries: Brief Overviews*, Nova Science Publishers, 2016. (Call no: K3611.M45M489, E-copy)

Carl T. DeMarco, *Medical Device Design and Regulation*, ASQ Quality Press, 2011.
(Call no: R856.D372M + 1 CD, E-copy)

Mindy J. Allport-Settle, *Current Good Manufacturing Practices: Pharmaceutical, Biologics, and Medical Device Regulations and Guidance Documents*, PharmaLogika, 2009.
(Call no: KF70.A3A441)

Jean-Pierre Boutrand, *Biocompatibility and Performance of Medical Devices*, Woodhead Pub Limited, 2012. (Call no. R857.M3B615c)

Medical devices – Application of risk management to medical devices, 2nd Edition, Geneva, 2007. (Call No. QC100.I85 ISO14971-2007 (E))

Medical devices - Quality management systems – Requirements for regulatory purposes, 3rd Edition, ISO, 2016. (Call No. QC100.I85 ISO13485-2016 (E))

Shayne Cox Gad, Samantha Gad-McDonald, *Biomaterials, Medical Devices, and Combination Products: Biocompatibility Testing and Safety Assessment*, CRC Press Taylor & Francis, 2016.
ISBN-13: 978-1482248371 and ISBN-10: 1482248379

Daniel Shoukier, *MDR Compendium – The New European Medical Device Regulation*, BellingsBooks Publishing House, 2017. ISBN: 978-3-9523794-1-7

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BS3025 NMR IN STRUCTURAL BIOLOGY [New Course]

Subject Coordinator: Assoc Prof Konstantin Pervushin

Textbook: Nil

BS3027 SPECTROSCOPIC METHODS IN BIOMEDICAL STRUCTURAL BIOLOGY [New Course]

Subject Coordinator: Assoc Prof Jaume Torres

References

Creighton, Thomas E., *The physical and chemical basis of molecular biology*, Helvetian Press; Eastbourne, East Sussex, U.K. : Distributed by Gardners Books, c2010.2010 Helvetian Press (Firm) Accession Number: ntu.750369; ISBN-13: 978-0956478139

Charles R. Cantor, Paul R. Schimmel. Cantor, Charles R. San Francisco, *Biophysical chemistry (Part II)*, W. H. Freeman, c1980. v. : ill. ; 24 cm. Language: English, Database: NTU Library Catalogue; ISBN-13: 978-0716711902

Barbara H. Stuart, *Infrared Spectroscopy: Fundamentals and Applications*, John Wiley & Sons, Ltd, 2004. DOI: 10.1002/0470011149; Book Series: Analytical Techniques in the Sciences; Series Editor(s): David J. Ando; ISBN: 978-0-470-85428-0

M. Hof, R. Hutterer, V. Fidler. Berlin, *Fluorescence spectroscopy in biology : advanced methods and their applications to membranes, proteins, DNA, and cells*, volume editors, New York : Springer, c2005.; Springer series on fluorescence; 3; Accession Number: ntu.385596; Database: NTU Library Catalogue; ISBN: 978-3-540-22338-2 (Print) 978-3-540-27004-1 (Online)

Joseph R. Lakowicz, *Principles of Fluorescence Spectroscopy*, 3rd Edition, Springer eBooks, 2006. ISBN: 978-0-387-31278-1 (Print) 978-0-387-46312-4 (Online)

Gardiner, Derek J, Dr. Pierre R. Graves, *Practical Raman Spectroscopy*, Springer eBooks, 1989. ISBN: 978-3-540-50254-8 (Print) 978-3-642-74040-4 (Online)

BS3028 CHEMICAL BIOLOGY

Subject Coordinator: Assoc Prof Liang Zhao-Xun

Textbook: Nil

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BS3030 TELOMERE BIOLOGY: GENOME STABILITY, CANCER AND AGEING [New Course]

Subject Coordinator: Asst Prof Sara Sandin

Textbook: Nil

ELECTIVES

BS8001 HUMAN BODY FUNCTION AND DISEASE

Course 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.

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BS8101 EXPLORING THE SCIENCE OF GOOD EATING EXPERIENCE

Subject Coordinator: Dr Sze Chun Chau

Prescribed Textbook

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

Barbara Scheule Ph.D. RD, Marion Bennion, *Introductory Foods*, 14th Edition, Pearson, 2014.
ISBN-10: 0132739275 and 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)