NUS School of Computing
Master of Computing (General Track) - Essential Courses
AY2023/2024, Semester 1

Course Code & Title	Lecture Day/Period	Time	Venue	Remarks	Exam
IT5001 Software Development Fundamentals Lecturer: Rajendra Prasad and Alan Cheng	Wednesday [16 Aug 2023 - 27 Sep 2023]	4pm - 6pm	**LECTURE** (COM3-MPH)	All full-time students will attend both Wed 4pm-6pm and Fri 2pm-3pm lessons.	Saturday, 7 Oct 2023, 5pm - 7pm For exam details, please check with your lecturer and Canvas for announcements.
	Friday [18 Aug 2023 - 29 Sep 2023]	2pm - 3pm	**LECTURE** (COM1-0206)		
	Monday [21 Aug 2023 - 2 Oct 2023]	2pm - 4pm	**LAB** (COM1-B112/ COM1-B109)	Full-time students attending the Wed 4pm-6pm and Fri 2pm-3pm lessons will attend either lab session.	
		4pm - 6pm	**LAB** (COM1-B112/ COM1-B109)		
	Wednesday [16 Aug 2023 - 27 Sep 2023]	6.30pm - 8.30pm	**LECTURE** (I3-AUD)	All part-time students will attend both Wed 6.30pm-8.30pm and Sat 9am-10am lessons.	
	Saturday [19 Aug 2023 - 30 Sep 2023]	9am - 10am	**LECTURE** (COM1-0206)		
	Saturday [19 Aug 2023 - 30 Sep 2023]	10am - 12pm	**LAB** (COM1-B112/ COM1-0120/ COM1-B110/ AS6-0421/ AS6-0426)	Part-time students attending the Wed 6.30pm-8.30pm and Sat 9am-10am lessons will attend this lab session.	
IT5002 Computer Systems and Applications Lecturer: Colin Tan	Tuesday [15 Aug 2023 - 14 Nov 2023]	6.30pm - 9.30pm	**LECTURE** (LT8)	Students are to attend all lectures and labs.	Thursday, 30 Nov 2023, 5pm - 7pm For exam details, please check with your lecturer and Canvas for announcements.
	Saturday [26 Aug 2023 - 18 Nov 2023]	2pm - 4pm	**LAB** (COM1-0206)		
IT5003 Data Structures and Algorithms Lecturer: Steven Halim	Wednesday [4 Oct 2023 - 22 Nov 2023]	6.30pm - 8.30pm	**LECTURE** (I3-AUD)	Students are to attend both Wed and Sat lectures.	Thursday, 7 Dec 2023, 5pm - 7pm For exam details, please check with your lecturer and Canvas for announcements.
	Saturday [7 Oct 2023 - 25 Nov 2023]	9am - 10am	**LECTURE** (I3-AUD)		
	Saturday [7 Oct 2023 - 25 Nov 2023]	10am - 12pm	**LAB** (COM1-B112/ COM1-B110/ COM1-0120/ COM1-0113)	Students may select one lab session to attend.	
	Monday [9 Oct 2023 - 27 Nov 2023]	2pm - 4pm	**LAB** (COM1-B109/ COM1-B110)		
		4pm - 6pm	**LAB** (COM1-B109/ COM1-B110)		
	Friday [6 Oct 2023 - 24 Nov 2023]	2pm - 4pm	**RECITATION** (COM1-0206/ Zoom on 24 Nov)	Optional for students.	

IT5004 Enterprise Systems Architecture Fundamentals *Lecturer: Lek Hsiang Hui*	Monday [14 Aug 2023 - 13 Nov 2023]	9am - 12pm	**LECTURE** (COM1-0206)	Students are to attend all lectures.	There will be no exam for IT5004.
IT5005 Artificial Intelligence *Lecturer: Rajendra Prasad*	Monday [14 Aug 2023 - 13 Nov 2023]	6.30pm - 8.30pm	**LECTURE** (COM1-0206)	Students are to attend all lectures and tutorials.	Wednesday, 29 Nov 2023, 5pm - 7pm For exam details, please check with your lecturer and Canvas for announcements.
		8.30pm - 9.30pm	**TUTORIAL** (COM1-B112/ COM1-B109/ COM1-0120)		
IT5006 Fundamentals of Data Analytics *Lecturer: Ashish Deepak Dandekar*	Friday [18 Aug 2023 - 17 Nov 2023]	6.30pm - 8.30pm	**LECTURE** (COM1-0206)	Students are to attend all lectures and tutorials.	Monday, 4 Dec 2023, 5pm - 7pm For exam details, please check with your lecturer and Canvas for announcements.
	Thursday [24 Aug 2023 - 16 Nov 2023]	6.30pm - 7.30pm	**TUTORIAL** (LT15)		
IT5007 Software Engineering on Application Architecture *Lecturer: Prasanna Karthik Vairam*	Thursday [17 Aug 2023 - 16 Nov 2023]	2pm - 5pm	**LECTURE** (COM3-MPH)	Students are to attend all lectures.	There will be no exam for IT5007.

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NUS School of Computing
Master of Computing (General Track) - Essential Courses
AY2023/2024, Semester 2

Course Code & Title	Lecture Day/Period	Time	Venue	Remarks	Exam
IT5001 Software Development Fundamentals Lecturer: Foo Yong Qi and Alan Cheng	Wednesday [17 Jan 2024 - 28 Feb 2024]	12pm - 2pm	**LECTURE** (COM3-MPH)	All full-time students will attend both Wed 12pm-2pm and Fri 2pm-3pm lessons.	Saturday, 9 Mar 2024, 6.30pm - 8.30pm For exam details, please check with your lecturer and Canvas for announcements.
	Friday [19 Jan 2024 - 1 Mar 2024]	2pm - 3pm	**LECTURE** (COM1-0206)		
	Monday [22 Jan 2024 - 4 Mar 2024]	2pm - 4pm	**LAB** (COM1-0120)	Full-time students attending the Wed 12pm-2pm and Fri 2pm-3pm lessons will attend either lab session.	
		4pm - 6pm	**LAB** (COM1-0120)		
	Wednesday [17 Jan 2024 - 28 Feb 2024]	6.30pm - 8.30pm	**LECTURE** (LT8)	All part-time students will attend both Wed 6.30pm-8.30pm and Sat 9am-10am lessons.	
	Saturday [20 Jan 2024 - 2 Mar 2024]	9am - 10am	**LECTURE** (COM1-0206)		
	Saturday [20 Jan 2024 - 2 Mar 2024]	10am - 12pm	**LAB** (COM1-0120)	Part-time students attending the Wed 6.30pm-8.30pm and Sat 9am-10am lessons will attend this lab session.	
IT5003 Data Structures and Algorithms Lecturer: Steven Halim	Wednesday [6 Mar 2024 - 24 Apr 2024]	6.30pm - 8.30pm	**LECTURE** (LT8)	Students are to attend both Wed and Sat lectures.	Thursday, 9 May 2024, 5pm - 7pm For exam details, please check with your lecturer and Canvas for announcements.
	Saturday [9 Mar 2024 - 27 Apr 2024]	9am - 10am	**LECTURE** (COM1-0206)		
	Saturday [9 Mar 2024 - 27 Apr 2024]	10am - 12pm	**LAB** (COM1-0120)	Part-time students will attend this lab session.	
	Monday [11 Mar 2024 - 29 Apr 2024]	2pm - 4pm	**LAB** (COM1-B112)	Full-time students will attend either lab session.	
		4pm - 6pm	**LAB** (COM1-B112)		
	Friday [8 Mar 2024 - 26 Apr 2024]	2pm - 4pm	**RECITATION** (COM1-0206/ Zoom on 26 Apr)	Optional for students.	
IT5004 Enterprise Systems Architecture Fundamentals Lecturer: Lek Hsiang Hui	Thursday [18 Jan 2024 - 18 Apr 2024]	6.30pm - 9.30pm	**LECTURE** (COM1-0206)	Students are to attend all lectures.	There will be no exam for IT5004.
IT5005 Artificial Intelligence Lecturer: Colin Tan	Tuesday [16 Jan 2024 - 16 Apr 2024]	2pm - 4pm	**LECTURE** (COM1-0206)	Students are to attend all lectures and tutorials.	Tuesday, 30 Apr 2024, 1pm - 3pm For exam details, please check with your lecturer and Canvas for announcements.
		4pm - 5pm	**TUTORIAL** (COM1-0206/ COM1-0210/ COM4 SR31/ COM3-01-19)		

IT5006 Fundamentals of Data Analytics *Lecturer: Ashish Deepak Dandekar*	Monday [15 Jan 2024 - 15 Apr 2024]	9am - 11am	**LECTURE** (LT18)	Students are to attend all lectures and tutorials.	Thursday, 2 May 2024, 1pm - 3pm For exam details, please check with your lecturer and Canvas for announcements.
	Thursday [25 Jan 2024 - 18 Apr 2024]	9am - 10am	**TUTORIAL** (COM1-0206)		
IT5007 Software Engineering on Application Architecture *Lecturer: Prasanna Karthik Vairam*	Tuesday [16 Jan 2024 - 16 Apr 2024]	6.30pm - 9.30pm	**LECTURE** (COM1-0206)	Students are to attend all lectures.	There will be no exam for IT5007.

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NUS School of Computing
Essential Course Descriptions

Course Code & Title	Pre-Requisites[1]	Co-Requisites[2]	Preclusions[3]	Description
Essential Courses				
IT5001 Software Development Fundamentals				This course aims to introduce non-computing students to the principles and concepts of software development at an accelerated pace. Students will be introduced to the basics of programming (control flow, code and data abstraction, recursion, types, OO), development methodology (ensuring correctness, testing, debugging), simple data structures and algorithms (lists, maps, sorting), and software engineering principles. Through hands on assignments and projects, students will learn good software development practices (documentation, style) and experience a typical software engineering cycle.
IT5002 Computer Systems and Applications		IT5001 Software Development Fundamentals		This course aims to introduce non-computing students to (a) the common principles and concepts in computer systems: abstraction, layering, indirection, caching, hierarchical naming, prefetching, pipelining, locking, concurrency; (b) the inner workings of a computing device, including hardware (CPU, memory, disks), operating systems (kernels, processes and threads, virtual memory, files), and applications (Web, databases).
IT5003 Data Structures and Algorithms		IT5001 Software Development Fundamentals		This course introduces non-computing students to efficient computational problem solving in an accelerated pace. Students will learn to formulate a computational problem, identify the data required and come up with appropriate data structures to represent them, and apply known strategies to design an algorithm to solve the problem. Students will also learn to quantify the space and time complexity of an algorithm, prove the correctness of an algorithm, and the limits of computation. Topics include common data structures and their algorithms (lists, hash tables, heap, trees, graphs), algorithmic problem solving paradigms (greedy, divide and conquer, dynamic programming), and NP-completeness.
IT5004 Enterprise Systems Architecture Fundamentals		IT5001 Software Development Fundamentals		This course aims to equip non-computing students with fundamental knowledge in architecting and designing modern Enterprise Systems in organisations that can be reasonably complex, scalable, distributed, component-based and mission-critical. Students will develop an understanding of high-level concepts such as enterprise architecture and software architecture. They will then move on to acquire fundamental systems analysis and design techniques such as object-oriented requirements analysis and design using the Unified Modelling Language.
IT5005 Artificial Intelligence				The study of artificial intelligence, or AI, aims to make machines achieve human-level intelligence. This course provides a comprehensive introduction to the fundamental components of AI, including how problem-solving, knowledge representation and reasoning, planning and decision making, and learning. The course prepares students without any AI background to pursue advanced courses in AI.
IT5006 Fundamentals of Data Analytics	IT5001 Software Development Fundamentals		BT5126 Hands-on with Business Analytics & IS5126 Hands-	This course introduces students to the fundamental concepts in business analytics. They can learn how to apply basic business analytics tools (such as R), and how to effectively use and interpret analytic models and results for making informed business decisions. The course

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				on with Applied Analytics	prepares students without any analytics background to pursue advanced courses in business and data analytics.
IT5007 Software Engineering on Application Architecture	IT5003 Data Structures and Algorithms				To meet changing business needs, this course focuses on flexible and agile software development on modern application architecture. Students learn to design and develop modern applications that support multiple clients across different platforms such as desktop, mobile devices and cloud. The course covers designing (1) website-based front-end software and (2) mobile app front-end that interacts with a common cloud-based backend. The final part involves engineering software for higher-level objectives such as security and performance. Tools and techniques for writing modern software, such as, HTML5, CSS3, React.js, Node.js, MySQL/MongoDB, and Git will be taught.