THE CHINESE UNIVERSITY OF HONG KONG

X and Interdisciplinary Data Analytics Double Major Programme

Lists of Equivalence / Substitution of Courses between CUHK and CUHK(SZ) (Applicable to students admitted in 2023-24 and 2024-25)

(for students admitted by CUHK(SZ))

Note:
Equivalence / Substitution of two courses is not transitive. If Courses A and B are equivalent / substitute, and A and C are also equivalent / substitute, it does not necessarily follow that B and C are equivalent / substitute. Nonetheless, students should not take both courses B and C.

School Package

Courses offered by CUHK(SZ)		Courses offered by CUHK	
ECO2011	Introductory Microeconomics	DOTE1030	Economics for Business Studies I
CSC1001/1003	Introduction to Computer Science: Programming Methodology/ Introduction to Computer Science and Java Programming	ENGG1110	Problem Solving by Programming
MAT1001/1011	Calculus I/Honours Calculus I	MATH1010	University Mathematics

1st Major: Financial Engineering (offered by CUHK(SZ))

Courses offered by CUHK(SZ)		Courses offered by CUHK	
CSC3100	Data Structures	CSCI2100	Data Structures
CSC3150	Operating System	CSCI3150	Introduction to Operating Systems
CSC3170	Introduction to Database Systems	CSCI3170	Introduction to Database Systems
CSC3180	Fundamentals of Artificial Intelligence	CSCI3230	Fundamentals of Artificial Intelligence
DDA3020	Machine Learning	CSCI3220	Algorithms for Bioinformatics
DDA3020	Machine Learning	CSCI3320	Fundamentals of Machine Learning
DDA3020	Machine Learning	STAT4001	Data Mining and Statistical Learning
DDA4210	Advanced Machine Learning	RMSC4002	Financial Data Analytics with Machine Learning

ECE4007	Computer and Network Security	IERG4130	Introduction to Cyber Security
ERG3020	Web Analytics and Intelligence	IERG4300	Web-scale Information Analytics
FIN2010	Financial Management	FINA2010	Financial Management
FIN3080	Investment Analysis and Portfolio Management	FINA3080	Investment Analysis and Portfolio Management
FIN3210	FinTech Theory and Practice	SEEM2520	Fundamentals of Financial Engineering
FIN4060	Financial Markets in China and the World	FINA3010	Financial Markets
FIN4080	Behavioral Finance	FINA4400	Behavioral Finance
FIN4110	Options and Futures	FINA4110	Options and Futures
FIN4120	Fixed Income Securities Analysis	FINA4120	Fixed Income Securities Analysis
FMA4800	Financial Computation	SEEM4720	Computational Finance
FTE2001	FinTech Regulation and Legal Policy	FTEC2001	FinTech Regulation and Legal Policy
FTE4003	Data Mining for FinTech	FTEC4003	Data Mining for FinTech
MAT1002/1012	Calculus II/Honours Calculus II	MATH2010	Advanced Calculus I
MAT2002	Ordinary Differential Equations	MATH3270	Ordinary Differential Equations
MAT3007	Optimization	MATH3215	Operations Research
MAT3280	Probability Theory	MATH3280	Introductory Probability
MKT4220	Big Data Marketing	MKTG3060	Big Data Strategy in Marketing
RMS4060	Risk Management with Derivatives	SEEM3580	Risk Analysis for Financial Engineering
RMS4060	Risk Management with Derivatives	RMSC4007	Risk Management with Derivatives Concepts
STA2002/2002H	Probability and Statistics II/ Honours Probability and Statistics II	STAT2006	Basic Concepts in Statistics and Probability II
STA4001	Stochastic Processes	MATH4240	Stochastic Processes
STA4003	Time Series	STAT4005	Time Series

1st Major: Marketing and Communication (offered by CUHK(SZ))

Courses offered by CUHK(SZ)		Courses offered by CUHK	
ACT2111	Introductory Financial Accounting	ACCT2111	Introductory Financial Accounting
FIN2010	Financial Management	FINA2010	Financial Management
MGT3010	Organizational Behavior	MGNT3010	Organizational Behaviour

MGT4187	Managerial Analytics	MGNT3080	Analytics for Management
MKT2010	Marketing Management	MKTG2010	Marketing Management
MKT3020	Consumer Behavior	MKTG3020	Consumer Behaviour
MKT3030	Integrated Marketing Communication	MKTG3030	Integrated Marketing Communication
MKT3310	Marketing Analytics	MKTG4090	Marketing Analytics
MKT4020	e-tailing and Retailing	MKTG4020	Retail and Channel Management
MKT4030	Service Marketing	MKTG4030	Service Marketing
MKT4040	Strategic Marketing	MKTG4040	Strategic Marketing
MKT4080	Digital and Social Media Marketing Strategy	MKTG4180	Social Media Analytics
MKT4110	Strategic Brand Management	MKTG4110	Strategic Brand Management
MKT4120	Marketing Research	MKTG3010	Marketing Research
MKT4150	Pricing Strategy	MKTG4160	Pricing
MKT4220	Big Data Marketing	MKTG3060	Big Data Strategy in Marketing

1st Major: Computer Science and Engineering (offered by CUHK(SZ))

Courses offered by CUHK(SZ)		Courses offered by CUHK	
CSC2003	Introduction to Java Programming	CSCI1530	Computer Principles and Java Programming
CSC3002	C/C++ Programming	CSCI1120	Introduction to Computing Using C++
CSC3100	Data Structures	CSCI2100	Data Structures
CSC3050	Computer Architecture	AIST3020	Introduction to Computer Systems
CSC3050	Computer Architecture	CENG3420	Computer Organization and Design
CSC3150	Operating System	CSCI3150	Introduction to Operating Systems
CSC3160	Fundamentals of Speech and Language Processing	SEEM5330	Speech and Language Processing
CSC3170	Introduction to Database Systems	CSCI3170	Introduction to Database Systems
CSC3180	Fundamentals of Artificial Intelligence	CSCI3230	Fundamentals of Artificial Intelligence
CSC3185	Introduction to Multimedia Systems	SEEM4570	System Design and Implementation
CSC4001	Software Engineering	CSCI3100	Software Engineering

CSC4001	Software Engineering	SEEM3430	Information Systems Analysis and Design
CSC4005	Parallel Programming	CSCI4160	Distributed and Parallel Computing
CSC4051	Computing Capstone for Interdisciplinary Studies	SEEM4998	Final Year Project I
CSC4120	Design and Analysis of Algorithms	CSCI3160	Design and Analysis of Algorithms
CSC4130	Introduction to Human-Computer Interaction	SEEM3510	Human-computer Interaction
CSC4140	Computer Graphics	CSCI3260	Principles of Computer Graphics
CSC4150	Mobile Computing with Internet of Things	IERG4230	Introduction to Internet of Things
DDA3020	Machine Learning	CSCI3220	Algorithms for Bioinformatics
DDA3020	Machine Learning	CSCI3320	Fundamentals of Machine Learning
DDA3020	Machine Learning	STAT4001	Data Mining and Statistical Learning
DDA4210	Advanced Machine Learning	RMSC4002	Financial Data Analytics with Machine Learning
DDA4220	Deep Learning and Applications	AIST4010	Foundation of Applied Deep Learning
DDA4230	Reinforcement Learning	CSCI4250	Online Algorithms for Machine Learning and Optimization
ECE4016	Computer Networks	IERG3310	Computer Networks
ECE2050	Digital Logic and Systems	ELEG2201	Digital Circuits and Computing Systems
MAT1002/ 1012	Calculus II/Honours Calculus II	MATH2010	Advanced Calculus I
MAT3007	Optimization	MATH3215	Operations Research

1st Major: Electrical and Computer Engineering (offered by CUHK(SZ))

Courses offered by CUHK(SZ)		Courses offered by CUHK	
CSC3002	C/C++ Programming	CSCI1120	Introduction to Computing Using C++
CSC3050	Computer Architecture	CENG3420	Computer Organization and Design
CSC3100	Data Structures	CSCI2100	Data Structure
CSC3150	Operating Systems	CSCI3150	Introduction to Operating Systems
CSC3180	Fundamentals of Artificial Intelligence	CSCI3230	Fundamentals of Artificial Intelligence

CSC4001	Software Engineering	CSCI3100	Software Engineering
CSC4001	Software Engineering	IERG3080	Information and Software Engineering Practices
CSC4005	Parallel Programming	CSCI4160	Distributed and Parallel Computing
DDA3020	Machine Learning	CSCI3220	Algorithms for Bioinformatics
DDA3020	Machine Learning	CSCI3320	Fundamentals of Machine Learning
ECE1810	Electronic Circuit Design Laboratory	IERG1810	Electronic Circuit Design Laboratory
ECE2001	Basic Circuit Theory	IERG2060	Basic Analog and Digital Circuits
ECE2050	Digital Logic and Systems	ELEG2201	Digital Circuits and Computing Systems
ECE3001	Signals and Systems	IERG2051	Signal and Systems
ECE3050	Principles of Communication Systems	IERG2310	Principles of Communication Systems
ECE3080	Microprocessors and Computer Systems	IERG3060	Microcontrollers and Embedded Systems
ECE3280	Networks: Technology, Economics and Society	IERG3280	Networks: Technology, Economics, and Social Interactions
ECE3510	Digital Signal Processing	ELEG3503	Introduction to Digital Signal Processing
ECE3810	Microprocessor System Design Laboratory	IERG3810	Microcontrollers and Embedded Systems Laboratory
ECE4002	Digital Communications	IERG3010	Digital Communications
ECE4003	Wireless Communication Systems	IERG4100	Wireless Communication Systems
ECE4004	Introduction to Optical Communications	IERG4030	Optical Communications
ECE4010	Machine Intelligence and Applications	CSCI3230	Fundamentals of Artificial Intelligence
ECE4016	Computer Networks	IERG3310	Computer Networks
ECE4180	Network Software Design and Programming	IERG4180	Network Software Design and Programming
ECE4190	Multimedia Coding and Networking	IERG4190	Multimedia Coding and Processing
ECE4300	Systems Designs in Human-Computer Interaction	IERG3320	Social Media and Human Information Interaction

ECE4512	Digital Image Processing	IERG4160	Image Processing and Visual Understanding
MAT1002/1012	Calculus II/Honours Calculus II	MATH2010	Advanced Calculus I
MAT3007	Optimization	MATH3215	Operations Research
MAT4007	Introduction to Cryptography	IERG4150	Introduction to Cryptography
MAT4220	Partial Differential Equation	MATH4220	Partial Differential Equations
STA4001	Stochastic Processes	MATH4240	Stochastic Processes

1st Major: Mathematics and Applied Mathematics (offered by CUHK(SZ))

Courses offered by CUHK(SZ)		Courses offered by CUHK	
FMA4800	Financial Computation	SEEM4720	Computational Finance
MAT1002/1012	Calculus II/Honours Calculus II	MATH2010	Advanced Calculus I
MAT2001	Honours Ordinary Differential Equation	MATH3270	Ordinary Differential Equations
MAT2050	Mathematical Analysis	MATH2050	Mathematical Analysis I
MAT3006	Real Analysis	MATH4050	Real Analysis
MAT3007	Optimization	MATH3215	Operations Research
MAT3040	Advanced Linear Algebra	MATH2040	Linear Algebra II
MAT3220	Optimization II	MATH4230	Optimization Theory
MAT3253	Complex Variables	MATH2230	Complex Variables with Applications
MAT3280	Probability Theory	MATH3280	Introductory Probability
MAT3300	Mathematical Modeling	MATH3290	Mathematical Modeling
MAT4001	Numerical Analysis	MATH3230	Numerical Analysis
MAT4002	Introduction to Geometry and Topology	MATH3070	Introduction to Topology
MAT4004	Graph Theory	MATH3260	Graph Theory
MAT4010	Functional Analysis	MATH4010	Functional Analysis
MAT4033	Differential Geometry	MATH4030	Differential Geometry
MAT4220	Partial Differential Equation	MATH4220	Partial Differential Equations
MAT4240	Numerical Methods for Differential Equations	MATH3240	Numerical Methods for Differential Equations
MAT4400	Project	MATH4400	Project
RMS4050	Stochastic Calculus for Finance and Risk	RMSC4005	Stochastic Calculus with Application to Risk
STA4001	Stochastic Processes	MATH4240	Stochastic Processes

1st Major: Statistics (offered by CUHK(SZ))

Courses offered by CUHK(SZ)		Courses offered by CUHK	
CSC3002	C/C++ Programming	CSCI1120	Introduction to Computing Using C++
CSC3100	Data Structures	CSCI2100	Data Structures
CSC3170	Introduction to Database Systems	CSCI3170	Introduction to Database Systems
DDA3020	Machine Learning	CSCI3220	Algorithms for Bioinformatics
DDA3020	Machine Learning	CSCI3320	Fundamentals of Machine Learning
DDA3020	Machine Learning	STAT4001	Data Mining and Statistical Learning
DDA4002	Stochastic Simulation	STAT3006	Statistical Computing
DDA4010	Bayesian Statistics	STAT4010	Bayesian Learning
DDA4210	Advanced Machine Learning	RMSC4002	Financial Data Analytics with Machine Learning
DDA4220	Deep Learning and Applications	AIST4010	Foundation of Applied Deep Learning
DDA4230	Reinforcement Learning	CSCI4250	Online Algorithms for Machine Learning and Optimization
DDA4250	Mathematical Introduction to Deep Learning	STAT4012	Statistical Principles of Deep Learning with Business Applications
ECE2050	Digital Logic and Systems	ELEG2201	Digital Circuits and Computing Systems
MAT1002/1012	Calculus II/Honours Calculus II	MATH2010	Advanced Calculus I
MAT2002	Ordinary Differential Equations	MATH3270	Ordinary Differential Equations
MAT2050	Mathematical Analysis	MATH2050	Mathematical Analysis I
MAT3006	Real Analysis	MATH4050	Real Analysis
MAT3007	Optimization	MATH3215	Operations Research
MAT3040	Advanced Linear Algebra	MATH2040	Linear Algebra II
MAT3220	Optimization II	MATH4230	Optimization Theory
MAT3280	Probability Theory	MATH3280	Introductory Probability
RMS4001	Simulation Methods for Risk Management and Finance	RMSC4001	Simulation Methods for Risk Management Science and Finance
RMS4050	Stochastic Calculus for Finance and Risk	RMSC4005	Stochastic Calculus for Finance and Risk
RMS4060	Risk Management with Derivatives	SEEM3580	Risk Analysis for Financial Engineering
RMS4060	Risk Management with Derivatives	RMSC4007	Risk Management with Derivatives Concepts

STA2002/2002H	Probability and Statistics II/ Honours Probability and Statistics II	STAT2006	Basic Concepts in Statistics and Probability II
STA3001	Linear Models	STAT3008	Applied Regression Analysis
STA3005	Statistical Computing	STAT2005	Programming Languages for Statistics
STA3007	Nonparametric Statistics	STAT3005	Nonparametric Statistics
STA3020	Statistical Inference	STAT4003	Statistical Inference
STA4001	Stochastic Processes	MATH4240	Stochastic Processes
STA4002	Multivariate Statistical Analysis	STAT4002	Applied Multivariate Analysis
STA4003	Time Series	STAT4005	Time Series
STA4005	Survival Modelling	STAT4008	Survival Modelling
STA4020	Statistical Modelling in Financial Markets	RMSC4003	Statistical Modelling in Financial Markets
STA4030	Categorical Data Analysis	STAT4006	Categorical Data Analysis
STA4050	Statistical Capstone	STAT4011	Statistical Projects
STA4100	Statistical Inference II	STAT4003	Statistical Inference

2nd Major: Interdisciplinary Data Analytics – Required Courses

Courses offered by CUHK		Courses offered by CUHK(SZ)	
DOTE1040	Economics for Business Studies II	ECO2021	Basic Macroeconomics
ENGG2440	Discrete Mathematics for Engineers	CSC3001	Discrete Mathematics
MATH1030	Linear Algebra I	MAT2040	Linear Algebra
MGNT1020	Management	MGT2020	Principles of Management
STAT2001	Basic Concepts in Statistics and Probability I	STA2001/2001H	Probability and Statistics I/Honours Probability and Statistics I
SEEM2460	Introduction to Data Science	DDA2001	Introduction to Data Science

2nd Major: Interdisciplinary Data Analytics – Elective Courses (covering all areas)

Please refer to the study scheme for the elective courses specific to each area of study.

Courses offered by CUHK		Courses offered by CUHK(SZ)	
CENG3420	Computer Organization and Design	CSC3050	Computer Architecture
CSCI2100	Data Structures	CSC3100	Data Structures
CSCI3100	Software Engineering	CSC4001	Software Engineering

CSCI3160	Design and Analysis of Algorithms	CSC4120	Design and Analysis of Algorithms
CSCI3220	Algorithms for Bioinformatics	DDA3020	Machine Learning
CSCI3230	Fundamentals of Artificial Intelligence	ECE4010	Machine Intelligence and Applications
CSCI3320	Fundamentals of Machine Learning	DDA3020	Machine Learning
CSCI4250	Online Algorithms for Machine Learning and Optimization	DDA4230	Reinforcement Learning
DOTE4280	Network and Security	ECE4007	Computer and Network Security
ELEG2201	Digital Circuits and Computing Systems	ECE2050	Digital Logic and Systems
FINA3080	Investment Analysis and Portfolio Management	FIN3080	Investment Analysis and Portfolio Management
FINA4110	Options and Futures	FIN4110	Options and Futures
FINA4120	Fixed Income Securities Analysis	FIN4120	Fixed Income Securities Analysis
IERG2051	Signals and Systems	ECE3001	Signals and Systems
IERG2060	Basic Analog and Digital Circuits	ECE2050	Digital Logic and Systems
IERG2310	Principles of Communication Systems	ECE3050	Principles of Communication Systems
IERG3080	Information and Software Engineering Practice	CSC4001	Software Engineering
IERG3280	Networks: Technology, Economics, and Social Interactions	ECE3280	Networks: Technology, Economics and Society
IERG3310	Computer Networks	ECE4016	Computer Networks
IERG3320	Social Media and Human Information Interaction	ECE4300	Systems Designs in Human-Computer Interaction
IERG4230	Introduction to Internet of Things	CSC4150	Mobile Computing with Internet of Things
IERG4300	Web-scale Information Analytics	ERG3020	Web Analytics and Intelligence
MATH2010	Advanced Calculus I	MAT1002 /1012	Calculus II/Honours Calculus II
MATH3215	Operations Research	MAT3007	Optimization
MATH3230	Numerical Analysis	MAT4001	Numerical Analysis
MATH3240	Numerical Methods for Differential Equations	MAT4240	Numerical Methods for Differential Equations
MATH3270	Ordinary Differential Equations	MAT2001	Honours Ordinary Differential Equation
MATH3280	Introductory Probability	MAT3280	Probability Theory
MATH3290	Mathematical Modeling	MAT3300	Mathematical Modeling

MATH3320	Foundation of Data Analytics	DDA3020	Machine Learning
MATH4240	Stochastic Processes	STA4001	Stochastic Processes
MATH4250	Game Theory	MAT3250	Introduction of Mathematical Game Theory
MGNT3010	Organizational Behavior	MGT3010	Organizational Behavior
MKTG3010	Marketing Research	MKT4120	Marketing Research
MKTG3020	Consumer Behaviour	MKT3020	Consumer Behavior
MKTG3030	Integrated Marketing Communication	MKT3030	Integrated Marketing Communication
MKTG3060	Big Data Strategy in Marketing	MKT4220	Big Data Marketing
MKTG4030	Service Marketing	MKT4030	Service Marketing
MKTG4040	Strategic Marketing	MKT4040	Strategic Marketing
RMSC4003	Statistical Modelling in Financial Markets	STA4020	Statistical Modelling in Financial Markets
SEEM2520	Fundamentals of Financial Engineering	FIN3210	FinTech Theory and Practice
SEEM3430	Information Systems Analysis and Design	CSC4001	Software Engineering
SEEM3580	Risk Analysis for Financial Engineering	RMS4060	Risk Management with Derivatives
SEEM4630	E-Commerce Data Mining	CSC4008	Techniques for Data Mining
SEEM4730	Statistics Modeling and Analysis in Financial Engineering	FMA4200	Financial Data Analysis
SEEM4730	Statistics Modeling and Analysis in Financial Engineering	STA4020	Statistical Modelling in Financial Markets
SEEM4750	Advances in Logistics and Supply Chain Management	MGT4270	Current and Regional Issues in Supply Chain and Logistics Management
STAT2005	Programming Languages for Statistics	STA3005	Statistical Computing
STAT2006	Basic Concepts in Statistics and Probability II	STA2002/ 2002H	Probability and Statistics II/Honours Probability and Statistics II
STAT3005	Nonparametric Statistics	STA3007	Nonparametric Statistics
STAT3008	Applied Regression Analysis	STA3001	Linear Models
STAT4001	Data Mining and Statistical Learning	DDA3020	Machine Learning
STAT4003	Statistical Inference	STA3020	Statistical Inference
STAT4005	Time Series	STA4003	Time Series
Note: Subject area code “DSME” changed to “DOTE” with effect from 2024-25.			