For students entering into senior year places, the minimum unit requirement is 69.

University core requirements:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>English (9 units)</td>
<td>Exempt 4 units. Students will be required to take Year 2 (3-unit) and Year 3 (2 unit) English courses</td>
<td></td>
</tr>
<tr>
<td>Chinese (6 units)</td>
<td>Exempt 6 units</td>
<td></td>
</tr>
<tr>
<td>UGE (15 units)</td>
<td>Exempt 9 units. Students will be required to take one 3-unit GE foundation course and one UGEA course</td>
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</tr>
<tr>
<td>CGE (6 units)</td>
<td>Exempt 3-4 units, depending on college affiliation</td>
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</tr>
<tr>
<td>IT (1 unit)</td>
<td>Exempt 1 unit</td>
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</tr>
<tr>
<td>PE (2 units)</td>
<td>Exempt 1 unit</td>
<td></td>
</tr>
</tbody>
</table>

Total unit exemption: 24/25 for SYSU2+2 students

**Major Programme Requirement for SYSU2+2 Students**

Students are required to complete a minimum of 52 units of courses as follows:

1. Faculty Package:  
   ENGG2601, 2602  
   Units: 3

2. Foundation Mathematics Courses:  
   ENGG1410/ESTR1004, ENGG2420/ESTR2000, ENGG2470/ESTR2012  
   Units: 9

3. Required Courses:  
   (a) CSCI1140, CSCI2100/ESTR2102, ENGG2310/ESTR2300, IERG2051/ESTR2302, IERG3060, 3080, 3310, 3800, 3810, 3820  
   (b) Research Component Courses[a]:  
       IERG4998/ESTR4998, IERG4999/ESTR4999  
   Units: 28

4. Elective Courses[b]:  
   Out of 12 Elective Course units, at least 9 units should be from the following major courses:  
   CSCI3150/ESTR3102, ENGG1820, ENGG4030/ESTR4300, IERG3010/ESTR3300, IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG3320/ESTR3306, IERG3830, IERG4030, IERG4080/ESTR4312, IERG4090/ESTR4302, IERG4100/ESTR4304, IERG4110/ESTR4314, IERG4130/ESTR4306, IERG4160, IERG4180/ESTR4308, IERG4190, 4210, 4220, 4230, IERG4330/ESTR4316, IERG4831, 4841, 5020, IERG5040/ENGG5392, IERG5090, IERG5100/ENGG5303, IERG5130, 5140, IERG5154/ENGG5301, IERG5200, IERG5240/ENGG5383, IERG5270, 5280, 5290,  
   Units: 12
IERG5300/ENGG5302, IERG5310, 5320, 5330

The remaining units, if any, can be fulfilled by any
BMEG/CENG/CSCI/ELEG/ENER/ENGG/ESTR/MAEG/SEEM
course(s) at 3000 and above level.

Streams
Students may choose not to specialize in any stream or to specialize in one or
more of the five streams and complete a minimum of 12 units of courses
prescribed by the stream.

Big Data: Systems and Applications
CSCI3320, 4180, 4190, ELEG5491, ENGG4030/ESTR4300 (required),
IERG3320/ESTR3306, IERG4080/ESTR4312, IERG4160, 4230,
IERG4330/ESTR4316

Communications
IERG3010/ESTR3300, IERG3280/ESTR3302, IERG3300/ESTR3304,
IERG4030, IERG4100/ESTR4304, IERG4110/ESTR4314,
IERG4130/ESTR4306, IERG4230, 5020, IERG5040/ENGG5392,
IERG5100/ENGG5303, IERG5200, 5280, 5330

Cyber Security
CSCI3150/ESTR3302, IERG4130/ESTR4306 (required), IERG4210, 4220,
IERG5240/ENGG5383, IERG5310, 5320

Internet Engineering
CSCI3150/ESTR3102 (required), IERG3050, IERG3280/ESTR3302,
IERG3300/ESTR3304, IERG4080/ESTR4312, IERG4090/ESTR4302,
IERG4130/ESTR4306, IERG4180/ESTR4308, IERG4190, 4210, 4831, 4841,
5090, 5270, 5280

Enrichment
CSCI3160/ESTR3104, ENGG4030/ESTR4300, IERG3010/ESTR3300,
IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4100/
ESTR4304, IERG4190, IERG5154/ENGG5301, IERG5200, 5270, 5290,
IERG5300/ENGG5302

Total: 52

In addition to fulfilling the above Major Programme Requirement, students may also challenge
themselves by taking the following stream offered by the Faculty:

Engineering Leadership, Innovation, Technology and Entrepreneurship (ELITE) Stream[c]
Elective Courses:
15 units of courses[d]:
i) 12 units of ESTR courses of which at most 6 units of courses at 1000 or 2000 level
and at least 6 units of courses at 3000 or 4000 level
ii) 3 units of BMEG/CENG/CSCI/ELEG/ENER/ENGG/IERG/MAEG/SEEM courses at 5000
level

Explanatory Notes:
1. BMEG/CENG/CSCI/ELEG/ENER/ENGG/ESTR/IERG/MAEG/SEEM required and
major elective courses at 2000 and above level will be included in the calculation of
Suggested study plan:

**First Year**

<table>
<thead>
<tr>
<th>1st semester</th>
<th>2nd semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>Course</td>
</tr>
<tr>
<td>ENGG2420 / ESTR2000 [a]</td>
<td>Complex Analysis and Differential Equations for Engineers</td>
</tr>
<tr>
<td>CSCI1140 [a]</td>
<td>Programming Laboratory</td>
</tr>
<tr>
<td>IERG3310</td>
<td>Computer Networks</td>
</tr>
<tr>
<td>ENGG2310/ESR2300</td>
<td>Principles of Communication Systems</td>
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<tr>
<td>IERG3820</td>
<td>Communications Lab</td>
</tr>
<tr>
<td>UGFH1000/UGFN1000</td>
<td>University General Education Foundation Course</td>
</tr>
<tr>
<td></td>
<td>Physical Education</td>
</tr>
</tbody>
</table>

Major GPA for honours classification, excluding courses in Faculty Package, Foundation Science courses as specified by the Programme and Foundation Mathematics courses.

2. Students satisfying all the requirements of a stream (except the ELITE Stream, which will be officially recorded in the academic transcript) will be given a certifying letter upon request. For details, please refer to the Department for information.

[a] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for IERG4998 and 4999.

[b] Details of the entrance and coursework requirements, and declaration procedures for the ELITE Stream can be found at the ELITE website (www.erg.cuhk.edu.hk/elite). Non-ELITE Engineering students may be allowed to take ESTR courses. Students are required to seek approval from their respective Major Programmes for using ESTR courses taken to fulfill the Major Programme Requirement. Details are available at the ELITE website.

[c] Students can use up to 9 units of courses which have been taken to fulfill the requirements of items 1 to 4 above (excluding item 3(b) Research Component Courses) to fulfill the elective requirements of the ELITE Stream. A full list of ESTR courses is available at the ELITE website.

[d] Students can use BMG/CENG/CSCI/ELEG/ENG/IERG/MAEG/SEEM courses at 5000 level to substitute for ESTR courses at 3000 or 4000 level, subject to the approval of the Stream Director and the Associate Dean (Education).

[e] The requirement of at least 3 units of Engineering courses at 5000 level is a requirement for the ELITE Stream only. It should not be interpreted as a requirement of the Major Programme.
<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
<th>Second Year</th>
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<td>3rd semester</td>
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<tr>
<td>IERG4998/ESTR4998</td>
<td>Final Year Project I</td>
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<tr>
<td>IERG3080</td>
<td>Information and Software Engineering Practice</td>
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<tr>
<td>IERG3800 [b]</td>
<td>Information Infrastructure Design Lab</td>
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<td></td>
<td>Major Elective</td>
<td>3</td>
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<tr>
<td></td>
<td>Major Elective</td>
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<tr>
<td></td>
<td>University (UGEA) or College General Education Course</td>
<td>2-3</td>
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<tr>
<td></td>
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<td>15-16</td>
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<table>
<thead>
<tr>
<th>Number of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major Required Courses</strong></td>
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<tr>
<td><strong>Major Electives</strong></td>
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<tr>
<td><strong>College General Education Courses</strong></td>
</tr>
<tr>
<td><strong>University General Education Courses</strong></td>
</tr>
<tr>
<td><strong>English Language Courses</strong></td>
</tr>
<tr>
<td><strong>Physical Education Course</strong></td>
</tr>
<tr>
<td><strong>Free Electives</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Explanatory note:
[a] Students in the CUHK SYSU 2+2 program are strongly advised to apply for exemption of ENGG1410, 2420, 2470, CSCI1140, 2100, and IERG2051. When exemption from a particular course is recognized, students can only be exempted from the course but not the units. Students are required to substitute the exempted courses by major elective courses. They can also use any BMEG/CENG/CSCI/ELEC/SEEM/MAEG/ENER/ENGG/ESTR 3000 or above courses for such substitution.

[b] IERG3800 can also be taken in the summer term of the first year.

Last update: July 2017

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>CHEM1380</td>
<td>Basic Chemistry for Engineers</td>
</tr>
<tr>
<td>CSCI1120/ESTR1100</td>
<td>Introduction to Computing Using C++</td>
</tr>
<tr>
<td>CSCI1130/ESTR1102</td>
<td>Introduction to Computing Using Java</td>
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<tr>
<td>CSCI1140</td>
<td>Programming Laboratory</td>
</tr>
<tr>
<td>CSCI2100/ESTR2102</td>
<td>Data Structures</td>
</tr>
<tr>
<td>CSCI3150/ESTR3102</td>
<td>Introduction to Operating Systems</td>
</tr>
<tr>
<td>CSCI3160/ESTR3104</td>
<td>Design and Analysis of Algorithms</td>
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<tr>
<td>CSCI3320</td>
<td>Fundamentals of Machine Learning</td>
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<tr>
<td>CSCI4180</td>
<td>Introduction to Cloud Computing and Storage</td>
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<td>CSCI4190</td>
<td>Introduction to Social Networks</td>
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<tr>
<td>ELEG5491</td>
<td>Introduction to Deep Learning</td>
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<td>ELTU2014</td>
<td>English for Engineering I</td>
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<td>ELTU3014</td>
<td>English for Engineering II</td>
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<tr>
<td>ENGG1100/ESTR1000</td>
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<td>ENGG1110/ESTR1002</td>
<td>Problem Solving by Programming</td>
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<td>ENGG1310/ESTR1003</td>
<td>Engineering Physics: Electromagnetics, Optics and Modern Physics</td>
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<tr>
<td>ENGG1410/ESTR1004</td>
<td>Linear Algebra and Vector Calculus for Engineers</td>
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<td>ENGG1820</td>
<td>Engineering Internship</td>
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<td>ENGG2310/ESTR2300</td>
<td>Principles of Communication Systems</td>
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<td>ENGG2420/ESTR2000</td>
<td>Complex Analysis and Differential Equations for Engineers</td>
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<td>ENGG2470/ESTR2012</td>
<td>Probability for Engineers</td>
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<td>ENGG2601</td>
<td>Technology, Society and Engineering Practice</td>
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<td>ENGG2602</td>
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<td>ENGG5392</td>
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<td>IERG1810</td>
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<td>Basic Analog and Digital Circuits</td>
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<td>IERG3050</td>
<td>Simulation and Statistical Analysis</td>
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<td>Microcontrollers and Embedded Systems</td>
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<td>IERG3080</td>
<td>Information and Software Engineering Practice</td>
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<td>IERG3280/ESTR3302</td>
<td>Networks: Technology, Economics, and Social Interactions</td>
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<td>Introduction to Stochastic Processes</td>
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<td>IERG3320/ESTR3306</td>
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<td>IERG4030</td>
<td>Optical Communications</td>
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<td>IERG4080/ESTR4312</td>
<td>Building Scalable Internet-based Services</td>
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<td>IERG4999/ESTR4999</td>
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