NON-GRADUATING NON-EXCHANGE PROGRAMME (NGNE)

3.5 + 0.5 + 1 (MComp / PhD)

For January 2021 Intake

https://www.comp.nus.edu.sg/~ngne/

4 September 2020
National University of Singapore

Founded in 1905, the National University of Singapore (NUS) is a world leading autonomous research university in Singapore.

As a century-old university, NUS is ranked consistently as one of the top universities. NUS is ranked 11th in the world, based on the QS World University Rankings 2021.

NUS has a total of 17 faculties and schools, 11 overseas colleges, 30 university-level research institutes and centres, with more than 40,000 students from over 100 countries.

Website: www.nus.edu.sg
NUS Campus

Stephen Riady Centre

Study Corner

University Town

Education Resource Centre
The School of Computing (SoC), established in 1998, is ranked 12th in the world, and 1st in Asia, in the field of computer science and information systems, based on the QS World University Rankings 2020.

- **Departments**
  - Computer Science
  - Information Systems and Analytics

- **Staff**
  - 109 (Teaching)
  - 118 (Research)

- **Student**
  - 3500 (Undergraduate)
  - 700 (Postgraduate)

**Website:**
[https://www.comp.nus.edu.sg/](https://www.comp.nus.edu.sg/)
What is NGNE?

- The Non-Graduating Non-Exchange Programme (NGNE) is a programme designed for **final year students** to get a taste of a different education system by immersing themselves in one of the world leading universities.

- In general, students will spend **one semester (or two in some cases)** in NUS attending classes and experiencing the life of a typical SoC undergraduate, with the opportunity to enjoy special computing resources and lab space offered by SoC.

- NGNE is a favourable platform if you wish to apply to the **SoC Graduate Programme**, as students who meet certain requirements in this programme may be given a direct admission to the SoC Graduate Programme.

Website: [http://www.nus.edu.sg/registrar/prospective-students/non-graduating/coursework](http://www.nus.edu.sg/registrar/prospective-students/non-graduating/coursework)
NGNE (3.5+0.5+1)
# NGNE Programme

3.5 + 0.5 + 1 (MComp / PhD)

<table>
<thead>
<tr>
<th>Duration</th>
<th>January – May</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place</td>
<td>National University of Singapore, School of Computing</td>
</tr>
<tr>
<td>Merits</td>
<td></td>
</tr>
<tr>
<td>1. Utilization of Credits</td>
<td>Level-4000 modules taken in the NGNE programme can be used to fulfill MComp credit requirement</td>
</tr>
<tr>
<td>2. Admission to Master Programme, opportunity to PhD Programme</td>
<td>Students who meet certain requirements in NGNE programme will be given prior offer to Master Programme; students who perform exceptionally well in NGNE stand a chance to be offered to the PhD programme</td>
</tr>
<tr>
<td>3. Graduate Programme Dissertation</td>
<td>Students could extend their Independent Project topic as their Graduate Programme dissertation.</td>
</tr>
</tbody>
</table>
Important Announcement

• NGNE for the period of January to May 2021 is now open for application.

• Kindly note that due to the COVID-19 situation, we are keeping a close eye on the latest border control measures in Singapore and any possible impact on students’ ability to secure a Student’s Pass (Visa).

• In the event that border control measures prevent students from entering Singapore, we will inform all applicants as soon as possible.

• Applicants are encouraged to be flexible with your study arrangement for the period of January to May 2021 and have back-up options just in case you are not allowed entry into Singapore.
Application — Students from partnering school/college

• SoC will work with partnering schools/colleges in the screening process of Pre-Consideration

• Unless SoC has separate arrangement with your school/college, by default, students should submit the following documents to ngne@comp.nus.edu.sg for Pre-Consideration before 18 September 2020 (for January 2021 intake):
  ✓ Application form (to be downloaded from NGNE official website: https://www.comp.nus.edu.sg/~ngne/Application%203.htm#PreConsideration)
  ✓ Academic transcript in English
  ✓ An official certification of GPA and/or average score from home school, if GPA and/or average score is not shown in the transcript
  ✓ NUS SoC Summer Workshop transcript (if any)
  ✓ English qualifications (CET6, TOEFL or IELTS, either one of them)
  ✓ CV in English
  ✓ Certificates of awards or achievements (if any)

• Please combine all the documents (except application form) into one pdf file — for application form, please send it to us in its original excel format
Application
– Students NOT from partnering school/college

- Students who are not from partnering school/college but have attended 2018 or 2019 NUS SoC Summer Workshop may also apply for NGNE

- Please submit the following documents to ngne@comp.nus.edu.sg for Pre-Consideration before 18 September 2020 (for January 2021 intake):
  ✓ Application form (to be downloaded from NGNE official website: https://www.comp.nus.edu.sg/~ngne/Application%203.htm#PreConsideration)
  ✓ Academic transcript in English
  ✓ An official certification of your GPA and/or average score from your school, if your GPA and/or average score is not shown in the transcript
  ✓ NUS SoC Summer Workshop transcript
  ✓ English qualifications (CET6, TOEFL or IELTS, either one of them)
  ✓ CV in English
  ✓ Certificates of awards or achievements (if any)
  ✓ Approval Letter from your home university stating its endorsement for your participation in the NGNE programme if officially approved by NUS

- Please combine all the documents (except application form) into one pdf file – for application form, please send it to us in its original excel format
Pre-Approval

- All students should receive notification of **Pre-Approval** if you are successful in the Pre-Consideration stage
- You **MUST** receive Pre-Approval from NUS SoC before you can submit application at the NUS online application portal

CV submission for Pre-Consideration

- CV is the most important document for Pre-Consideration
- NGNE coordinator will assign Independent Project topics based on students’ CV
- CV should include:
  - Academic performance
  - English proficiency
  - Any awards and achievements
  - Working/project experience
  - Interest areas and future plans
  - Other useful materials
Are you a student from a partnering school/college?

Yes

No, but attended 2018 or 2019 NUS SoC Summer Workshop

PRE-CONSIDERATION
Email required documents to ngne@comp.nus.edu.sg for Pre-Consideration

PRE-CONSIDERATION
Depending on the arrangement with your school, EITHER
Submit required documents to your school
OR
Email required documents to ngne@comp.nus.edu.sg for Pre-Consideration

PRE-APPROVAL
Receive email notification of Pre-approval

OFFICIAL APPLICATION
Submit official application via NUS online application portal

SUBMISSION OF HARD COPY DOCUMENTS
Submit hard copy application documents by post to NUS Registrar’s Office before the stipulated deadline

NOTE: STUDENTS ARE NOT REQUIRED TO SUBMIT HARD COPY DOCUMENTS FOR JANUARY 2021 INTAKE

Yes

If successful

If successful

If successful
# January 2021 Intake

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 18 September 2020</td>
<td>Submit application materials to <a href="mailto:ngne@comp.nus.edu.sg">ngne@comp.nus.edu.sg</a> for Pre-Consideration.</td>
</tr>
<tr>
<td>1 September – 1 October 2020</td>
<td>Online submission of application materials after obtaining Pre-Approval.</td>
</tr>
<tr>
<td>Mid Nov 2020</td>
<td>Work with NGNE coordinator to confirm supervisor &amp; courses to take. Work with supervisor on project details; Get CP3106 project form signed and submitted to <a href="mailto:ngne@comp.nus.edu.sg">ngne@comp.nus.edu.sg</a></td>
</tr>
<tr>
<td>Mid Nov 2020</td>
<td>Receive official offer from NUS Registrar’s Office. Apply for on-campus accommodation.</td>
</tr>
<tr>
<td>Early Dec 2020</td>
<td>Receive In-principle Approval (IPA, used as entrance VISA and also for application of Student’s Pass) for entry to Singapore. Purchase air ticket.</td>
</tr>
<tr>
<td>Before arrival in January 2021</td>
<td>Do some preliminary work to prepare for CP3106 project.</td>
</tr>
<tr>
<td>Before 11 January 2021</td>
<td>Arrive Singapore one week before 11 January*.</td>
</tr>
<tr>
<td>11 January – 16 April 2021</td>
<td>Semester 2 instructional period. 13 weeks + 1 recess week. Each week, student should spend around 4 days on the project, 2 days on the modules, meet the supervisor at least an hour or more each week.</td>
</tr>
<tr>
<td>15 March 2021</td>
<td>MComp application deadline.</td>
</tr>
<tr>
<td>23 April 2021</td>
<td>Students are to submit a draft report to both supervisor and another appointed evaluator by Friday, 5pm on Week 13 of the semester. On the Friday of Week 14, there will be an evaluation session by the supervisor and the appointed evaluator.</td>
</tr>
<tr>
<td>24 April – 8 May 2021</td>
<td>Course examination &amp; Project/report evaluation (supervisor + reviewer).</td>
</tr>
<tr>
<td>Mid May 2021</td>
<td>Interview for graduate programmes. Return to home country.</td>
</tr>
<tr>
<td>End July 2021</td>
<td>If successful in gaining admission to graduate programmes, return to Singapore/NUS.</td>
</tr>
</tbody>
</table>

*For January 2021 intake, students may need to arrive more than 1 week before the start of semester as travellers entering Singapore are required to serve a Stay-Home Notice (SHN) of 7 to 14 days depending on the country of origin.*
Online Application

• After receiving pre-approval, students should submit the following documents during the official application via NUS online application portal:

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Copy of passport showing your particulars</td>
</tr>
<tr>
<td>2.</td>
<td>Record of courses taken in current semester/term</td>
</tr>
<tr>
<td>3.</td>
<td>Official academic transcript (including grading explanation/remarks) with English translation</td>
</tr>
<tr>
<td>4.</td>
<td>English qualifications (CET6, TOEFL or IELTS)</td>
</tr>
<tr>
<td>5.</td>
<td>Student Status Letter issued by your home university</td>
</tr>
<tr>
<td>6.</td>
<td>Documentary proof of financial support in English</td>
</tr>
</tbody>
</table>

Checklist for online application: [http://www.nus.edu.sg/registrar/info/ng/NGCheckList.pdf](http://www.nus.edu.sg/registrar/info/ng/NGCheckList.pdf)
Financial Proof Required in Online Application

• For students who are studying in NUS for one semester, the documentary proof of financial support should certify your financial ability to make payment for the **Miscellaneous Student Fees (MSFs)** and **tuition fees for at least 3 modules** (6 modules if you are studying in NUS for two semesters).

• For the actual rates of MSF and tuition fees, please refer to [this page](#).

• You may submit a **bank statement** (original, certified true copy or electronically generated statements will be accepted) OR a **letter issued by the bank (in English)** to proof your financial ability. The bank statement/letter should not be dated more than 6 months from the intended date of admission.
Requirement of NGNE Completion

http://www.nus.edu.sg/registrar/docs/info/prospective-students---non-graduating/ng-modules.pdf

• January intake
  ✓ Complete 2 elective modules with at least one level-4000 module
  ✓ Independent Project module (CP3106)

Note: Students are advised to choose modules of level-3000 and above.
Graduate Programme Admission Requirement

- NGNE students who met the following requirements can apply directly to the SoC Master of Computing (MComp) Programme:
  - All elective modules with grade B+ or above
  - Independent Project (CP3106) with grade A- or above

- SoC reserves the right to arrange for an interview before giving an offer

MComp: https://www.comp.nus.edu.sg/programmes/pg/mcs/
**Available Modules (Semester 2)**


<table>
<thead>
<tr>
<th>Module Code</th>
<th>Module Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CS2040C</td>
<td>Data Structures and Algorithms</td>
<td>CS2100</td>
<td>Computer Organisation</td>
</tr>
<tr>
<td>CS2102</td>
<td>Database Systems</td>
<td>CS2103</td>
<td>Software Engineering</td>
</tr>
<tr>
<td>CS2105</td>
<td>Introduction to Computer Networks</td>
<td>CS2106</td>
<td>Introduction to Operating Systems</td>
</tr>
<tr>
<td>CS2107</td>
<td>Introduction to Information Security</td>
<td>CS2108</td>
<td>Introduction to Media Computing</td>
</tr>
<tr>
<td>CS2113</td>
<td>Software Engineering &amp; Object-Oriented Programming</td>
<td>CS3211</td>
<td>Parallel and Concurrent Programming</td>
</tr>
<tr>
<td>CS3223</td>
<td>Database Systems Implementation</td>
<td>CS3230</td>
<td>Design and Analysis of Algorithms</td>
</tr>
<tr>
<td>CS3234</td>
<td>Logic for Proofs and Programs</td>
<td>CS3235</td>
<td>Computer Security</td>
</tr>
<tr>
<td>CS3236</td>
<td>Introduction to Information Theory</td>
<td>CS3242</td>
<td>3D Modeling and Animation</td>
</tr>
<tr>
<td>CS3243</td>
<td>Introduction to Artificial Intelligence</td>
<td>CS3244</td>
<td>Machine Learning</td>
</tr>
<tr>
<td>CS3245</td>
<td>Information Retrieval</td>
<td>CS3247</td>
<td>Game Development</td>
</tr>
<tr>
<td>CS4215</td>
<td>Programming Language Implementation</td>
<td>CS4218</td>
<td>Software Testing</td>
</tr>
<tr>
<td>CS4220</td>
<td>Knowledge Discovery Methods in Bioinformatics</td>
<td>CS4231</td>
<td>Parallel and Distributed Algorithms</td>
</tr>
</tbody>
</table>

The final list of modules offered will be based on the actual conditions of the semester and is subject to change.
# Available Modules (Semester 2)


<table>
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<tr>
<th>Module Code</th>
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</tr>
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<tbody>
<tr>
<td>CS4240</td>
<td>Interaction Design for Virtual and Augmented Reality</td>
<td>CS4241</td>
<td>Multimedia Information Retrieval</td>
</tr>
<tr>
<td>CS4242</td>
<td>Social Media Computing</td>
<td>CS4244</td>
<td>Knowledge Representation and Reasoning</td>
</tr>
<tr>
<td>CS4247</td>
<td>Graphics Rendering Techniques</td>
<td>CS4268</td>
<td>Quantum Computing</td>
</tr>
<tr>
<td>CS4330</td>
<td>Combinatorial Methods in Bioinformatics</td>
<td>CS4347</td>
<td>Sound and Music Computing</td>
</tr>
<tr>
<td>IS3221</td>
<td>Enterprise Resource Planning Systems</td>
<td>IS3251</td>
<td>Principles of Technology Entrepreneurship</td>
</tr>
<tr>
<td>IS4233</td>
<td>Legal Aspects of Information Technology</td>
<td>IS4241</td>
<td>Social Media Network Analysis</td>
</tr>
<tr>
<td>IS4243</td>
<td>Information Systems Consulting</td>
<td>IS4250</td>
<td>IT-enabled Healthcare Solutioning</td>
</tr>
<tr>
<td>BT2101</td>
<td>Decision Making Methods and Tools</td>
<td>BT2102</td>
<td>Data Management and Visualisation</td>
</tr>
<tr>
<td>BT3102</td>
<td>Computational Methods for Business Analytics</td>
<td>BT3103</td>
<td>Application Systems Development for Business Analytics</td>
</tr>
<tr>
<td>BT4013</td>
<td>Analytics for Capital Market Trading and Investment</td>
<td>BT4014</td>
<td>Analytics Driven Design of Adaptive Systems</td>
</tr>
<tr>
<td>BT4211</td>
<td>Data-Driven Marketing</td>
<td>BT4222</td>
<td>Mining Web Data for Business Insights</td>
</tr>
</tbody>
</table>

The final list of modules offered will be based on the actual conditions of the semester and is subject to change.
CP3106: Independent Project

• CP3106 is a project module, and to be considered for home university graduation requirement too (equivalent to Final Year Project)

• Student will work with a professor as supervisor on a topic

Professors have different working styles. Some professors have fixed projects to do, some professors would prefer students to work out the project scopes. In general, students can try to read and identify “gaps” in current research (i.e. missing link, interesting work that has not been done, or interesting problems not known before hand) through extensive readings of literature to form a big picture on what can be done further.

• Workload requirement

Each week, students should spend around 4 days on the project. Students should meet and discuss with the supervisor for at least an hour each week.
## CP3106: Potential Supervisors

Below are some of the supervisors for January 2020 intake (they are likely to take some students for January 2021):

(See their profiles at: [https://www.comp.nus.edu.sg/about/faculty/](https://www.comp.nus.edu.sg/about/faculty/))

<table>
<thead>
<tr>
<th>Name</th>
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<th>Name</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angela Yao</td>
<td>Vision, Machine Learning</td>
<td>Anthony Tung</td>
<td>DB</td>
<td>Chan Chee Yong</td>
<td>DB</td>
</tr>
<tr>
<td>Chang Ee Chien</td>
<td>Cybersecurity</td>
<td>Chan Mun Choon</td>
<td>Systems &amp; Networking</td>
<td>Danny Poo</td>
<td>Analytic</td>
</tr>
<tr>
<td>Huang Zhiyong</td>
<td>Graphics, HCI</td>
<td>Ken Sung</td>
<td>Computational Biology</td>
<td>Khoo Siau Cheng</td>
<td>Computer Language</td>
</tr>
<tr>
<td>Lee Wee Sun</td>
<td>Machine Learning</td>
<td>Leong Hon Wai</td>
<td>Algorithm, Big Data</td>
<td>Leong Tze Yun</td>
<td>AI, Machine Learning</td>
</tr>
<tr>
<td>Tay Yong Chiang</td>
<td>Network, DB</td>
<td>Teo Yong Meng</td>
<td>Architecture, parallel</td>
<td>Terence Sim</td>
<td>Vision</td>
</tr>
<tr>
<td>Wong Weng Fai</td>
<td>GPU, Neural Network</td>
<td>Wang Wei</td>
<td>DB</td>
<td>Wynne Hsu</td>
<td>DB, Machine Learning</td>
</tr>
<tr>
<td>Xiao Xiaokui</td>
<td>DB</td>
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</tbody>
</table>
Past Participants’ Feedback

"I think the NGNE programme is very helpful. I have experienced the educational environment in a different country. It is very difficult to know what to do at first, for example, I do not know what tutorials are, but gradually I can get used to it. Besides, my supervisor is very nice. She and her students gave me many suggestions on my project. The weekly meeting helps me to correct my mistakes during my research. The corona virus causes a lot of trouble at the end of the programme, for example, it is difficult to return to China. However, the NUS and NGNE programme staff provide us a lot of assistance during such hard times. Therefore, I think it is very wonderful."

— Participant from Zhejiang University, AY2019/2020

"I would like to thank NUS SoC for giving me the opportunity to attend the NGNE programme. Although it was difficult to adapt to the workload at first, I did feel that my professional skills and psychological ability have both improved a lot in the end because of the top-class learning experience and the excellent academic resources provided here. Since I participate in the NGNE programme, I’ve always had an idea about joining the MComp programme, and regard it as a goal. The experience and gains of this semester strengthen my idea even more. I will always be thankful for this experience and all the help from teachers, staff and classmates."

— Participant from Sichuan University, AY2019/2020
"My supervisor was Prof Leong and we worked on a project about dynamic decision making and reinforcement learning on a robot simulation platform. It aims to design a high-level language which allows the users to specify their problem and automatically build a mathematical model and then solve the problem. The topic is very abstract for me at the beginning, but with the guidance of Prof Leong, I successfully understood its meaning, realized the target interface and applied RL algorithms onto the target platform.

Prof Leong and everyone in her group are very nice! We arranged group meetings every week, in which we shared the papers read recently, the progress of our projects and new research results with each other. These experiences helped me improve my research ability and I have to say thank you to everyone!

Since this is a special period, it's difficult to return to my home country, so I applied to Prof Leong for an internship this summer and she agrees. It's very happy to have more time with the group and do some related research work here."

— Participant from Xi'an Jiaotong University, AY2019/2020
"I have had a wonderful time with Professor Teo, and I would like to express my sincere appreciation to him. From the determination of the project theme, to the daily research and study, and finally to the revision of the report, Prof Teo took countless time to give me careful guidance and continued support from all aspects. Professor Teo's rigorous attitude in scientific research deeply affected me, which I think I will enjoy the benefit all my life."

— Participant from University of Electronic Science and Technology of China, AY2019/2020
NGNE Estimated Expenses

• Tuition fees (excluding miscellaneous fees)
  ✓ SoC standard fee per module: SGD3,820
  ✓ 3 modules (CP3106 is also considered as one module) = SGD11,460
  ✓ Latest tuition fees: http://www.nus.edu.sg/registrar/administrative-policies-procedures/non-graduating/non-graduating-fees

• Estimated living expense (including accommodation):
  ✓ SGD1,000 per month
  ✓ Estimated living expense: http://www.nus.edu.sg/oam/apply-to-nus/before-you-apply/estimated-expenses
MComp Estimated Expenses

• Tuition fees (excluding miscellaneous fees)
  ✓ Master of Computing specialising in Computer Science / Information Systems / Infocomm Security / Artificial Intelligence: SGD48,000
  ✓ Master of Science in Business Analytics: SGD58,000
  ✓ Master of Computing – General Track: SGD58,000
  ✓ Above tuition fees are subject to 7% GST (Goods & Services Tax)

• Estimated living expense (including accommodation):
  ✓ SGD1,000 per month
  ✓ 1 year in Singapore: ~SGD12,000

MComp: http://www.comp.nus.edu.sg/programmes/pg/mcs/
PhD Programme

• Research scholarships are offered for PhD Programme
• Full tuition fee subsidy with a monthly allowance of SGD2,000
• Scholars in a PhD programme may be eligible for an additional stipend of up to $500 per month upon passing the PhD Qualifying Examination (QE), which is normally held 12 to 18 months after registration of candidature. The additional stipend is renewable each semester subject to good performance.
• Estimated living expense (including accommodation): SGD1,000 per month

PhD Scholarships:
https://www.comp.nus.edu.sg/programmes/pg/phdcs/scholarships/
Thank you!