Identification of project and supervisor
The Capstone project in the Physical Sciences will be identified in conversations between the student, the potential supervisor, and the Head of Studies or designee. Direct supervisors may be Yale-NUS faculty or other members of the academic community approved by the Head of Studies or designee. Every Capstone must have a Yale-NUS faculty as a faculty supervisor who is responsible for the assessment and grade submission for the project. The Capstone project is expected to be a significant piece of original research that will be carried out over the course of the final year. It may involve experimental work in the laboratory of the supervisor, or theoretical/computational work under the guidance of the supervisor. The project will culminate in a dissertation that documents the context within which the project is contemporarily based, the research done, the results obtained, the ensuing discussion, and the conclusions reached at the end of the Capstone.

Range of topics and formats
The Capstone can be an experimental or theoretical project in, but not restricted to, physics, chemistry, or earth sciences. Purely library research-based projects will not be approved. The Capstone project has to be a significant piece of original independent research, which may be a part of, or related to, the current research of the supervisor. The Capstone may also be a project proposed and developed by the student, with the supervisor agreeing to provide laboratory space and guidance for the project.

Activities as part of the project
Students have to complete an independent research-based Capstone project in the Physical Sciences in consultation with a faculty supervisor. This academic experience will be a valuable opportunity for the student to engage in cutting-edge research in the physical sciences, while simultaneously synthesising and utilising what they have learnt in their courses. Students are expected to work on the Capstone project throughout the two semesters of the final year. In the second semester, the students will have to communicate the results of their Capstone project to the faculty and their peers, using presentation and writing styles consistent with practices in the professional scientific disciplines.

Preparation of students
Students are encouraged to satisfy most, if not all, the course requirements of the Physical Sciences major prior to the final year. Although it is not mandatory, students are also encouraged to obtain some research experience prior to their Capstone. They may obtain such research experience by working with either Yale-NUS or external faculty.

Starting from AY2018/2019, all students doing their capstone projects with Physical Science faculty supervisors should concurrently enroll in YSC4209 Physical Science Research Seminar (which is a 4 MC year-long module).

Expectations for students/supervisor interactions and work on the project
In addition to the conducting of the attendant research and writing of the dissertation, students are expected to meet with their Capstone supervisors regularly throughout both semesters of the final year. This may involve formal scheduled meetings, attendance of the student at regular research group meetings of the supervisor, or informal discussions in the laboratory/offices. This will enable the student to receive timely feedback on their work progress.

Format(s) of final product
The Capstone dissertation is a substantial scholarly document that includes (1) an abstract, (2) an introduction putting the research into context, (3) a description of the experimental or theoretical methods used in the work, (4) a description of the results obtained, (5) a discussion based on the results, (6) the conclusions reached, and (7) a bibliography listing the references used throughout the Capstone dissertation. There is no minimum or maximum word limit, but the dissertation can be expected to contain between 30 and 100 pages (even though much of that might just be data and results in the appendix).

Assessment(s)
The Physical Sciences Capstone projects will be assessed based on (1) the oral presentation (20 %) given to the faculty and peers in the second semester, and (2) the dissertation (80 %) submitted by the due date (as advised by Registry). Besides the faculty supervisor, the faculty attending the oral
presentation will also contribute towards the assessment of the oral presentation. Assessment of the
dissertation will be carried out by the faculty supervisor and a second examiner (assigned by the
Head of Studies or designee), and it covers two aspects: (1) an assessment of the effort put forth by
the student into the Capstone project and (2) the scholarship of the written document. In cases
where there are significant differences between the scores by the two examiners and/or the oral
presentation, a third examiner may be assigned. The Head of Studies will assign letter grades to
the capstone projects taking into consideration both the distribution of scores within the cohort as
well as historical norms across cohorts.