	PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University and Singapore Institute of Technology
2	**Teaching Institution**	Newcastle University and Singapore Institute of Technology
3	**Final Award**	BEng Honours
4	**Programme Title**	Marine Technology with Honours in:
5	**UCAS/Programme Code**	1414U: Marine Engineering 1413U: Naval Architecture 1415U: Offshore Engineering
6	**Programme Accreditation**	RINA, IMarEST
7	**QAA Subject Benchmark(s)**	Engineering
8	**FHEQ Level**	6
9	**Last updated**	October 2021

10	**Programme Aims**

The programme aims to produce marine technology graduates who:

1. have developed well founded knowledge, skills and understanding of marine engineering, naval architecture or offshore engineering appropriate to their degree title.
2. are able to couple a sound theoretical grasp of the subject with practical application, awareness of responsibilities to society and the environment, the requirement for flexibility and the ability
to assemble information from a variety of sources;
3. have the ability to prioritise work and meet deadlines and the ability to work both alone and within multidisciplinary teams;
4. are prepared for employment in one of three well recognised sectors of the marine industries worldwide: shipbuilding/ship repair, marine engineering and offshore engineering.
5. benefits from Research-informed Teaching at NUIS. Newcastle University is a member of the
Russell Group of 24 leading UK research universities. NUIS also undertakes research here in Singapore. Our research feeds into our degree programmes in the Design Projects (group) and Project & Report (Individual) work in the undergraduate curriculum.

11	**Learning Outcomes**

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to the benchmark statements for engineering.

Knowledge and Understanding

On completing the programme students should know and understand:

A1. Mathematics and physics that are relevant to naval architecture, marine engineering and offshore engineering(E);

A2. The fundamental concepts, principles and theories of marine technology (E);

A3. Business and management techniques that are relevant to marine technology and marine technologists (E);

A4. Detailed knowledge and understanding of the essential facts, concepts, principles and theories relevant to the student's chosen area of specialisation within Marine Technology (E);

A5. The role of marine technologists in society and the constraints within which their engineering judgement will be exercised (E);

A6. The professional and ethical responsibilities of marine technologists (E);
A7. The environmental issues that affect marine technology and the issues associated with sustainable engineering solutions;
A8. Conceptual and detailed design of artefacts appropriate to their area of specialisation;
A9. Production practice including codes of practice, design, the assessment of safety risks and the legislative framework for safety.

Teaching and Learning Methods

Acquisition of A1 and A2 is through a combination of lectures, tutorials, example classes, laboratory
experiments and coursework throughout the programme and through projects in Year 3.
Acquisition of A3 is through a combination of lectures, supervisions, coursework and projects in Years 2 and 3.
Acquisition of A4 is through a combination of lectures, laboratory experiments, coursework and projects in Year 3.
Acquisition of A5 and A6 is through lectures throughout the programme and coursework in Year 3. Acquisition of A7 is through a combination of lectures, seminars, coursework and projects especially in Year 3.
Acquisition of A8 is through the design project in Stage 3 and lectures and coursework in Years 2 and 3.
Acquisition of A9 is addressed in lectures associated with Year 2 and Year 3 modules.

Assessment Strategy

Testing the knowledge base is through a combination of unseen written examinations (1-4, 9) and
assessed coursework (1-9) in the form of laboratory experiment write-ups (1, 2, 4), examinations (8),
coursework reports (3-9) and project reports and presentations (2, 3, 4, 7, 8)

Intellectual Skills

On completing the programme students should be able to:
B1. Plan, conduct and report a programme of investigative work; B2. Analyse and solve engineering problems (E);
B3. Design a structure or component to meet a need (E);
B4. Be creative in the solution of problems and in the development of designs (E); B5. Evaluate designs and make improvements (E);
B6. Integrate and evaluate information and data from a variety of sources (E);
B7. Take an holistic approach to solving problems and designing systems, applying professional judgements to balance risks, costs, benefits, safety, reliability, aesthetics and environmental impact (E).

Teaching and Learning Methods

Skills B1 and B2 are developed during laboratory experiments, coursework and projects as well as
through lectures, tutorials, example classes, laboratory experiments, coursework and projects associated with Year 2 and Year 3 modules.
Skills B3, B4 and B5 are developed through engineering applications and engineering design as well as research project and dissertation modules which students study during Years 2 and 3.
Skill B6 is developed through coursework activities, laboratory experiments, and research and design projects as well as through tutorials, example classes, laboratory experiments, coursework and projects associated with Year 2 and Year 3 modules.
Skill B7 is developed through design and project work carried out during Year 3.

Assessment Strategy

Analysis and problem solving skills are assessed through unseen written examinations and coursework.
Experimental, research and design skills are assessed through laboratory experiment write-ups, coursework reports and project reports, presentations and unseen written examinations. Creative
and design skills are assessed through coursework and unseen written examinations.

Practical Skills
On completing the programme students should be able to:
C1. Execute safely a series of experiments (E);
C2. Use laboratory equipment to generate data (E);
C3. Analyse experimental or computational results and determine their strength and validity(E);
C4. Prepare technical drawings, both hand drawn and computer aided; C5. Prepare technical reports;
C6. Give technical presentations;
C7. Use the scientific literature effectively; C8. Take notes effectively;
C9. Use computational tools and packages (E);
C10.Produce a conceptual or elemental design to a specification; C11 Search for information to develop concepts.

Teaching and Learning Methods
Practical skills are developed through the teaching and learning programme outlined above. Practical
experimental skills (1-3) are developed through laboratory experiments and project work. Skill 4 is taught through lectures and developed through drawing coursework exercises.
Skills 5 and 6 are taught through classes in Year 2 and then developed through feedback on reports written and presentations made as part of coursework assignments.
Skill 7 is developed through research project work. Skill 8 is practised throughout the programme. Skill 9 is taught and developed through coursework exercises and project work.
Skill 10 is taught and developed through the design project in Year 3 and lectures and coursework in Years 2 and 3.
Skill 11 is practised through the design project.

Assessment Strategy
Practical skills are assessed through laboratory experiment write-ups, coursework reports, project reports and presentations.

Transferable/Key Skills
On completing the programme students should be able to:
D1   Communicate effectively (in writing, verbally and through drawings) (E);
D2   Apply mathematical skills (algebra, geometry, modelling, analysis);
D3   Work as a member of a team (E);
D4   Use Information and Communications Technology (E);
D5   Manage resources and time (E);
D6   Learn independently in familiar and unfamiliar situations with open-mindedness and in the spirit of critical enquiry (E);
D7   Learn effectively for the purpose of continuing professional development and in a wider context throughout their career (E).

Teaching and Learning Methods
Transferable skills are developed through the teaching and learning programme outlined above.
Skill 1 is taught and practised through classes and the design project in Year 3 and then developed through feedback on reports written and presentations made as part of coursework assignments. Skill 2 is taught through lectures and tutorials and developed throughout the programme.
Skill 3 is developed through group project work.
Skill 4 is developed in many modules and is a skill developed as essential part of project work and report writing.
Skill 5 is developed through laboratory experiments, projects and other coursework activities and individual learning.
Skill 6 is introduced in Year 2 and developed throughout the course with particular emphasis in Year 3 on the investigative project.
Skill 7 is developed through lectures and tutorials and developed throughout the course.

Assessment Strategy
Skill 1 is assessed through coursework reports, presentations and oral examinations. Skill 2 is assessed primarily through examinations. Skill 4 is assessed through examinations and through research project work. The other skills are not formally assessed

12   Programme Curriculum, Structure and Features

Basic structure of the programmes

Engineering diploma holders from any of the five local polytechnics or A-level graduates with good

mathematics and science background are eligible to apply to Year 1 entry of the BEng Degree (Marine Engineering, Naval Architecture, Offshore Engineering) programmes. Students who have successfully completed a relevant marine technology diploma with good results in Ngee Ann Polytechnic (NP) or Singapore Polytechnic (SP) will be allowed to apply for module exemptions for the first-year study of the Joint Degree Marine Programmes, and these exemptions applications will be considered on a case by case basis for each student.

The normal Undergraduate year is approximately 52 weeks, arranged in three trimesters. This programme normally lasts three years. Every Honours student studies 50 credits in the first year, 75 credits in the second and another 55 credits in the third year. Students graduating from this programme with a BEng will have completed 180 ECTS credits. Each module is a self-contained part of the programme of study and carries a credit rating.

Key features of the programmes

This programme is jointly delivered by Newcastle University (NUIS) and Singapore Institute of Technology (SIT) in Singapore. The quality and standard of delivery in Singapore will be the same as the delivery of the similar programmes in the School of Marine Science and Technology at Newcastle University. Successful candidates will be awarded a Joint BEng degree from Newcastle University/Singapore Institute of Technology. Entry to MSc programmes at Newcastle University is possible following successful completion of this

programme at levels specified for individual MSc programmes.
After successful completion of Trimester 2 in Year 2 in Singapore, students will attend an

Programme regulations (link to on-line version, requires login)

- Marine Engineering BEng
- Offshore Engineering BEng
- Naval Architecture Beng

ΠΡΟΓΡΑΜΜΕ ΡΕΓΥΛΑΤΙΟΝΣ ΤΕΜΠΛΑΤΕ: ΥΝΔΕΡΓΡΑΔΥΑΤΕ 3 & 4 ΣΤΑΓΕ ΣΙΝΓΑΕ/9Η ΡΟΥΤΕ (γχλ αχ ηκ)

13   Criteria for admission

Entry qualifications
Engineering requires a wide range of attributes and abilities, so selection is not solely based on academic grades.

Engineering diploma holders from any of the five local polytechnics or A-level graduates with good mathematics and science background are eligible to apply to Year 1 entry of the BEng Degree (Marine Engineering, Naval Architecture, Offshore Engineering) programmes. Students who have successfully completed a relevant marine technology diploma with good results in Ngee Ann Polytechnic (NP) or Singapore Polytechnic (SP) will be allowed to apply for module exemptions for the first-year study of the Joint Degree Marine Programmes, and these exemptions applications will be considered on a case by case basis for each student.

Admissions policy/selection tools
Admissions tutors of Newcastle University and Singapore Institute of Technology will jointly consider applications from all polytechnic graduates and A-Level candidates who may qualify to enter this degree programme. Admissions tutors seek evidence of motivation and commitment from the Personal Statement and Reference on application forms and applicants must attend an interview which is compulsory.

14	Support for Student Learning

The Student Services portals provides links to key services and other information and is available at:

   NU: https://my.ncl.ac.uk/students/

   SIT: https://students.singaporetech.edu.sg/

Induction
Students will be provided inductions organised by the Singapore Institute of Technology and Newcastle University. During the week prior to the first trimester, new students will be given a general introduction to campus life as a student on the joint programme. Students will also be informed the principal support services available and the general information about their programme as described in the NU-SIT Joint Programmes Student Handbook.

New and continuing students will be provided the timetable of lectures and tutorials/labs/etc.

Services and facilities available to support students' learning including the following:
- NU-SIT Joint Programmes Student Handbook
- Ngee Ann Library, SIT Library and Newcastle University's electronic Library
- Email account and online learning facilities (e.g. Learning Management System)
- Extensive laboratories and computing facilities

Study skills support
Students will learn a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification. Students are tutored on their approach to both group and individual projects.

Academic support
The initial point of contact for a student is with a lecturer or module leader or their tutor in the first instance. Thereafter the Degree Programme Director or the Newcastle University Director of Undergraduate Studies may be consulted in conjunction with the SIT Programme Director. Issues relating to the programme may be raised at the Student-Staff Committee (SSC), and/or at the Joint Programmes Operations Committee (JPOC).

Pastoral support
All students are assigned a personal tutor in Singapore whose responsibility is to monitor the academic performance and overall well-being of their tutees.

NU has a senior tutor who acts as an additional point of contact for a student in the event of the allocated personal tutor's absence from the University and/or in the event of complicated issues.

In addition Newcastle University and Singapore Institute of Technology
NU: http://www.ncl.ac.uk/students/wellbeing/
SIT: https://www.singaporetech.edu.sg/life-sit/student-support

Support for students with disabilities

The SIT Student Care team provides help and advice for disabled students. It provides individuals with advice about facilities, services and the accessibility of the campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies. For more information, see
https://www.singaporetech.edu.sg/life-sit/student-support

Learning resources
Newcastle University's main learning resources are provided by the Robinson Library (for books, journals, online resources). Increasingly, library material is available electronically via remote access so some of Newcastle University's library holdings will be available to students in Singapore.

Students on this programme will have access to a wide range of computing facilities through Newcastle University's "Remote Access System" or ras.ncl.ac.uk. For more information see https://services.ncl.ac.uk/itservice/core-services/software/ras/

Increasingly, library material is available electronically via remote access so a database of Newcastle University's library holdings will be available to students in Singapore.

The SIT library provides students access to books, periodicals and audio-visual materials. The library also has access to leading academic databases such as ScienceDirect, SpringerLink and other electronic resources. There is still a substantial physical collection in the library with a large proportion being recommended course textbooks. For more information, see https://libguides.singaporetech.edu.sg/library

The Singapore Institute of Technology, through facilities available at Ngee Ann Polytechnic, provides an extensive and advanced library facility with access to media, e-books, databases, e-journals and many other information resources such as OPAC on their library catalogues. More information can be found at:
http://www.np.edu.sg/library/Pages/default.aspx

Additional mechanisms
The School receives input from the School Industry Advisory Board, whose members are from a wide range of industries, government bodies, classification societies etc.

15	Methods for evaluating and improving the quality and standards of teaching and learning

Module reviews
All modules are subject to review by questionnaires which are considered by the Joint Programmes Operations Committee (JPOC). Changes to, or the introduction of new, modules are also presented and approved at the JPOC. Student opinion is sought at the Student-Staff Committee (SSC) and/or the JPOC. New modules and major changes to existing modules are subject to approval by the Newcastle University SAgE Faculty Education Committee (FEC) and the SIT Board of Studies (BOS).

Programme reviews
The JPOC conducts an Annual Monitoring and Review of the degree programme and reports to the SAgE FEC and the SIT BOS. The FEC takes an overview of all programmes within the Faculty and reports any Faculty or institutional issues to the University Education Committee (UEC).

External Examiner reports
External Examiner reports are considered and the JPOC responds to these reports through FEC. External Examiner reports are shared with institutional student representatives, through the SSC,

Student evaluations
All modules and stages* are subject to review by student questionnaires. Informal student evaluation is also obtained at the SSC, and the JPOC. The results from student surveys are considered as part of the Annual Monitoring and Review of the programme and any arising actions are captured at programme and School / institutional level and reported to the appropriate body.
*With the exception of intercalating years and the final stages of undergraduate programmes.

Mechanisms for gaining student feedback
Feedback is channelled via the SSC and JPOC.

Faculty and University Review Mechanisms
Every six years, degree programmes in each subject area undergo a Newcastle University Learning and Teaching Review. This involves both the detailed consideration of a range of documentation, and a review visit by a review team (normally one day in duration) which includes an external subject specialist and a student representative. Following the review, a report is produced, which forms the basis for a decision by University Learning, Teaching and Student Experience Committee on whether the programmes reviewed should be re-approved for a further six year period.

A review was completed in October 2020.

Accreditation reports
The programmes is accredited by:
Institute of Marine Engineering, Science and Technology (IMarEST) & Royal Institution of Naval Architects (RINA).

Additional mechanisms
The School receives input from the School Industry Advisory Board, whose members are from a wide range of industries, government bodies, classification societies etc.

16	Regulation of assessment

Pass mark
Students will be assessed on a letter scale A-F, with each letter assigned an associated Grade Point (GP) on a 5 point scale.

A D Grade with corresponding grade point of 1.0 is a pass grade.

Course requirements
Progression from one trimester to another is subject to the NU-SIT Joint Programmes Regulations and Examination Conventions.

Students should attain at least a 2.0 Cumulative GPA (CGPA) after each trimester in order to maintain good academic standing.

After each study trimester and/or consecutive trimester, the joint Board of Examiners will track the academic standing of students with CGPA < 2.0 and issue the students with the following:
- Academic Warning – in any study trimester, CGPA < 2.0
- Academic Probation – in the next consecutive study trimester, CGPA < 2.0
- Academic Termination – in the 3rd consecutive study trimester, CGPA < 2.0

Students from AY2021/2022 cohort and onwards

Students obtaining an F grade or grade point of 0 in any module will be entitled to one re-sit/re-submission as of right.

If the failed module is a pre-requisite for a higher-level module, the student will not be able to take the higher-level module until the pre-requisite of the previous module has been met.

If the student fails the re-sit, a single re-module attempt will be offered at the next available opportunity.

Students obtaining an F grade undertaking a re-sit/re-submission attempt will have their grade point capped at 1.00 for the calculation of the CGPA

Students obtaining a D+/D or F grade have the option to undertake a re-module attempt and the grade point will be capped at 2.00 for the calculation of the CGPA.

Students from AY2020/2021 cohort and before

Students obtaining a D+/D/F grade will have a maximum of one re-sit/re-submission and one re-module attempt, unless a successful Personal Extenuating Circumstances (PEC) application has been made.

If the failed module is a pre-requisite for a higher-level module, the student will not be able to take the higher-level module until the pre-requisite of the previous module has been met.

If the student fails the re-sit, a single re-module attempt will be offered at the next available opportunity.

Re-sit and re-module attempts will be capped at grade point 2.00 for the calculation of CGPA.

Students are permitted no more than 10 credits at each level (UK FHEQ 4, 5, 6) at Grade D/grade point 1.5 or Grade E/grade point 1.0 for modules undertaken in 2019/2020 and 2020/2021.

Degree classifications
Degree classifications are based upon the Cumulative GPA for their programme of study.

All modules contribute to the final award and all years of study contribute equally.

The Cumulative Grade Point Average is calculated as follows:

$$\frac{\sum_{X=1}^{n} [\text{Grade Point} \times \text{Credits for Module X}]}{[\text{Total Credits attempted in all trimester}]}$$

Only letter-graded modules will be included in the computation of cGPA

NU-SIT Joint Programmes Marking Scheme

The standard NU-SIT Joint Programmes marking scheme is:

Modules taken from AY2021/22 onwards		
Letter Grade	**Grade Point**	**Descriptor**
A+	5.00	Excellent attainment of learning outcomes
A	5.00	
A-	4.50	
B+	4.00	Very Good attainment of learning outcomes
B	3.50	
B-	3.00	
C+	2.50	Good attainment of learning outcomes
C	2.00	
D+	1.50	Adequate attainment of learning outcomes
D	1.00	
F	0.00	Failed to attain learning outcomes

Modules taken up to AY2020/21		
Letter Grade	**Grade Point**	**Descriptor**
A+	5.00	Excellent attainment of most learning outcomes
A	5.00	
A-	4.50	
B+	4.00	Good attainment of most learning outcomes
B	3.50	
B-	3.00	
C+	2.50	Satisfactory attainment of most learning outcomes
C	2.00	
D	1.50	Limited attainment of most learning
E	1.00	Inadequate attainment of most learning outcomes
F	0.00	Failure to attain most learning outcomes

Degree classifications are based upon the Cumulative GPA for their programme of study:

Degree	CGPA Requirement	Final Year Project
Honours with highest distinction	4.5 ≤ CGPA ≤ 5	Minimum GP of 4.5
Honours with distinction	4.0 ≤ CGPA < 4.5	
Honours with merit	3.5 ≤ CGPA < 4.0	
Honours	3.0 ≤ CGPA < 3.5	
Pass	2.0 ≤ CGPA < 3.0	

Role of External Examiners
An External Examiner, a distinguished member of the subject community, is appointed by the University following recommendation from the Joint Programmes Operations Committee. The External Examiner is expected to:

   i.   See and approve assessment papers
   ii. Moderate examination and coursework marking
   iii. Attend the Board of Examiners
   iv. Report to the University on the standards of the programme

---

17   In addition, information relating to the programme is provided in:

Newcastle University in Singapore: https://www.ncl.ac.uk/singapore/study/undergraduate/

Singapore Institute of Technology website: http://www.singaporetech.edu.sg

NU-SIT Joint Programmes Regulations and Examinations Conventions

SIT-NU Programmes Academic Guide

SIT-NU Programmes Academic Guide (Annex)

SIT Student Handbook

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided.

Mapping of Intended Learning Outcomes onto Curriculum/Modules

Marine Engineering:

Intended Learning	Module codes (Compulsory in Bold)
A1	**MNO1101-MNO1105-MNO1106-MNO2101**
A2	**MNO2103-MNO2104-MNO2105-MNO2106-MNO2111**
A3	**MNO2102-MNO3103**
A4	**MNO2110-MNO3102-MNO3105-MNO3106-MNO3111- MNO3114**
A5	**MNO2102-MNO2109-MNO3114**
A6	**MNO3111-MNO3114-MNO2102**
A7	**MNO2104-MNO3111-MNO3114**
A8	**MNO3111- MNO3114**
A9	**MNO2109- MNO3101-MNO3111**
B1	**MNO3111- MNO3114**
B2	**MNO3111**
B3	**MNO2105- MNO2106-MNO3114-**
B4	**MNO3111-MNO3114**
B5	**MNO3111-MNO3114**
B6	**MNO3114**
B7	**MNO3111-MNO3114**
C1	**MNO1102-MNO1103-MNO1104-MNO2103-MNO2105-MNO2107-MNO3102-MNO3105**
C2	**MNO1102-MNO1103-MNO1104-MNO2103-MNO2105-MNO2107-MNO3102-MNO3105**
C3	**MNO3111-MNO3114**
C4	**MNO1109-MNO1110-MNO2105-MNO2106-MNO3111-MNO3114**
C5	**MNO3111-MNO3114**
C6	**MNO3111-MNO3114**
C7	**MNO3111-MNO3114**
C8	**All modules**
C9	**MNO3111-MNO3114**
C10	**MNO2105-MNO2106**
C11	**MNO3111-MNO3114**
D1	**MNO3111-MNO3114**
D2	**All modules**
D3	**MNO3111**
D4	**MNO3111-MNO3114**
D5	**MNO3111-MNO3114**
D6	**MNO3114**
D7	**MNO3114**

Naval Architecture:

Intended Learning	Module codes (Compulsory in Bold)
A1	**MNO1101, MNO1105, MNO1106, MNO2101**
A2	**MNO2103, MNO2104, MNO2105, MNO2106,**
A3	**MNO2102, MNO3103**
A4	**MNO2112, MNO3112, MNO3114, MNO3108, MNO3107**
A5	**MNO2102, MNO2109, MNO3114**
A6	**MNO3112, MNO3114, MNO2102**
A7	**MNO2104, MNO3112, MNO3114**
A8	**MNO3112, MNO3114**
A9	**MNO2109, MNO3101, MNO3112**
B1	**MNO3112, MNO3114**
B2	**MNO3112**
B3	**MNO2105, MNO2106, MNO3107, MNO3112, MNO3114**
B4	**MNO3112, MNO3114**
B5	**MNO3112, MNO3114**
B6	**MNO3114**
B7	**MNO3112, MNO3114**
C1	**MNO1102, MNO1103, MNO1104, MNO2103, MNO2105, MNO2107**
C2	**MNO1102, MNO1103, MNO1104, MNO2103, MNO2105, MNO2107**
C3	**MNO3112, MNO3114**
C4	**MNO1109, MNO1110, MNO2105, MNO2106, MNO3112, MNO3114**
C5	**MNO3112, MNO3114**
C6	**MNO3112, MNO3114**
C7	**MNO3112, MNO3114**
C8	**All modules**
C9	**MNO3112, MNO3114**
C10	**MNO2105, MNO2106, MNO3107**
C11	**MNO3112, MNO3114**
D1	**MNO3112, MNO3114**
D2	**All modules**
D3	**MNO3112**
D4	**MNO3112, MNO3114**
D5	**MNO3112, MNO3114**
D6	**MNO3114**
D7	**MNO3114**

Offshore Engineering:

Intended Learning	Module codes (Compulsory in Bold)
A1	**MNO1101-MNO1105-MNO1106-MNO2101**
A2	**MNO2103-MNO2104-MNO2105-MNO2106-MNO2111**
A3	**MNO2102-MNO3103**
A4	**MNO2112-MNO3113-MNO3114-MNO3108-MNO3107-MNO3109**
A5	**MNO2102-MNO2109-MNO3114**
A6	**MNO3113-MNO3114-MNO2102**
A7	**MNO2104-MNO3113-MNO3114**
A8	**MNO3113-MNO3114**
A9	**MNO2109- MNO3101-MNO3113**
B1	**MNO3113-MNO3114**
B2	**MNO3113**
B3	**MNO2105- MNO2106-MNO3107-MNO3113-MNO3114**
B4	**MNO3113-MNO3114**
B5	**MNO3113-MNO3114**
B6	**MNO3114**
B7	**MNO3113-MNO3114**
C1	**MNO1102-MNO1103-MNO1104-MNO2103-MNO2105-MNO2107**
C2	**MNO1102-MNO1103-MNO1104-MNO2103-MNO2105-MNO2107**
C3	**MNO3113-MNO3114**
C4	**MNO1109-MNO1110-MNO2105-MNO2106-MNO3113-MNO3114**
C5	**MNO3113-MNO3114**
C6	**MNO3113-MNO3114**
C7	**MNO3113-MNO3114**
C8	**All modules**
C9	**MNO3113-MNO3114**
C10	**MNO2105-MNO2106-MNO3107**
C11	**MNO3113-MNO3114**
D1	**MNO3113-MNO3114**
D2	**All modules**
D3	**MNO3113**
D4	**MNO3113-MNO3114**
D5	**MNO3113-MNO3114**
D6	**MNO3114**
D7	**MNO3114**