



C : Programme Specification – BSEd Major in Science

1. General information

Item	Detail
Awarding institution	Nueva Ecija University of Science and Technology (NEUST), Cabanatuan City, Nueva Ecija, Philippines
Teaching institution	NEUST, College of Education
Name of final award	Bachelor of Secondary Education
Programme title	Bachelor of Secondary Education Major in Science (BSEd Science)
Regulatory basis	CHED Memorandum Order (CMO) No. 75, s. 2017
Level	Undergraduate (bachelor's degree), teacher education
Total credit units	168 NEUST (CHED minimum 165), including 3 units of English for Teachers
Duration	4 years, 8 regular semesters
Mode of study	Flexible Learning
Language of instruction	English and Filipino (Filipino for FIL 1 and FIL 2)
Institutional accreditation / quality marks	Level III Institutional Accreditation and ISO 9001:2015 certification
Programme accreditation	Level IV
Admission requirements	Page 34, Rule VI of the Department’s Manual

2. Programme description and aims

The programme is an undergraduate teacher education programme that equips learners with the competencies to teach their chosen major at the secondary level. It aims to develop highly motivated and competent teachers who specialise in the content and pedagogy of secondary science education.

On completing all academic requirements, graduates are able to practise the teaching profession at the secondary level. The programme draws on social sciences, science, mathematics, technology, languages and the humanities, so graduates have multi-disciplinary preparation in content and pedagogy.

The programme is delivered by the College of Education, whose goals include subject matter expertise with pedagogical innovation, learner-centred and technology-driven teaching, research and lifelong learning, and community engagement.

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3. Expected learning outcomes

On completing the programme, graduates are expected to achieve the four programme outcomes (PO) below, each with its performance indicators.

PO	Programme outcome	Performance indicators
PO1	Demonstrate deep understanding of scientific concepts and principles.	Display basic and comprehensive understanding of knowledge and principles of the subject matter in the sciences.
PO2	Apply scientific inquiry in teaching and learning.	Apply scientific principles in solving current problems. Use scientific inquiry in understanding and explaining natural phenomena.
PO3	Utilize effective science teaching and assessment methods.	Design and use appropriate instructional materials in science. Employ effective teaching techniques for diverse learners in varied learning conditions. Design and use a variety of assessment techniques to monitor and evaluate learning. Provide regular feedback to students.
PO4	Manifest meaningful and comprehensive pedagogical content knowledge (PCK) of the sciences.	Use appropriate pedagogy and technology for the different science content areas. Demonstrate varied teaching-learning methods, including science investigations, models and prototypes, and science research. Create learning experiences that develop discovery learning, problem learning and critical thinking.

4. Curriculum structure

The curriculum has five course groups: General Education, Professional Education, Major (Science) courses, Mandated subjects (PATHFit and NSTP) and NEUST curricular innovations (English for Teachers and Course Audit).

Year / semester	Courses	Credit units	Lecture hours	Laboratory hours
Year 1, Sem 1	FIL 1, NSTP 1, PATHFit 1, GEN ED 1, 2, 4, 5, PROF ED 1, 2	23 (+3 non-credit)	26	0
Year 1, Sem 2	FIL 2, NSTP 2, PATHFit 2, PROF ED 3, SES 1, 2, 3, 4	23 (+3 non-credit)	24	6
Year 2, Sem 1	PATHFit 3, GEN ED 10, PROF ED 4, 5, 6, SES 5, 6, 7	26	24	6
Year 2, Sem 2	PATHFit 4, PROF ED 7, 8, 9, SES 8, 9, 10, 11	26	23	6
Year 3, Sem 1	PROF ED 10, 11, SES 12, 13, 14, 15, 16	24	21	9
Year 3, Sem 2	SES 17, 18, 19, 20, ELP	17	16	3

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Year / semester	Courses	Credit units	Lecture hours	Laboratory hours
Year 4, Sem 1	GEN ED 3, 6, 7, 8, 9, PROF ED 12, 13	21	15	6
Year 4, Sem 2	PROF ED 14 Teaching Internship, Course Audit	6 (+3 non-credit)	6	40

Pathway rules. Prerequisite chains run through the major: SES 6 leads to SES 10 and SES 17; SES 7 to SES 11; SES 3 and SES 11 to SES 12; SES 9 and SES 12 to SES 16; SES 2 to SES 18. In Professional Education, PROF ED 1 leads to PROF ED 5, then PROF ED 7; PROF ED 6 to PROF ED 8; PROF ED 12 and 13 to PROF ED 14.

5. Teaching, learning and assessment

Approach	Where it appears in the programme	Supports
Laboratory work and investigations	SES 2, 3, 6, 7, 9, 10, 11, 12, 15, 16, 18 (laboratory units)	PO1, PO2
Learner-centred and differentiated teaching	PROF ED 3, PROF ED 9	PO3
Technology and ICT integration	PROF ED 4, PROF ED 7, SES 19; online activities in SES 18	PO3, PO4
Authentic and conventional assessment design	PROF ED 6, PROF ED 8	PO3
Science teaching methods and demonstration teaching	SES 14	PO3, PO4
Field-based observation and participation	PROF ED 12, PROF ED 13 (portfolio, demonstration teaching)	PO3, PO4
Clinical teaching internship with a cooperating teacher	PROF ED 14 (teaching portfolio, action research)	PO3, PO4
Undergraduate research and thesis defense	PROF ED 11, SES 20	PO2, PO4
Community service and immersion	NSTP 1, NSTP 2	Civic responsibility

Assessment. Course-level assessment follows the outcomes-based format of each course description. Test construction and grading are taught in PROF ED 6; non-conventional assessment in PROF ED 8. Portfolios are required in the field study courses and the internship; research is assessed through proposal and thesis defense. The academic performance of the students shall be assessed using the point-based grading system. The minimum passing percentage is 70%. Highest passing rate is 1.00 and the lowest is 3.00. A grade of 4.00 indicates a conditional failure. A grade of incomplete (INC) is given to a student whose overall performance after computing the grade for the semester is passing, but who fails to take the final examination or to submit a final requirement. Failure to comply with any of the aforementioned criteria means a failing grade of 5.00.

6. Mapping of learning outcomes to courses

This mapping is a draft built from the course descriptions; the programme should validate it before submission. X marks a main contribution.

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Course	PO1	PO2	PO3	PO4
SES 1 Earth Science	X			
SES 2 Inorganic Chemistry	X	X		
SES 3 Anatomy and Physiology	X	X		
SES 4 Fluid Mechanics	X			
SES 5 Environmental Science	X	X		
SES 6 Electricity and Magnetism	X	X		
SES 7 Organic Chemistry	X	X		
SES 8 Astronomy	X			
SES 9 Genetics	X	X		
SES 10 Waves and Optics	X	X		
SES 11 Biochemistry	X	X		
SES 12 Microbiology and Parasitology	X	X		
SES 13 Meteorology	X			
SES 15 Thermodynamics	X			
SES 16 Cell and Molecular Biology	X	X		
SES 17 Modern Physics	X			
SES 18 Analytical Chemistry	X	X		
SES 14 The Teaching of Science			X	X
SES 19 Technology for Teaching and Learning 2			X	X
SES 20 Research in Teaching Science		X		X
PROF ED 3 Facilitating Learner-Centered Teaching			X	
PROF ED 4 Technology for Teaching and Learning 1			X	X
PROF ED 6 Assessment in Learning 1			X	
PROF ED 8 Assessment in Learning 2			X	
PROF ED 9 Foundation of Special and Inclusive Education			X	
PROF ED 11 Methods of Research		X		X
PROF ED 12 Field Study 1			X	X
PROF ED 13 Field Study 2			X	X
PROF ED 14 Teaching Internship			X	X

7. Institutional vision, mission and goals

NEUST vision: A globally renowned university as champion of sustainable societal development through ethical and empowered human resources.



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NEUST mission: Advance knowledge generation and innovation, produce globally outstanding graduates, and transform communities towards inclusive progress.

Educational philosophy: Education is a transformative and holistic process grounded in the values of Nationalism, Excellence, Unity, Spirituality and Transparency, using learner-centric, research-driven and socially responsive pedagogy.

College of Education goals: The ten goals set out the foundations of education, subject expertise and pedagogical innovation, learner-centred and technology-driven teaching, transformative curricula, ICT use, reflective thinking and assessment, ethical and culturally sensitive standards, lifelong learning and partnerships, community engagement, and global networking.

Programme outcome	Link to vision, mission and college goals
PO1	Subject expertise (college goal on subject matter expertise); globally outstanding graduates (mission)
PO2	Research-driven pedagogy (educational philosophy); knowledge generation (mission)
PO3	Learner-centred, inclusive, technology-driven teaching; assessment for learning outcomes (college goals)
PO4	Pedagogical innovations and ICT in teaching and research (college goals); ethical, empowered human resources (vision)

VISION

A globally renowned university as champion of sustainable societal development through ethical and empowered human resources.



MISSION

Advance knowledge generation and innovation, produce globally outstanding graduates, and transform communities towards inclusive progress.