

# THE MATHEMATICS ACADEMIC PLANNER IN ACTION: TAILORING DIAGNOSTICS AND SUPPORT PATHWAYS FOR MATHEMATICAL SUCCESS IN STEM AND ECONOMICS

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Mathematics entry requirements at the University of Sydney have been relaxed as part of efforts to widen access to STEM courses and increase student diversity. Strict prerequisites have been replaced with 'assumed knowledge', the importance of which is often not fully appreciated by students. As a result, a rising proportion of students may be unaware they are mathematically underprepared for their studies.

In response, the School of Economics at the University of Sydney has partnered with the Learning Hub (Mathematics) to develop a targeted diagnostic mathematics quiz for first-year students, in order to improve success rates in second-year Economics and beyond. The quiz, delivered via the existing MAP (Mathematics Academic Planner) platform at the University of Sydney, is aligned with the mathematical assumed knowledge in the Economics curricula and provides students with timely, discipline-specific recommendations on support and learning pathways.

This presentation outlines the development of the quiz, its rationale and design, early insights from the rollout, and challenges and lessons learned to date. Our experience draws on prior MAP implementation in first-year mathematics tutorials—primarily taken by students entering life science programs such as chemistry and biology—highlighting the broader applicability of degree-aware diagnostics across STEM and Economics. We discuss how embedding diagnostic tools within the student experience not only enhances transparency around mathematical expectations but also fosters a culture of self-awareness and academic agency. We hope the presentation will provide practical insights into cross-disciplinary collaboration for developing diagnostic tools that respond to evolving curriculum and student needs.

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