

ONLINE APPENDIX for

## When Intensity Meets Modality: The Effects of Condensed Course Formats in Online and In-Person Instruction

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### APPENDIX A Subgroup Estimates of the Effects of Condensed Course Formats by Instructional Modality

	<i>Current Course Outcomes</i>				<i>Subsequent Course Outcomes</i>			
	Persist to the end of the course (1)	Pass the course (D or higher) (2)	Pass the course (C or higher) (3)	Course grade (4)	Course retaking (5)	Take additional course (6)	Take additional course and pass (D or higher) (7)	Take additional course and pass (C or higher) (8)
Impact of condensed course (online)	-0.0345* (0.0181)	-0.0194 (0.0173)	-0.0048 (0.0185)	-0.0315 (0.0648)	-0.0004 (0.0132)	-0.0159 (0.0188)	-0.0358** (0.0155)	-0.0374** (0.0147)
Impact of condensed course (in-person)	0.0119** (0.0050)	0.0280*** (0.0076)	0.0365*** (0.0068)	0.1481*** (0.0268)	-0.0137*** (0.0042)	0.0365*** (0.0085)	0.0361*** (0.0079)	0.0336*** (0.0084)

*Note:* This table reports estimates from equation (1) separately for online and in-person course sections, using student course enrollment data (N<sub>online</sub> = 50,469, N<sub>in-person</sub> = 368,345). Course grades are measured on a scale from zero to four. Each model incorporates controls for student individual fixed-effects and college-by-course fixed-effects for the introductory courses. Furthermore, the models account for course section characteristics, including course modality (online versus in-person), the total number of students in the course section, and the course schedule (weekend or weekday, day or evening). Instructor attributes are also included, including gender, race/ethnicity, employment status (full-time versus part-time), and teaching experience. Classes below the college level, student developmental courses, and courses graded on a pass/fail basis are excluded. Robust standard errors are in parentheses. Standard errors are clustered at the college level. Significance level: \*\*\* p<0.01, \*\*p<0.05, \*p<0.1.

APPENDIX B Pooled Estimates of the Effects of Condensed Course Formats by Instructional Modality

	<i>Current Course Outcomes</i>				<i>Subsequent Course Outcomes</i>			
	Persist to the end of the course	Pass the course (D or higher)	Pass the course (C or higher)	Course grade	Course retaking	Take additional course	Take additional course and pass (D or higher)	Take additional course and pass (C or higher)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Condensed Course Format	0.0090** (0.0044)	0.0260*** (0.0070)	0.0353*** (0.0060)	0.1443*** (0.0220)	-0.0117*** (0.0037)	0.0373*** (0.0081)	0.0353*** (0.0078)	0.0328*** (0.0078)
Online format	-0.0944*** (0.0259)	-0.1430*** (0.0300)	-0.1657*** (0.0333)	-0.5686*** (0.0958)	0.0792*** (0.0232)	-0.0128 (0.0285)	-0.0093 (0.0320)	-0.0149 (0.0309)
Condensed*Online	-0.0184** (0.0086)	-0.0346*** (0.0101)	-0.0287** (0.0114)	-0.1314*** (0.0442)	0.0156** (0.0074)	-0.0312*** (0.0111)	-0.0340*** (0.0111)	-0.0308*** (0.0110)
Sample Mean	.908	.750	.681	2.260	.100	.410	.333	.307
Observations	418,814	418,814	418,814	418,814	418,814	418,814	418,814	418,814

*Note:* This table reports estimates from equation (1) that include an interaction term between condensed and online formats, using student course enrollment data. Course grades are measured on a scale from zero to four. Each model incorporates controls for student individual fixed-effects and college-by-course fixed-effects. Furthermore, the models account for course section characteristics, including course modality (online versus in-person), the total number of students in the course section, and the course schedule (weekend or weekday, day or evening). Instructor attributes are also included, including gender, race/ethnicity, employment status (full-time versus part-time), and teaching experience. Classes below the college level, student developmental courses, and courses graded on a pass/fail basis are excluded. Robust standard errors are in parentheses. Standard errors are clustered at the college level. Significance level: \*\*\* p<0.01, \*\*p<0.05, \*p<0.1.