

ESTIMATES OF SPACE NEEDS OBIATED BY ONLINE COURSES
 prepared by Michael Haggans - May 16, 2017

MINIMUM ESTIMATE - CLASSROOMS, ACADEMIC OFFICES, STUDENT LIFE AND STUDY SPACE (Fall 2015)

CLASSROOM CALCULATION				Public	Private	Sources / Notes
Undergraduate 4-year				Non-profit		
S1	Students taking at least one, but not all online	1,362,517	251,027	1,613,545		Integrated Postsecondary Education Data System
Se	Students taking exclusively online courses	491,248	421,068	912,315		Integrated Postsecondary Education Data System
	Total students taking one or more online classes	1,853,765	672,095	2,525,860		Integrated Postsecondary Education Data System
	Hours per each online student, fall semester			3		Haggans - Assumption (actual value is expected to be greater)
	Hours per undergraduate FTE			15		IPEDS Glossary
F	Headcount to FTE Factor - FTE / Online student			0.2		3/15
Sto	FTE Total Online students			505,172		(S1+Se) * F
Mc	Median classroom ASF per FTE			13.5		<i>Kings of Infinite Space</i> , page 8
ASFc	ASF classrooms not occupied by online students			6,820,000		Sto * Mc
G	Grossing factor - ASF to BGSF			1.5		Haggans - Assumption based on professional experience
BGSFc	Classroom BGSF			10,200,000		ASFc * G
OFFICE SPACE CALCULATION				Public	Private	Sources / Notes
Undergraduate 4-year				Non-profit		
Se	Students taking exclusively online courses	491,248	421,068	912,315		Integrated Postsecondary Education Data System
	Hours per each online student, fall semester			3		Haggans - Assumption (actual value is expected to be greater)
	hours per undergraduate FTE			15		IPEDS Glossary
F	Headcount to FTE Factor - FTE / Online student			0.2		3/15
Soc	FTE Students Off-campus			182,463		Se * F
						Haggans - Assumption that 50% of office space is administrative
Mo	Median office ASF per FTE @ .5 for non-academic office space			17.5		<i>Kings of Infinite Space</i> , page 9 (median value is 35 ASF/FTE)
ASFo	Estimate of ASF Office not required			3,190,000		Soc * Mo
G	Grossing factor - ASF to BGSF			1.5		Haggans - Assumption based on professional experience
BGSFo	Office BGSF			4,800,000		ASFo * G
STUDENT SERVICE AND STUDY CALCULATION				Public	Private	Sources / Notes
Undergraduate 4-year				Non-profit		
Se	Students taking exclusively online courses	491,248	421,068	912,315		Integrated Postsecondary Education Data System
	Hours per each online student, fall semester			3		Haggans - Assumption (actual value is expected to be greater)
	Hours per undergraduate FTE			15		IPEDS Glossary
F	Headcount to FTE Factor - FTE / Online student			0.2		3/15
Soc	FTE Online students Off-campus			182,463		Se * F
Mss	Median student services + study ASF per FTE			30		<i>Kings of Infinite Space</i> , pages 10 and 11
ASFss	Estimate of ASF student service + study not required			5,470,000		Soc * Mss
G	Grossing factor - ASF to BGSF			1.5		Haggans - Assumption based on professional experience
BGSFss	Office BGSF			8,210,000		ASFo * G
TOTAL BGSF (Building Gross Square Feet)				23,200,000		BGSFc + BGSFo + BGSFss

MAXIMUM ESTIMATE - TOTAL NON-RESIDENTIAL, NON-RESEARCH SPACE

NON-RESIDENTIAL SPACE CALCULATION				Public	Private	Sources / Notes
Undergraduate 4-year				Non-profit		
Se	Students taking exclusively online courses	491,248	421,068	912,315		Integrated Postsecondary Education Data System
	Hours per each online student, fall semester			3		Haggans - Assumption (actual value is expected to be greater)
	Hours per undergraduate FTE			15		IPEDS Glossary
F	Headcount to FTE Factor - FTE / Online student			0.2		3/15
Soc	FTE Online students Off-campus			182,463		Se * F
Mnr	Median non-residential ASF per FTE			125		<i>Kings of Infinite Space</i> , page 7
ASFnr	Estimate of ASF non-residential not required			22,810,000		Soc * Mnr
G	Grossing factor - ASF to BGSF			1.5		Haggans - Assumption based on professional experience
BGSFnr	NON-RESIDENTIAL BGSF (BUILDING GROSS SQUARE FEET)			34,200,000		ASFnr * G

LIMITATIONS AND ACKNOWLEDGEMENTS - The methodology, estimates, assumptions and interpretations are mine alone and are not those of the NCES, IPEDS, Department of Education, the Society of College and University Planning or any of the authors of the publications referenced. None of the data were intended for the use of estimating the digital transformation of higher education. Any errors in interpretation or analysis are mine alone.

TRADITIONAL UNDERGRADUATES - These estimates are based solely on undergraduate student enrollment at traditional 4-year institutions. The facilities impact of online enrollments in graduate programs, and for-profit institutions are not included. Also not included are any certificate programs or MOOCs.

INTERPRETATION - It is self-evident that students earning online credit are not occupying classrooms in any conventional sense. However, they may well be living in on-campus or near-campus housing. Thus the estimates of student life and study space impacts are limited to students taking exclusively online courses. As for the office calculation, while hybrid courses are usually taught by on-campus faculty, most online courses are taught by adjuncts without conventional office space. At the same time, this estimate recognizes that administrative office support is still required for online students and their programs. - Michael Haggans - May 16, 2017