

MINIMUM ESTIMATE - CLASSROOMS, ACADEMIC OFFICES, STUDENT LIFE AND STUDY SPACE - Fall 2016

CLASSROOM CALCULATION			Public	Private	Sources / Notes
Undergraduate 4-year			Non-profit		
	Total Undergraduate 4-year		7,300,010	2,762,212	10,062,222
S1	Students taking at least one, but not all online		1,569,845	249,918	1,819,763
FS1	Headcount to FTE Factor - FTE / Online student				0.2
FTS1	FTE of students taking at least one				363,953
Se	Students taking exclusively online courses	545,646	405,420		951,066
Fe	Headcount to FTE Factor - FTE / Online student				0.4
FTSe	FTE of students taking all				380,426
Sto	FTE Total Online students				744,379
Mc	Median classroom ASF per FTE				13.5
ASFc	ASF classrooms not occupied by online students				10,050,000
G	Grossing factor - ASF to BGSF				1.5
BGSFc	Classroom BGSF				15,100,000

OFFICE SPACE CALCULATION			Public	Private	Sources / Notes
Undergraduate 4-year			Non-profit		
Se	Students taking exclusively online courses	545,646	405,420		951,066
	Hours per each online student, fall semester				6
	hours per undergraduate FTE				15
F	Headcount to FTE Factor - FTE / Online student				0.4
Soc	FTE Students Off-campus				380,426
Mo	Median office ASF per FTE @ .5 for non-academic office space				17.5
ASFo	Estimate of ASF Office not required				6,660,000
G	Grossing factor - ASF to BGSF				1.5
BGSFo	Office BGSF				10,000,000

STUDENT SERVICE AND STUDY CALCULATION			Public	Private	Sources / Notes
Undergraduate 4-year			Non-profit		
Se	Students taking exclusively online courses	545,646	405,420		951,066
	Hours per each online student, fall semester				6
	Hours per undergraduate FTE				15
F	Headcount to FTE Factor - FTE / Online student				0.4
Soc	FTE Online students Off-campus				380,426
Mss	Median student services + study ASF per FTE				30
ASFss	Estimate of ASF student service + study not required				11,410,000
G	Grossing factor - ASF to BGSF				1.5
BGSFss	Office BGSF				17,120,000

TOTAL BGSF (Building Gross Square Feet)			42,200,000	BGSFc + BGSFo + BGSFss
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MAXIMUM ESTIMATE - TOTAL NON-RESIDENTIAL SPACE (Note below)

NON-RESIDENTIAL SPACE CALCULATION			Public	Private	Sources / Notes
Undergraduate 4-year			Non-profit		
Se	Students taking exclusively online courses	545,646	405,420	951,066	NCES Digest of Educational Statistics - 2016 - Table 311.15
	Hours per each online student, fall semester			6	Haggans - Assumption (actual value is expected to be greater)
	Hours per undergraduate FTE			15	Integrated Postsecondary Education Data System (IPEDS) Glossary
F	Headcount to FTE Factor - FTE / Online student			0.4	6/15
Soc	FTE Online students Off-campus			380,426	Se * F
Mnr	Median non-residential ASF per FTE			125	Kings of Infinite Space, page 7
ASFnr	Estimate of ASF non-residential not required			47,550,000	Soc * Mnr
G	Grossing factor - ASF to BGSF			1.5	Haggans - Assumption based on professional experience
BGSFnr	NON-RESIDENTIAL BGSF (BUILDING GROSS SQUARE FEET)			71,300,000	ASFnr * G

FTE = Full Time Equivalent students **ASF** = Assignable Square Feet (usable area) **BGSF** = Building Gross Square Feet (ASF + hallways, mechanical rooms, etc.)

DISCLAIMER - These estimates, methodology 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. **OBSERVATIONS** - This is an estimate of the increment of campus space obviated by online classes. None of the data sources were intended to be used for this purpose. The NCES data is for "distance learning" (in this context synonymous with online) and is the most accurate estimate of the number of undergraduate students taking online courses. The SCUP publication, Kings of Infinite Space (2005) concerns campus ASF to FTE student facilities values that predate any significant online impacts. Therefore, I consider them to be an appropriate benchmark. As for the derivation of FTE and the magnitude of on-campus facilities demand, it is self-evident that students earning online credit are not occupying classrooms in any conventional sense. However, they may be living on-campus or near-campus. Thus the estimates of student life and study space impacts are limited to students taking exclusively online courses. As for the office calculation, most online courses are taught by adjuncts without conventional office space. At the same time, it is appropriate to recognize the administration office support are still required for online students and their programs. **MAXIMUM ESTIMATE** - Estimate of the traditional non-residential building space that would be required by the number of online students, if whole new campuses were provided for them, rather than relying on the excess capacity of existing campuses. Michael Haggans - October 1, 2018.