

Taking Enrollment Projections out of the “Black Box”



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Enrollment Projections – Influence Decisions & Resource Planning



Enrollment Projections – Temple At A Glance

Located in Philadelphia, Pennsylvania

17 Schools/Colleges

5 Professional Schools

9 Campuses (including Rome & Japan)

500+ Academic Programs

39,000+ Students

Over 3,500 Faculty

Cohort size: Approximately 5,000 students

www.temple.edu/ira

Enrollment Projections – Literature Review

National and State-level Publications

- National Center for Education and Statistics (NCES)
 - Projections of Education Statistics for XXXX
 - Enrollment
 - Graduates
 - Expenditures
 - Models used: cohort survival, age-specific enrollment, econometric
- Pennsylvania Department of Education
 - Required for state appropriations
 - Enrollment projected by CIP level

Academic and Professional Journals

- Association of Institutional Research
- Society for College and University Planning

Enrollment Projections – Literature Review

Challenges with Variables that Influence Enrollment Projections

- External factors
 - Domestic or international crises
 - Changes in government policies
- Internal Factors
 - Quality and diversity of program
 - Location
 - Prestige
 - Price
 - Recruitment policies
- Lack of quantifiable historic data
- General Consensus: no single model works for all institutions

Enrollment Projections - Methodology

- Narrowed to undergraduate students (homogeneous)
- Different dynamics for graduate students

- Mixed approach
 - Regression analyses – not as transparent
 - Historic ratios
 - Cohort survival
 - Simplification

- Flux of applications due to external factors
 - Economic
 - Volume of high school and college age students
 - Demand for jobs in discipline
 - Temple's Value

Enrollment Projections – Freshmen Applicants Model

Fall Year	Freshmen Applications	Unemployment Rate	College Aged Students	vs. Regional Competitors	Freshmen Applicants	Minus Actual	
2005	614	5	518,603	\$6,186	771	157	
2006	766	4.6	531,363	\$6,927	637	-129	
2007	773	4.5	525,304	\$7,219	757	-16	
2008	876	5.5	516,111	\$7,532	853	-23	
2009	921	8.2	508,260	\$8,004	907	-14	
2010	917	8.4	513,799	\$8,251	818	-99	
2011	995	7.9	506,227	\$8,044	1041	46	
2012	1178	7.7	493,698	\$11,679	1130	-48	
2013	1222	7	482,157	\$11,857	1443	221	Standard Deviation 104.8
2014	2174	5.6	475,540	\$12,511	2068	-106	
2015	2259	5.33	476,634	\$12,672	2189	-70	
2016		5.06	471,094	\$13,372	2309		
2017		4.97	465,554	\$14,072	2350		
2018		4.96	460,014	\$14,772	2354		
2019		5.05	454,473	\$15,472	2314		
2020		5.07	448,933	\$16,172	2303		
2021		5.10	443,393	\$16,872	2293		
2022		5.12	437,852	\$17,572	2283		
2023		5.14	432,312	\$18,273	2272		
2024		5.17	426,772	\$18,973	2262		
2025		5.19	421,231	\$19,673	2251		

Table 2: Proof of Concept Model of Previous Ten Years

24.34
Standard
Deviation

Fall 2
0.14
TR to FR
App ratio

Spring 1 to
Fall 2
Fresh apps
Ratio
0.03

Spring 1
1.81
TR to FR
App ratio

Model - Cohort Survival Mechanics																											
Index	Fall	Actual Enrollment	Fall Projected Enrollment	Proj vs Act	Actual Graduates	% Actual Graduates	% Graduates	Graduates	% Trans w/in TU	Trans w/in TU	% Stop Out of TU	Stop Out of TU	Fall 2 Fresh Apps	% Fall 2 Fresh	Fall 2 Fresh Enr	Fall 2 Trans Apps	% Fall 2 Trans In	Fall 2 Trans In Enr	Spring 1 Fresh Apps	% Spring 1 Fresh	Spring 1 Fresh Enr	Spring 1 Trans Apps	% Spring 1 Trans	Spring 1 Trans Enr	% Non-admit Returning	Non-admit Returning	Projected Following Fall Enrollment
1	2005	674	674	0	120	17.8%	17.5%	118	7%	47	10%	67	766	24%	162	142	10%	67.40	17	2%	13	33	4%	27	3%	20	731
2	2006	680	731	51	117	16.0%	17.1%	125	7%	51	10%	73	773	24%	176	142	10%	73.14	17	2%	15	33	4%	29	3%	22	796
3	2007	745	796	51	116	14.8%	16.8%	134	7%	56	10%	80	876	24%	191	142	10%	79.62	17	2%	16	33	4%	32	3%	24	870
4	2008	839	870	31	130	14.9%	16.4%	143	7%	61	10%	87	921	24%	209	142	10%	86.97	17	2%	17	33	4%	35	3%	26	953
5	2009	932	953	21	164	17.2%	16.1%	153	7%	67	10%	95	917	24%	229	142	10%	95.31	17	2%	19	33	4%	38	3%	29	1048
6	2010	1032	1048	16	179	17.1%	15.7%	164	7%	73	10%	105	995	24%	252	142	10%	104.80	17	2%	21	33	4%	42	3%	31	1156
7	2011	1111	1156	45	149	12.9%	15.3%	177	7%	81	10%	116	1178	24%	277	142	10%	115.60	17	2%	23	33	4%	46	3%	35	1279
8	2012	1277	1279	2	203	15.9%	15.0%	192	7%	90	10%	128	1232	24%	307	142	10%	127.94	17	2%	26	33	4%	51	3%	38	1420
9	2013	1418	1420	2	192	13.5%	14.6%	208	7%	99	10%	142	2174	24%	341	305	10%	142.05	81	2%	28	106	4%	57	3%	43	1582
10	2014	1605	1582	-23	236	15.0%	14.3%	225	7%	111	10%	158	2259	24%	380	309	10%	158.23	64	2%	32	116	4%	63	3%	47	1768
11	2015	1776	1768	-8			13.9%	246	7%	124	10%	177	2309	24%	424	323	10%	176.82	69	2%	35	125	4%	71	3%	53	1982

Table 3: Enrollment Projections

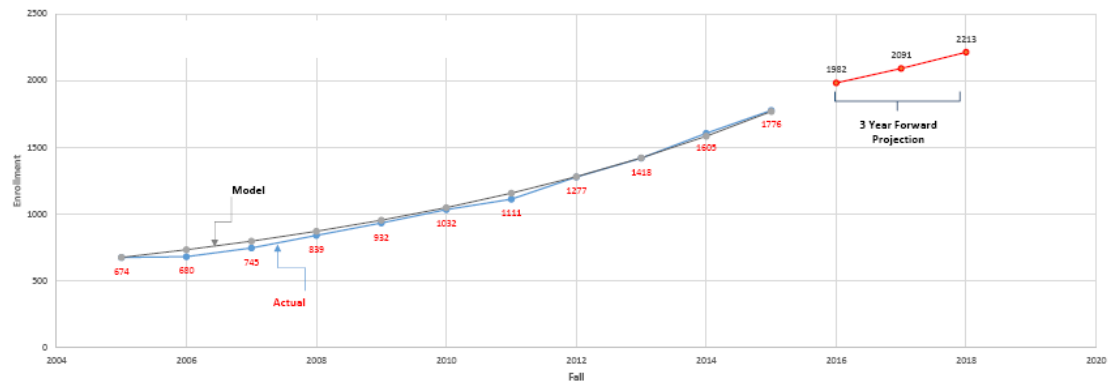
Projections																											
Index	Fall	Actual Enroll	Fall Projected Enrollment	Proj vs Act	Actual	% grads	% Graduates	Graduates	% Trans w/in TU	Trans w/in TU	% Stop Out of TU	Stop Out of TU	Fall 2 Fresh Apps	% Fall 2 Fresh	Fall 2 Fresh Enr	Fall 2 Trans Apps	% Fall 2 Trans In	Fall 2 Trans In Enr	Spring 1 Fresh Apps	% Spring 1 Fresh	Spring 1 Fresh Enr	Spring 1 Trans Apps	% Spring 1 Trans	Spring 1 Trans Enr	% Non-admit Returning	Non-admit Returning	Projected Following Fall Enrollment
12	2016		1982				13.5%	268	7%	139	10%	198	2350	17%	337	329	10%	198	70	2%	40	128	4%	79	3%	59	2091
13	2017		2091				13.2%	275	7%	146	10%	209	2354	17%	355	330	10%	209	71	2%	42	128	4%	84	3%	63	2213
14	2018		2213				12.8%	283	7%	155	10%	221	2314	17%	376	324	10%	221	69	2%	44	126	4%	89	3%	66	2350

Table 4: Enrollment Projections - by Major

Current Proportion	Fall Projected Enrollment									
	Fall	Bioengineering	Civil Engineering	Construction Mgt Tech	Electrical Engineering	Engineering	Engineering Technology	Mechanical Engineering	Undeclared Engineering	
	2016	1982	188	397	125	355	167	105	648	84
	2017	2091	199	420	133	376	177	111	686	89
	2018	2213	211	446	141	399	188	117	728	94

Notes:

1. H = Linear model of graduates with respect to the prior fall enrollment enrollment.
2. Completed applications in Table 2, column O, based on external economic factors. The decrease is driven by a projected decrease in the number of high school aged students in the state of PA.
3. Projections by major distributes the total enrollment projections based on the current proportions by major.



Enrollment Projections – Bottom Line

- Used to affect specific policy implementation
- University targets – uses projections of outside factors
- Broken down to individual models
- As each year is finalized, the model can be re-adjusted easily
- The method developed can also be used to identify trends of interest