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DETERMINING DE FACTO DEGREE PLANS: An Approach To Responding To SACS CR 2.8



UNIVERSITY OF
TEXAS
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SACS Core Requirement 2.8

The number of full-time faculty members is adequate to support the mission of the institution and to ensure the quality and integrity of its academic programs.



SACS CR 2.8 Template

Core Requirement 2.8 Number of Full-Time Faculty Members

Column One. List each location where students can complete 50% or more of a certificate or degree program. Only the city and state (and country if located outside the US) is necessary.

Columns Two, Three, Four, and Five. Provide the number and percent s as requested for each site, with separate forms for each term. List each major/program content area with totals in columns two and three. Column four addresses general education courses; columns five and six are graduate courses. Credit hours figures should be total student credit hours.

1	2	3	4	5	6
Location of Instruction	Number & Percent of Student Undergraduate Credit Hours Taught by Full-time Faculty for each Major or Program content area	Number & Percent of Student Undergraduate Credit Hours Taught by Part-time or Adjuncts or Graduate Teaching Assistants for each Major or Program content area	Number & Percent of Student Undergraduate Credit Hours Taught by Part-time Faculty or Adjuncts or Graduate Teaching Assistants in General Education Courses	Number & Percent of Student Graduate Credit Hours Taught by Full-time Faculty in each Degree Program	Number & Percent of Student Graduate Credit Hours Taught by Part-time Faculty or adjuncts in each Degree Program.

Prior Method Used in 2007

- (Discussion)



Conceptual Approach

- Faculty * Courses * Degree Plans
=> FTPT SCH by program
- CBM008 and CBM004 provide first two
- Two-fold process:
 1. Build Degree Plans crosswalk *4 years*
 2. Run CR-2.8 report *2 semesters*



	Hours Earned	To Be Earned
ENGLISH (12 Hours)		
1301		3
1302		3
LITERATURE		3
LITERATURE		3
Sub-totals	0	12
HISTORY (6 Hours)		
1311		3
1312		3
Sub-totals	0	6
FOREIGN LANGUAGE (14hrs in same language)		
1441		4
1442		4
2313		3
2314		3
Sub-totals	0	14
MATHEMATICS (6 Hours)		
MATH-1301 <i>OR</i> 1302		3
MATH-1308		3
Sub-totals	0	6
SCIENCE (8 hours with labs)		
CLASS + LAB		4
CLASS + LAB		4
Sub-totals	0	8
FINE ARTS (3 Hours)		
CLASS		3
Sub-totals	0	3
SOCIAL SCIENCE (9 Hours)		
CLASS		3
CLASS		3
CLASS		3

	Hours Earned	To Be Earned
MAJOR (36 Hours)		
2311		3
2312		3
Methods 3310 (completion of math requirements is needed to register)		3
Thought REQUIRED		3
One course from any 4 of 5 areas		12
I		
II		
III		
IV		
V		
Additional courses to complete 36 hours.		
POLS ELECTIVE		3
POLS ELECTIVE		3
POLS ELECTIVE		3
POLS ELECTIVE		3
Sub-totals	0	36
MINOR (18 Hours, with 6 advanced)		
CLASS		3
CLASS		3
CLASS		3
CLASS		3
CLASS		3
CLASS		3
Sub-totals	0	18
SPEECH (3 Hours)		
COMS CLASS (fulfills oral competency requirement)		3
Sub-totals	0	3
ELECTIVES (Sufficient to give total hrs. required)		
GENERAL ELECTIVES		5

Electronic Example – M.A. English, GMAP

Though this is an “electronic” degree plan, this is still not in a useable format to automatically process hundreds of degree plans.

DESCRIPTION: ENGL MA NT 2000					
LONG DESCRIPTION: ENGLISH M.A. (NON-THESIS) (2000-Present) - 36 Units Required (RG-0114)					
NUMBER: 0000					
SPECIAL GRADING: 3.00 GPA to graduate; 2.00 in each course required/ENGL 5300 B or better					
NOTES: Comprehensive examination required					
CATALOG YEARS: 2000					
REQUIREMENTS	R-NUM	UNITS/ CRS/ GPA	CODES	COURSELIST	CL-NUM
ENGLISH CORE - 3 Units/3.00 GPA Required (RQ-0526)	0526	3	AS		
~~ ENGL 5300 - 3 Units/3.00 GPA Required (Must be taken in first semester of enrollment)		3	AS	ENGL 5300	0835
ENGLISH ELECTIVES - 33 Units Required (RQ-0527)	0527	33	AS		
~~ ENGLISH ELECTIVES - 24 Units Required (Select any 5000-6000 level ENGL course in consultation with department advisor)		24	AS	ENGL ALL GRAD//#3##/S/5397, 5398, 6391, 6393, 6398/S/ENGL 6391/S/ENGL 6399	0015//1619/S/1620/S/0982/S/2518
~~ COLLEGE OF LIBERAL ARTS ELECTIVES - 9 Units Required (Select any 5000-6000 level College of Liberal Arts course in consultation with department advisor)		9	AS	COLA ALL GRAD//#3##/S/5397, 5398, 6391, 6393, 6398/S/ENGL 6391/S/ENGL 6399	0939//1619/S/1620/S/0982/S/2518
ENGLISH M.A. (NT) ADDITIONAL REQUIREMENTS (RQ-0528)	0528		AS		
~~ ENGLISH GPA - 3.00 Minimum Required		3.0	V	Used by RG-0114//In Res	
ENGLISH M.A. (NT) GPA (RQ-99-0528)	9-0528		AS		
~~ ENGLISH GPA - 3.00 Minimum Required		3.0	V	Used by RG-0114//In Res	

Degree Plan Challenges

- Some are rigid and prescriptive
 - Significant portion of students take the same courses
- Others are extremely accommodating
- Wildcards: “Any upper-level CHEM course”
 - Include all into the degree plan? That’ll be a LONG list
 - Include none?
- Some courses haven’t been taught in years
- Substitutions
- Some programs don’t publish plans online



De Facto Degree Plans

1. Use Transcript-Level Data (Enrollments)
2. Right Students
 - A. Eliminate Pre-Majors
3. Right Courses
 - A. Exclude University Core Curriculum courses
 - B. Eliminate obvious “noise”
 - C. Rank-sort remaining candidate courses
 - Take courses that generated 75%-85% of total SCH for that major



Transcript-Level Data (Enrollments)

- Two students may enroll in the same course for different purposes:
 - Required course for Student A
 - One of the group/area electives for Student B
 - Other: “broadening my education, horizons”
- Solution: Use Transcript-Level Data
 - One record per student per course
 - >1,000,000 enrollments in 4 years



Eliminate Pre-Majors

- Students who haven't been fully admitted into the program, due to:
 - Incomplete lower-level course requirements
 - Prerequisites
 - GPA requirements, etc.
- Exclude their course enrollments even if they declared intention to pursue a specific major or follow a degree plan



Students Admitted Into Major

- Course enrollments of fully admitted majors are more likely to be taken to fulfill degree plan requirements



1,200+ Active Plan Codes

- 185 Degrees on the Inventory
- Single variable, **Plan Code**, embeds encoding for:
 - Student major (775)
 - Degree level, type (BA/BS/BFA, etc.), certificates(72)
 - Intended (157) or accepted
 - Options, thesis/non-thesis
 - Online Academic Partnership
 - Doctoral-bound
 - Track or cohort, learning community group
 - Special (81) or visiting(?)
 - Plus the usual variation due to programs merging, splitting, renaming
- Not a clean hierarchy and not maintained as one



Architecture Plan Codes

View All First 1-15 of 15

Academic Institution	Academic Plan	Description	Academic Plan Type	Academic Program	Academic Care
UTARL	ARCHARNTA	Arch (Path A)-MARCH Non Thesis	Major	MASTR	(blank)
UTARL	ARCHARNTB	Arch (Path B)-MARCH Non Thesis	Major	MASTR	(blank)
UTARL	ARCHARNTC	Arch (Path C)-MARCH Non Thesis	Major	MASTR	(blank)
UTARL	ARCHARTHA	Arch (Path A)-MARCH Thesis	Major	MASTR	(blank)
UTARL	ARCHARTHB	Arch (Path B)-MARCH Thesis	Major	MASTR	(blank)
UTARL	ARCHARTHC	Arch (Path C)-MARCH Thesis	Major	MASTR	(blank)
UTARL	ARCHARTSA	Arch (Path A)-MARCH Thesis Sub	Major	MASTR	(blank)
UTARL	ARCHARTSB	Arch (Path B)-MARCH Thesis Sub	Major	MASTR	(blank)
UTARL	ARCHARTSC	Arch (Path C)-MARCH Thesis Sub	Major	MASTR	(blank)
UTARL	ARCHBS	Architecture-BS	Major	(blank)	UGRD
UTARL	ARCHBSINT	Architecture Intended	Intended	(blank)	UGRD
UTARL	ARCHCTPRT	Prop Reposition&Turnaround-CT	Certificat	CERT	(blank)
UTARL	ARCHSP	Architecture-SP Non-Degree	Specialztn	SPEC	(blank)
UTARL	ARCH_MNR	Architecture History Minor	Minor	(blank)	UGRD
UTARL	ARCH_UCOL	ARCH - University College	Intended	(blank)	UGRD

Eliminate Obvious “Noise”

- For each **Major-to-Course** combination:
 - ≤ 2 enrollments, or $\leq 1\%$ (for that major)
 - AND not from the same department
- Example
 - ‘CHEM 34xx’ course taken by 2 Political Science majors (over the 4-year period)
- Very conservative cut-offs:
 - 1% can be 20-40 enrollments in popular majors
 - Some majors have 10 or even fewer students



Top 75%-85% of Cumulative SCH

- After rank-sorting, take courses that combine for 75%-85% of Cumulative SCH
- “Top N Courses” wasn’t working well for:
 - Majors that have labs, other 1-2 hour courses
 - Majors with higher number of hours required for core



Key Metrics for Rank-Sorting

- A. % of Majors who took this course
- B. Majors as % of all students who enrolled
- C. Course Level
- D. Home Department or College

Examples:

- A = 40% of all Chemistry majors enrolled in CHEM_34xx
- B = 80% of enrollments in CHEM_34xx were Chemistry majors



De Facto Degree Plans – Definition

For a given Academic Program (major), the listing of top courses:

- taken by students fully admitted into this major
- taken by large portion of students with this major
- and/or where these students accounts for significant portion of total course enrollment
- and comprising 75%-85% of total SCH attempted by these majors
- excluding University Core courses
- excluding outside of department courses attempted by fewer than three or 1% of students in this major



Tool Used

- Tableau Software (Desktop version)
- Benefits
 - rapid exploration of unknown data
 - rapid prototyping and trial-and-error (switching/exploring various methods)
 - powerful aggregate calculations on-the-fly
- Final methodology is not tool-dependent and can be implemented with common data or statistics tools.



Results, Lessons Learned

- Simple method (popularity) was too noisy
- Arbitrary “Top N Courses” was alarming
 - 20 was too few for most undergraduate plans
- Encountered multiple dead ends
- Several iterations produced a fairly complex algorithm in the end
- Side benefits:
 - A cleaned up crosswalk between plan codes and degree programs
 - Updated University Core Curriculum list in S.I.S.

