Assessing Student Course-Taking Patterns and their Impact on College Outcomes

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Sample First Year Program for Undecided Majors

First Semester		
	College Writing I	3 cr
	Math	3 cr
	Social Science Core	3 cr
	Humanities	3 cr
	(and/or) Science	3 cr
	Total credits	12-15 cr

Second Semester		
	College Writing II	3 cr
	Math	3 cr
	Social Science Core	3 cr
	Science	3 cr
	(and/or) Foreign Language	3 cr
	Total credits	12-15 cr

Final Cluster Centers for Undecided Majors

First Fall Term

	Cluster					
	1	**2**	**3**	**4**	**5**	**6**
	N=480	*N=121*	*N=31*	*N=94*	*N=85*	*N=84*
English	2.90	2.63	2.32	2.81	2.47	2.14
Math	3.05	1.65	2.32	2.31	0.0	1.73
Social Science	2.56	6.17	0.58	2.52	2.89	1.25
Humanities	1.34	0.52	0.58	0.96	2.40	0.71
Science	2.36	0.83	7.71	0.0	3.22	3.40
Other	0.03	0.26	0.19	4.31	0.18	3.74
Study Skills	0.07	0.04	0.06	0.05	0.21	0.10

Centers = mean number of credit hours attempted in the discipline.

Description of Fall clusters:

1. **Rule Followers ….** Do as advised.
2. **Social Science Lovers ….** Heavy on anthropology, geography, political science, sociology. Less likely to attempt a math course
3. **Science Wannabes ….** Taking biology and chemistry.
4. **Wanderers ….** No science, likely to be taking upper-division non-general education courses.
5. **Math avoiders ….** No math. More likely to be Study Skills students.
6. **Reachers ….** Taking science, foreign language and upper-division courses.

Outcomes for Fall Clusters for Biological Science Majors

Cohorts Entering 1995-1998

Description of Fall Cluster	% of cohort N=525	High School GPA	Adjusted Fall GPA	% Return for Spring
Social science lovers	10%	Lowest	2.11	88%
Cautiously approaching science	32%	5th	2.23	84%
Math avoiders	11%	4th	2.15	86%
Undecided	10%	2nd	2.54	88%
Rule followers	30%	3rd	2.20	91%
Scientists	8%	Best	2.31	90%

Final Cluster Centers for Undecided Majors

First Spring Term

	Cluster					
	1	**2**	**3**	**4**	**5**	**6**
	N=273	*N=190*	*N=189*	*N=50*	*N=59*	*N=19*
English	2.81	2.57	2.63	2.64	2.34	0.79
Math	2.33	1.59	1.35	2.54	1.05	0.47
Social Science	2.52	2.75	6.23	1.14	2.39	3.00
Humanities	1.67	0.87	0.72	0.48	0.63	5.53
Science	2.44	1.61	1.50	5.68	1.03	2.00
Other	0.02	3.52	0.38	1.50	6.80	0.87

Centers = mean number of credit hours attempted in the discipline.

Description of Spring clusters:

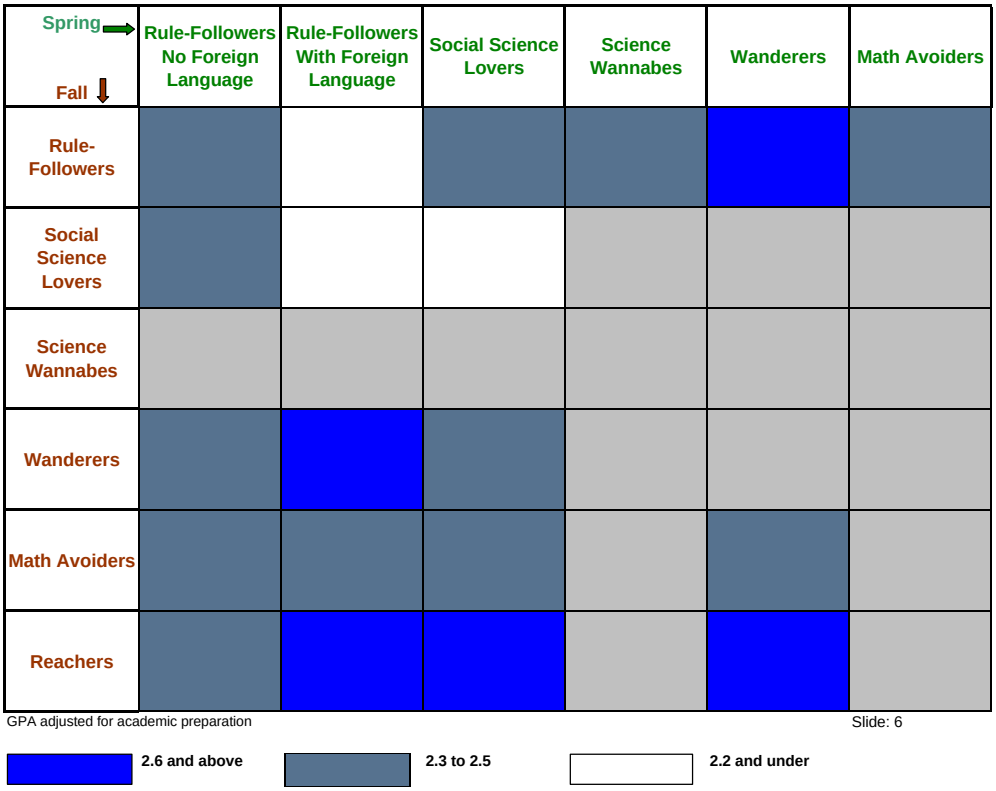
1. **Rule Followers – No Foreign Language** Do as advised, more likely to attempt a science course than a foreign language.
2. **Rule Followers – Foreign Language** Do as advised, more likely to attempt a foreign language.
3. **Social Science Lovers** Heavy on social sciences courses.
4. **Science wannabes** Taking biology and chemistry.
5. **Wanderers** Heavy on upper-division non-general education courses.
6. **Math avoiders** Little math. Less likely to enroll in College Writing.

Outcomes for Spring Clusters for Undecided Majors

Cohorts entering 1995-1998

Description of Spring Cluster	% of cohort N=780	Academic Preparation	Adjusted Spring GPA	% Return for 2nd Fall
Rule-followers- no FL	35%	4th	2.36	79%
Rule-followers- with FL	24%	3rd	2.34	75%
Social science lovers	24%	5th	2.26	74%
Science wannabes	6%	2nd	2.38	84%
Wanderers	8%	Worst	2.53	75%
Math avoiders	2%	Best	2.42	79%

First year cohorts with undecided majors
GPA by end of year 2

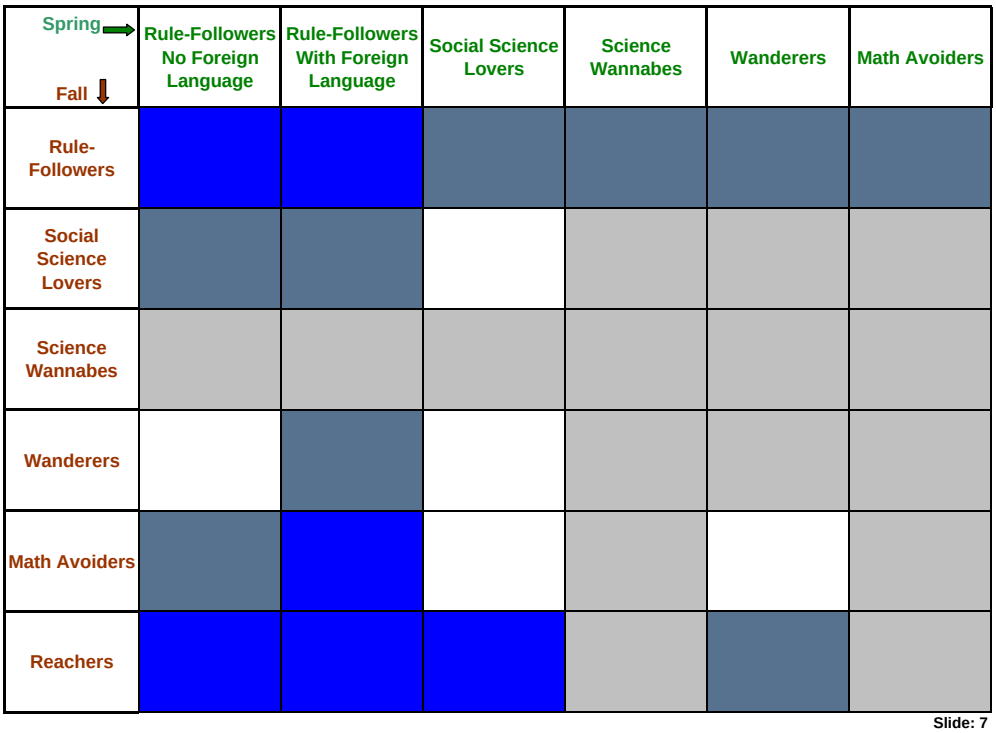


GPA adjusted for academic preparation

Slide: 6

2.6 and above | 2.3 to 2.5 | 2.2 and under

First year FTIC cohorts with undecided majors
Retained to third year



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Over 70% | 60% - 70% | Less than 60%

CONCLUSION

Who among the "undecideds" is most likely to succeed?

- Rule Followers

  Avoiding foreign language buys a slightly higher GPA.

- Reachers

- Avoiding math for the fall term is OK, but only if it gets picked up in the spring.

Who is at risk?

- Social Science Lovers who do not become rule-followers
- Wanders

Sample First Year Program for Biological Science Majors

First Semester		
	College Writing I	3 cr
	Math	3 cr
	Biodiversity	4 cr
	General Chemistry I	4 cr
	Total credits	14 cr

Second Semester		
	College Writing II	3 cr
	Math	3 cr
	Biological Principles	4 cr
	General Chemistry II	4 cr
	Total credits	14 cr

Final Cluster Centers for Biological Science Majors

First Fall Term

	Cluster					
	1	**2**	**3**	**4**	**5**	**6**
	N=51	*N=170*	*N=59*	*N=50*	*N=155*	*N=40*
English	2.65	2.91	2.85	1.98	2.67	1.43
Math	2.76	3.04	0.00	2.04	2.50	0.70
Social Science	4.71	1.94	3.36	1.08	0.39	0.38
Humanities	1.06	0.92	0.92	0.66	0.19	0.15
Science	0.45	3.90	3.90	2.68	8.02	7.93
Other	0.39	0.05	1.05	4.62	0.08	3.68

Centers = mean number of credit hours attempted in the discipline.

Description of Fall clusters:

1. **Social Science Lovers ….** Heavy on sociology, psychology, geography, and anthropology.
2. **Cautiously Approaching Science …. One** science course, filling in with social science & humanities.
3. **Math Avoiders ….** Substitute social science for math.
4. **Undecided ….** Taking foreign languages, honors courses, and sophomore level courses**.**
5. **Rule Followers ….** Do as advised.
6. **Scientists ….** Heavy on biology, chemistry, and advanced math.

Outcomes for Fall Clusters for Biological Science Majors

Cohorts Entering 1995-1998

Description of Fall Cluster	% of cohort N=525	High School GPA	Adjusted Fall GPA	% Return for Spring
Social science lovers	10%	Lowest	2.11	88%
Cautiously approaching science	32%	5th	2.23	84%
Math avoiders	11%	4th	2.15	86%
Undecided	10%	2nd	2.54	88%
Rule followers	30%	3rd	2.20	91%
Scientists	8%	Best	2.31	90%

Final Cluster Centers for Biological Science Majors

First Spring Term

	Cluster			
	1	**2**	**3**	**4**
	N=151	*N=103*	*N=96*	*N=77*
English	2.70	2.18	2.38	2.06
Math	2.46	1.90	1.74	1.22
Social Science	2.19	1.31	1.84	6.31
Humanities	1.62	0.58	0.97	1.21
Science	3.12	7.90	2.71	1.49
Other	0.05	0.51	4.29	0.74

Centers = mean number of credit hours attempted in the discipline.

Description of Spring clusters:

1. **Cautiously Approaching Science** …. One science course, filling in with social science & humanities (music, psychology).
2. **Almost Rule Followers ….** Suggested science, less math & English, filling in with psychology & music.
3. **Undecided ….** Foreign languages, advanced math, and sophomore level courses.
4. **Social Science Lovers ….**Heavy on courses like psychology, sociology, & geography.

Outcomes for Spring Clusters for Biological Science Majors

Cohorts Entering 1995-1998

Description of Spring Cluster	% of cohort N=427	High School GPA	Adjusted Spring GPA	% Return for 2nd Fall
Cautiously Approaching Science	35%	3rd	2.25	78%
Almost Rule Followers	24%	Best	2.43	88%
Undecided	23%	2nd	2.43	77%
Social Science Lovers	18%	Lowest	2.40	75%

First Year FTIC Cohorts with Biological Science Majors

GPA by End of Year 2

Spring → / Fall ↓	Cautiously Approaching Science	Almost Rule Followers	Undecided	Social Science Lovers
Social Science Lovers				
Cautiously Approaching Science				
Math Avoiders				
Undecided				
Rule Followers				
Scientists				

GPA adjusted for high school GPA

2.7 and above **2.3 to 2.6** **Under 2.3**

Slide: 6

First Year FTIC Cohorts 1995-97 with Biological Science Majors
Retained for Third Year

Spring → / Fall ↓	Cautiously Approaching Science	Almost Rule Followers	Undecided	Social Science Lovers
Social Science Lovers				
Cautiously Approaching Science				
Math Avoiders				
Undecided				
Rue Followers				
Scientists				

60% or more **40% to 59%**

Slide: 7

CONCLUSION

Who among the Biological Science majors is most likely to succeed?

- **Scientists – Almost Rule Followers** (2nd year GPA: 2.71; third fall retention: 75%)

  Committed to the major

- **Rule Followers – Social Science Lovers** (2.83; 60%)

  Keep following rules, social science helps GPA

  Students with science (heavy or light), or following rules in the first fall, will do better by the end of 2nd spring or 3rd fall.

Who is at risk?

- **Social Science Lovers – Undecided** (Highest GPA in 2nd spring; lowest retention rate in 3rd fall)

  Not sure what to do, not ready for science/FAU. Drop out and go somewhere else.