

## ***2003-2004 Assessment Data***

Brigham Young University  
CE En Dept.  
*Norm Jones*  
*August 26, 2004*


### ***Assessment Tools***

- Exam Competency Data
- Exit Interview Data
- Student Evaluations
- Alumni Surveys
- FE Exam

## Exam Competency Data

- Core component of assessment strategy
- Significant drop in participation since Fall 2002
- Thanks to those who continue to participate

## Exam Competency Data Archival



Home  
Objectives  
External Review  
Assessment  
Comp Track  
FE Exam  
Exit Interview  
Alumni Survey  
Student Eval

Brigham Young University

### Civil and Environmental ENGINEERING

#### Exam-Competency Assessment Archive

The following documents represent the exam competency scores for each semester since we began tracking exam-competency data in Fall semester 2000. The course assessment forms describing the interpretation of the data and any subsequent changes are also included.

Note: The files referenced in the first two columns of the following tables are Microsoft Excel files and can only be viewed if this page is browsed via Microsoft Internet Explorer. The course assessment forms are JPEG files and can be viewed with any browser.

**Fall Semester 2000**

Section	Exam Competency Scores	Semester Summary	Course Assessment
CE En 103-1	exam1_exam2_final1_final2	overall	assess form
CE En 103-2	exam1_exam2_final1_final2	overall	assess form
CE En 112			
CE En 113	exam1_exam2_final	overall	assess form
CE En 203	final	overall	assess form
CE En 204-1	exam1_exam2_final	overall	assess form
CE En 204-2	exam1_exam2_exam3_final	overall	assess form
CE En 270	exam1_exam2_final	overall	assess form
CE En 305	exam1_final	overall	assess form

<http://www.emrl.byu.edu/ceen/examcomp/comphist.htm>

# Participation vs. Semester

## Exam-Competency Assessment Archival History

Civil & Environmental Engineering - Brigham Young University

	F-00	W-01	Sp-01	Su-01	F-01	W-02	Sp-02	Su-02	F-02	W-03	Sp-03	Su-03	F-03	W-04	Sp-04	Su-04
CE En 103-1																
CE En 103-2																
CE En 112																
CE En 113																
CE En 203-1																
CE En 203-2																
CE En 204-1																
CE En 204-2																
CE En 270																
CE En 271																
CE En 305																
CE En 321																
CE En 332																
CE En 341																
CE En 351																
CE En 361																
CE En 424																
CE En 431																
CE En 433																
CE En 470																
ReIC 491/492																

Legend:   
 = course not offered   
 = assessment completed   
 = no assessment

# Exit Interview Data

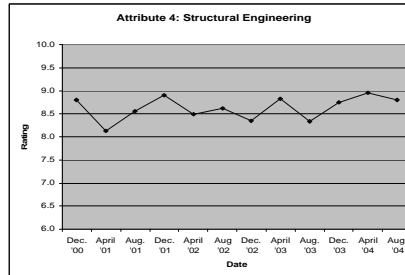
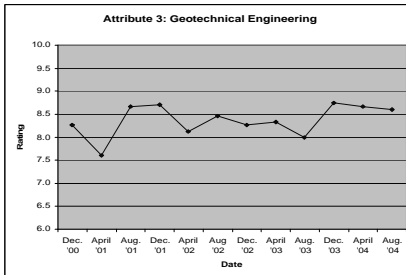
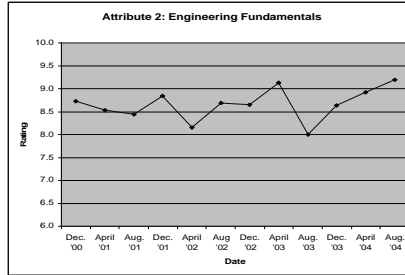
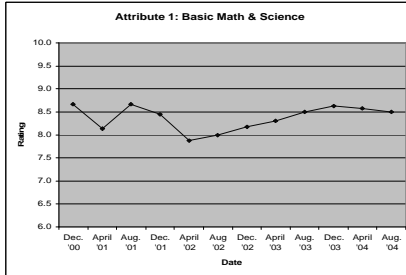
## Exit Interview Result History

CE En Dept. - Brigham Young University

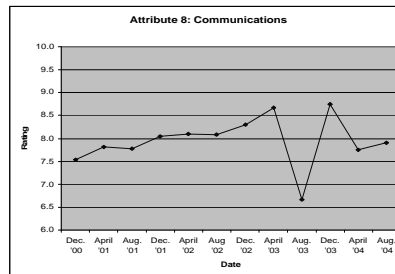
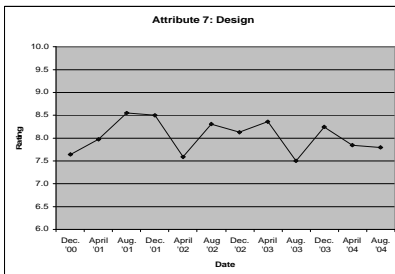
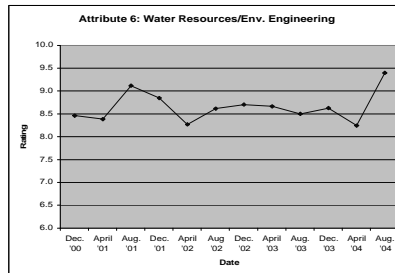
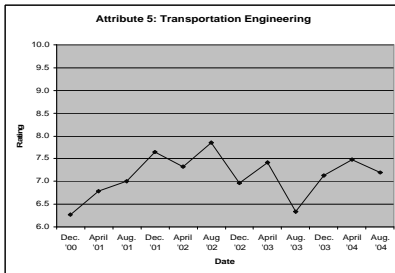
Attribute	Dec. '00	April '01	Aug. '01	Dec. '01	April '02	Aug. '02	Dec. '02	April '03	Aug. '03	Dec. '03	April '04	Aug. '04	Average	Scaled
1. Basic math & science	8.7	8.1	8.7	8.5	7.9	8.0	8.2	8.3	8.5	8.6	8.6	8.5	8.4	83.7
2. Engineering fundamentals	8.7	8.5	8.4	8.9	8.2	8.7	8.7	9.1	8.0	8.6	8.9	9.2	8.7	86.6
3. Geotechnical engineering	8.3	7.6	8.7	8.7	8.1	8.5	8.3	8.3	8.0	8.8	8.7	8.6	8.4	83.7
4. Structural engineering	8.8	8.1	8.6	8.9	8.5	8.6	8.4	8.8	8.3	8.8	9.0	8.8	8.6	86.3
5. Transportation engineering	8.3	6.8	7.0	7.7	7.3	7.9	7.0	7.4	8.3	7.1	7.5	7.2	7.1	71.2
6. Water resource/env. Eng.	8.5	8.4	9.1	8.9	8.3	8.6	8.7	8.7	8.5	8.6	8.3	9.4	8.7	86.5
7. Design	7.6	8.0	8.6	8.5	7.6	8.3	8.1	8.4	7.5	8.3	7.9	7.8	8.0	80.4
8. Communications	7.5	7.8	7.8	8.1	8.1	8.1	8.3	8.7	6.7	8.8	7.8	7.9	8.0	79.5
9. Modern engineering tools	7.5	8.7	8.9	8.6	8.5	9.1	9.3	9.2	6.7	8.6	8.8	8.8	8.6	85.5
10. Professional practice	8.7	8.5	9.0	9.3	8.6	8.9	8.6	9.2	7.8	8.9	9.0	9.8	8.9	88.6
11. Cult. soc. env. Awareness	8.3	8.0	8.4	7.9	8.0	8.3	8.9	8.1	6.8	8.6	7.2	7.8	8.0	80.4
12. Integrity, faith	9.6	9.3	9.6	9.7	9.1	9.5	9.6	9.6	8.7	9.8	9.8	9.2	9.4	94.5

Attribute	Dec. '03	April '04	Aug. '04
1. Basic math & science	8.6	8.6	8.5
2. Engineering fundamentals	8.6	8.9	9.2
3. Geotechnical engineering	8.8	8.7	8.6
4. Structural engineering	8.8	9.0	8.8
5. Transportation engineering	7.1	7.5	7.2
6. Water resource/env. Eng.	8.6	8.3	9.4
7. Design	8.3	7.9	7.8
8. Communications	8.8	7.8	7.9
9. Modern engineering tools	8.6	8.8	8.8
10. Professional practice	8.9	9.0	9.8
11. Cult. soc. env. Awareness	8.6	7.2	7.8
12. Integrity, faith	9.8	9.8	9.2

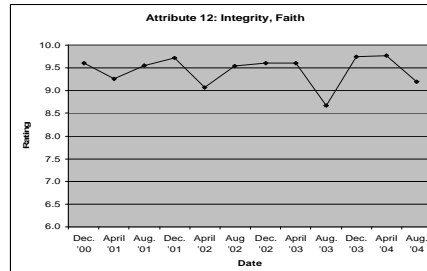
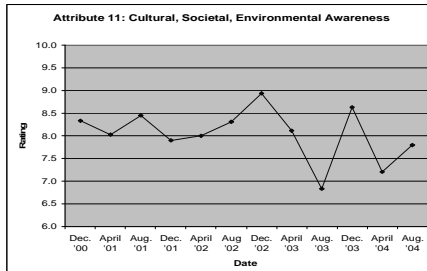
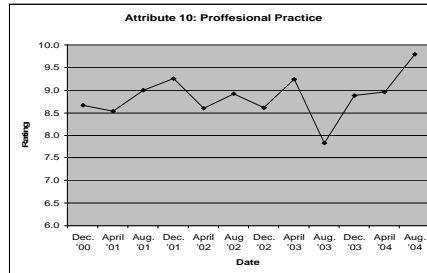
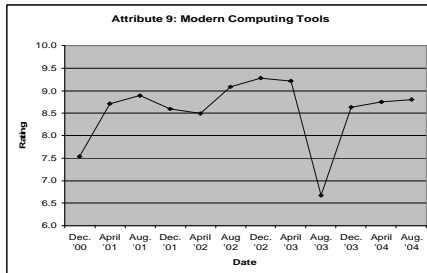
## Exit Interview Trends (1-4)



## Exit Interview Trends (5-8)



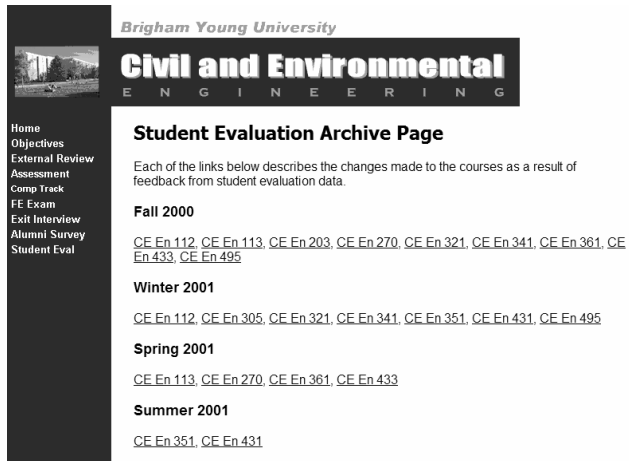
## Exit Interview Trends (9-12)



## Student Evaluations

- Participation good (in terms of collecting data)
- Problems with following through on the analysis of the data

# Student Evaluation Data



The screenshot shows a web page for Brigham Young University's Civil and Environmental Engineering department. It features a navigation menu on the left with links to Home, Objectives, External Review, Assessment, Comp Track, FE Exam, Exit Interview, Alumni Survey, and Student Eval. The main content area is titled "Student Evaluation Archive Page" and includes a brief description of the page's purpose. It lists course evaluations for three semesters: Fall 2000, Winter 2001, and Summer 2001, with specific course numbers and links for each.

Brigham Young University

**Civil and Environmental**  
ENGINEERING

**Student Evaluation Archive Page**

Each of the links below describes the changes made to the courses as a result of feedback from student evaluation data.

**Fall 2000**

[CE En 112](#), [CE En 113](#), [CE En 203](#), [CE En 270](#), [CE En 321](#), [CE En 341](#), [CE En 361](#), [CE En 433](#), [CE En 495](#)

**Winter 2001**

[CE En 112](#), [CE En 305](#), [CE En 321](#), [CE En 341](#), [CE En 351](#), [CE En 431](#), [CE En 495](#)

**Spring 2001**

[CE En 113](#), [CE En 270](#), [CE En 361](#), [CE En 433](#)

**Summer 2001**

[CE En 351](#), [CE En 431](#)

<http://www.emrl.byu.edu/ceen/studenteval/evalarchive.htm>

## Alumni Surveys

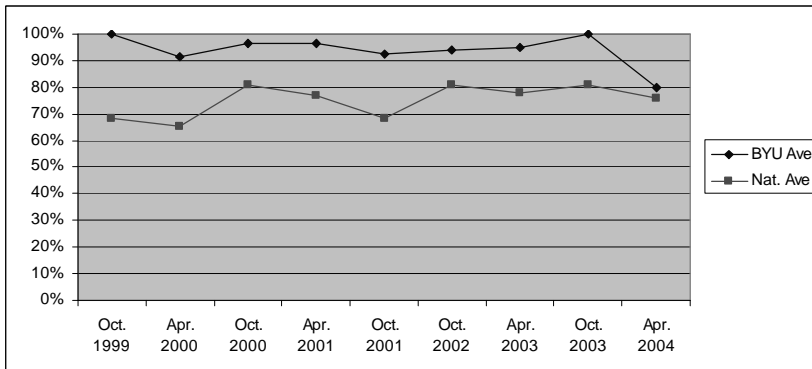
- Last survey Spring 2001
- Next survey Fall 2004

## FE Exam

		# Taking	# Passing	% Passing
Oct. 1999	BYU	40	40	100%
	Nat'l	2410	1645	68%
Apr. 2000	BYU	23	21	91%
	Nat'l	3224	2104	65%
Oct. 2000	BYU	28	27	96%
	Nat'l	1587	1286	81%
Apr. 2001	BYU	29	28	97%
	Nat'l	2337	1801	77%
Oct. 2001	BYU	53	49	92%
	Nat'l	2789	1910	68%
Apr. 2002	BYU	27	25	93%
	Nat'l	2541	2019	79%
Oct. 2002	BYU	34	32	94%
	Nat'l	1688	1369	81%
Apr. 2003	BYU	21	20	95%
	Nat'l	2530	1980	78%
Oct. 2003	BYU	27	27	100%
	Nat'l	1684	1364	81%
Apr. 2004	BYU	25	20	80%
	Nat'l	2808	2139	76%

## FE Exam Trends

	Oct. 1999	Apr. 2000	Oct. 2000	Apr. 2001	Oct. 2001	Oct. 2002	Apr. 2003	Oct. 2003	Apr. 2004
BYU	100%	91%	96%	97%	92%	94%	95%	100%	80%
National	68%	65%	81%	77%	68%	81%	78%	81%	76%



# FE Results by Topic

## FE Exam Results - Overall Summary

CE En Dept. - Brigham Young University

Category	Attribute	Oct 1999	Apr 2000	Oct 2000	Apr 2001	Oct 2001	Apr 2002	Oct 2002	Apr 2003	Oct 2003	Apr 2004	Mean
Chemistry	1	63.0	62.0	65.0	65.0	73.0	68.0	63.0	75.0	64.0	60.0	65.8
Computers	9	84.0	64.0	72.0	88.0	77.0	77.0	73.0	55.0	80.0	75.0	74.5
Dynamics	2	60.0	45.0	62.0	65.0	56.0	60.0	69.0	65.0	66.0	52.0	60.1
Elect. Circuits		42.0	35.0	31.0	45.0	39.0	40.0	31.0	30.0	29.0	25.0	34.7
Eng. Economics	7	63.0	66.0	81.0	74.0	73.0	79.0	73.0	58.0	64.0	57.0	68.8
Ethics	12	85.0	78.0	89.0	84.0	83.0	67.0	69.0	73.0	71.0	76.0	77.5
Fluid Mechanics	2	73.0	67.0	54.0	75.0	67.0	60.0	61.0	57.0	75.0	64.0	65.3
Materials	2	73.0	57.0	61.0	66.0	58.0	55.0	69.0	56.0	66.0	57.0	61.8
Mathematics	1	66.0	66.0	64.0	65.0	69.0	67.0	70.0	68.0	78.0	67.0	68.0
Mechanics	2	65.0	56.0	54.0	75.0	70.0	65.0	68.0	55.0	69.0	59.0	63.5
Statics	2	76.0	56.0	67.0	60.0	66.0	68.0	70.0	61.0	63.0	61.0	64.8
Thermodynamics		48.0	52.0	53.0	61.0	61.0	55.0	58.0	54.0	54.0	42.0	53.8
Const. Mgmt.		87.0	52.0	50.0	31.0	37.0	52.0	40.0	49.0	54.0	53.0	50.5
Comp/Num Mthds	9	67.0	76.0	77.0	79.0	63.0	77.0	64.0	56.0	69.0	64.0	69.2
Environmental Eng.	6	74.0	54.0	58.0	56.0	73.0	55.0	54.0	75.0	71.0	59.0	62.9
Hydric/Hydrolg	6	58.0	43.0	74.0	57.0	67.0	67.0	75.0	64.0	64.0	33.0	60.2
Legal/Prof Aspects	10	68.0	81.0	60.0	63.0	67.0	65.0	83.0	84.0	53.0	89.0	71.3
Structural Analysis	4	63.0	59.0	57.0	42.0	63.0	54.0	65.0	41.0	64.0	51.0	55.9
Structural Design	4,7	43.0	57.0	58.0	48.0	39.0	39.0	39.0	41.0	39.0	51.0	45.4
Soil Mech & Found	3	48.0	75.0	43.0	65.0	66.0	37.0	64.0	52.0	66.0	59.0	57.5
Surveying	9	65.0	54.0	69.0	44.0	66.0	65.0	51.0	58.0	75.0	49.0	59.6
Transportation	5	58.0	60.0	63.0	67.0	58.0	56.0	54.0	51.0	70.0	42.0	58.9
Water Treatment	6	55.0	56.0	67.0	53.0	65.0	57.0	58.0	56.0	75.0	62.0	60.4

Attribute	Oct 1999	Apr 2000	Oct 2000	Apr 2001	Oct 2001	Apr 2002	Oct 2002	Apr 2003	Oct 2003	Apr 2004	Mean
1. Basic math & science	64.5	64.0	64.5	65.0	71.0	67.5	66.5	71.5	71.0	63.5	66.9
2. Engineering fundamentals	69.4	56.0	59.6	68.4	63.4	61.6	67.4	58.8	67.8	58.6	63.1
3. Geotechnical engineering	48.0	75.0	43.0	65.0	66.0	37.0	64.0	52.0	66.0	59.0	57.5
4. Structural engineering	53.0	58.0	57.5	45.0	51.0	46.5	52.0	41.0	51.5	51.0	50.7
5. Transportation engineering	58.0	60.0	63.0	67.0	58.0	56.0	54.0	51.0	70.0	42.0	58.9
6. Water resource/lev. Eng.	62.3	51.0	66.3	55.3	68.3	59.7	62.3	65.0	70.0	51.3	61.2
7. Design	53.0	61.5	69.5	61.0	56.0	59.0	56.0	49.5	51.5	54.0	57.1
8. Communications	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
9. Modern engineering tools	72.0	64.7	72.7	70.3	69.7	73.0	62.7	56.3	74.7	62.7	67.8
10. Professional practice	68.0	81.0	60.0	63.0	67.0	65.0	83.0	84.0	53.0	86.0	71.3
11. Cult. soc. env. Awareness	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
12. Integrity, faith	85.0	78.0	89.0	84.0	83.0	67.0	69.0	73.0	71.0	76.0	77.5

# Exam Categories

Category	Outcome	BYU	Nat'l	Diff
Chemistry	1	66	59	7
Computers	9	75	60	15
Dynamics	2	60	56	4
Elect. Circuits		35	40	-5
Eng. Economics	7	69	62	7
Ethics	12	78	73	5
Fluid Mechanics	2	65	57	8
Materials	2	62	53	9
Mathematics	1	68	56	12
Mechanics	2	64	57	7
Statics	2	65	57	8
Thermodynamics		54	44	10
Const. Mgmt.		51	47	3
Comp/Num Mthds	9	69	53	16
Environmental Eng.	6	63	56	7
Hydric/Hydrolg	6	60	51	10
Legal/Prof Aspects	10	71	65	6
Structural Analysis	4	56	51	5
Structural Design	4,7	45	44	1
Soil Mech & Found	3	58	50	8
Surveying	9	60	48	12
Transportation	5	59	49	10
Water Treatment	6	60	52	8



## ***Exam Categories (sorted)***

Category	Outcome	BYU	Nat'l	Diff
Comp/Num Mthds	9	69	53	16
Computers	9	75	60	15
Surveying	9	60	48	12
Mathematics	1	68	56	12
Thermodynamics		54	44	10
Hydrlc/Hydrolog	6	60	51	10
Transportation	5	59	49	10
Materials	2	62	53	9
Fluid Mechanics	2	65	57	8
Statics	2	65	57	8
Water Treatment	6	60	52	8
Soil Mech & Found	3	58	50	8
Eng. Economics	7	69	62	7
Environmental Eng.	6	63	56	7
Mechanics	2	64	57	7
Chemistry	1	66	59	7
Legal/Prof Aspects	10	71	65	6
Structural Analysis	4	56	51	5
Ethics	12	78	73	5
Dynamics	2	60	56	4
Const. Mgmt.		51	47	3
Structural Design	4,7	45	44	1
Elect. Circuits		35	40	-5

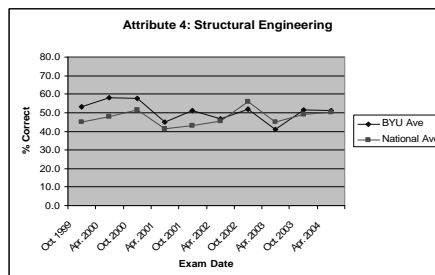
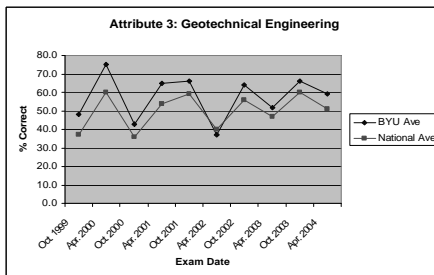
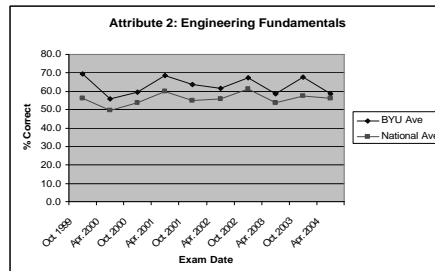
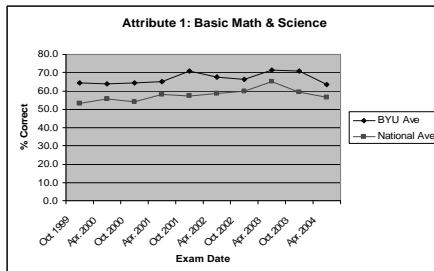
## ***Results by Attribute***

Outcome	BYU	Nat'l	Diff
1. Basic math & science	66.9	57.8	9.2
2. Engineering fundamentals	63.1	55.8	7.3
3. Geotechnical engineering	57.5	50.0	7.5
4. Structural engineering	50.7	47.5	3.2
5. Transportation engineering	58.9	49.4	9.5
6. Water resource/env. Eng.	61.2	53.0	8.2
7. Design	57.1	53.1	4.1
8. Communications	n/a	n/a	n/a
9. Modern engineering tools	67.8	53.5	14.2
10. Professional practice	71.3	65.2	6.1
11. Cult., soc., env. Awareness	n/a	n/a	n/a
12. Integrity, faith	77.5	72.5	5.0

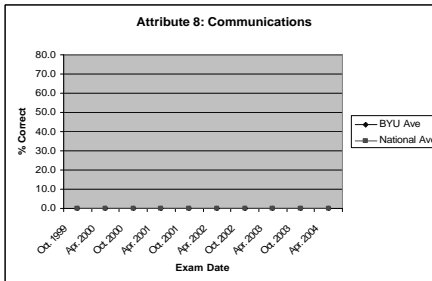
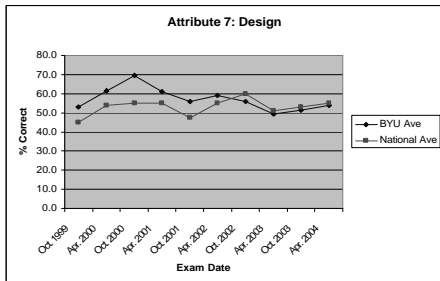
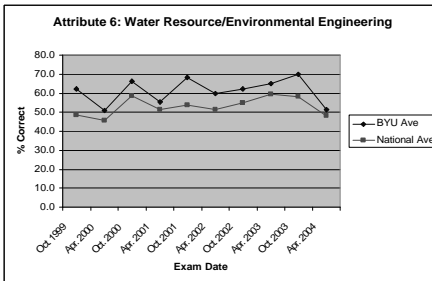
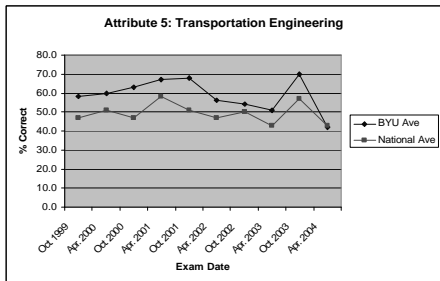
## Results by Attribute (sorted)

Outcome	BYU	Nat'l	Diff
8. Communications	n/a	n/a	n/a
11. Cult., soc., env. Awareness	n/a	n/a	n/a
9. Modern engineering tools	67.8	53.5	14.2
5. Transportation engineering	58.9	49.4	9.5
1. Basic math & science	66.9	57.8	9.2
6. Water resource/env. Eng.	61.2	53.0	8.2
3. Geotechnical engineering	57.5	50.0	7.5
2. Engineering fundamentals	63.1	55.8	7.3
10. Professional practice	71.3	65.2	6.1
12. Integrity, faith	77.5	72.5	5.0
7. Design	57.1	53.1	4.1
4. Structural engineering	50.7	47.5	3.2

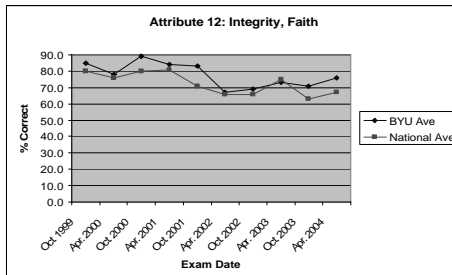
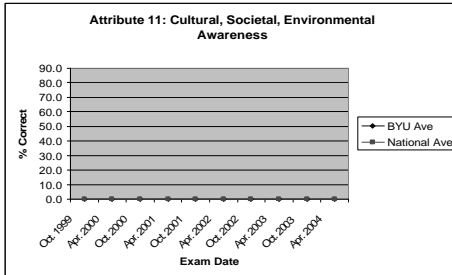
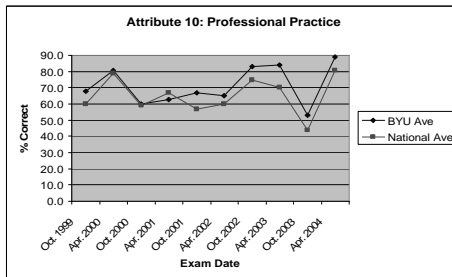
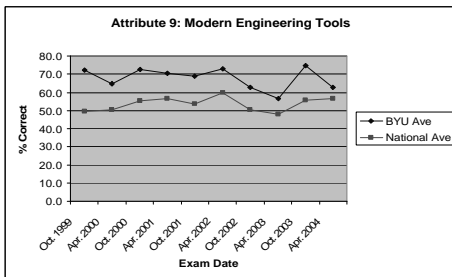
## FE Exam Trends (1-4)



## FE Exam Trends (5-8)



## FE Exam Trends (9-12)



## ***Future Directions***

- Support university accreditation process
- Restore faculty participation
- Move to more automation in data collection and analysis