

ALEKS: Placing students and beyond!

S.I.G.M.A Seminar Series

University of Connecticut

By

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Outline

- What is ALEKS.
- Which students need to take ALEKS.
- FAQ on ALEKS implementation.
- Instruction change and implementation.
- Data analysis from Fall 2013.
- Data collection for Spring 2014.

What is ALEKS?

- Assessment and LEarning in Knowledge Spaces
- Artificial intelligence assessment tool.
- Adaptive questioning to accurately determine strengths and weaknesses of students in mathematical knowledge.
- Provides options of remediation to get better.
- Places students based on their prior knowledge.

Who needs to take ALEKS at UConn?

- All Engineering majors.
- All degree programs that confer BS degrees to students.
- Several majors from CLAS
 - Biology
 - Chemistry
 - Mathematics etc.
- List of all majors can be found here
 - <http://placement.uconn.edu/mathematics-placement>

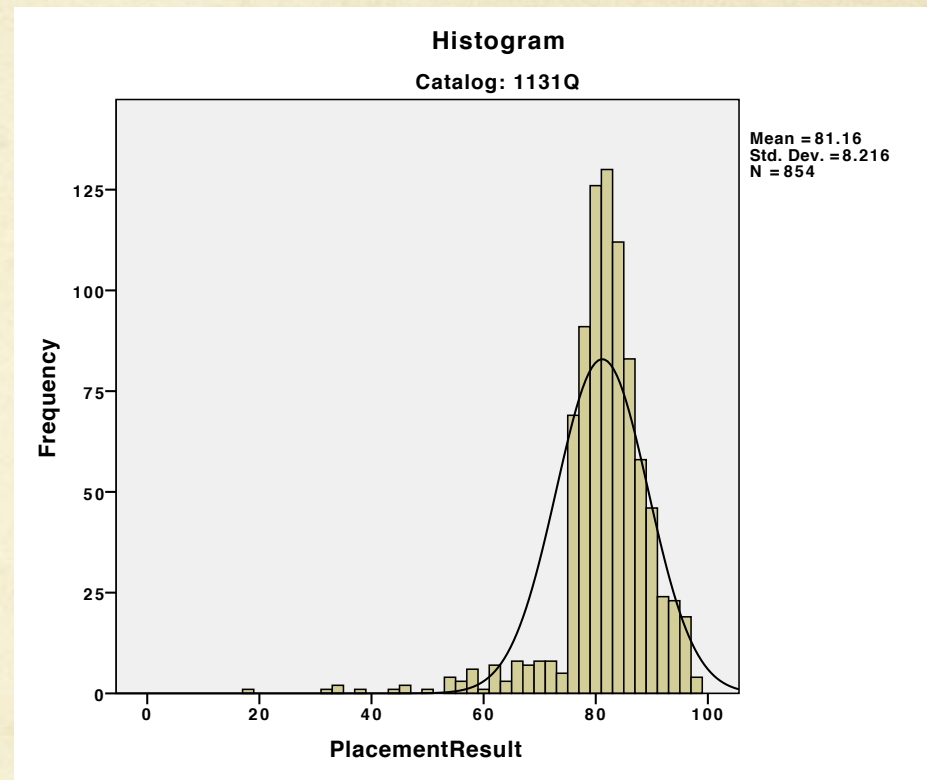
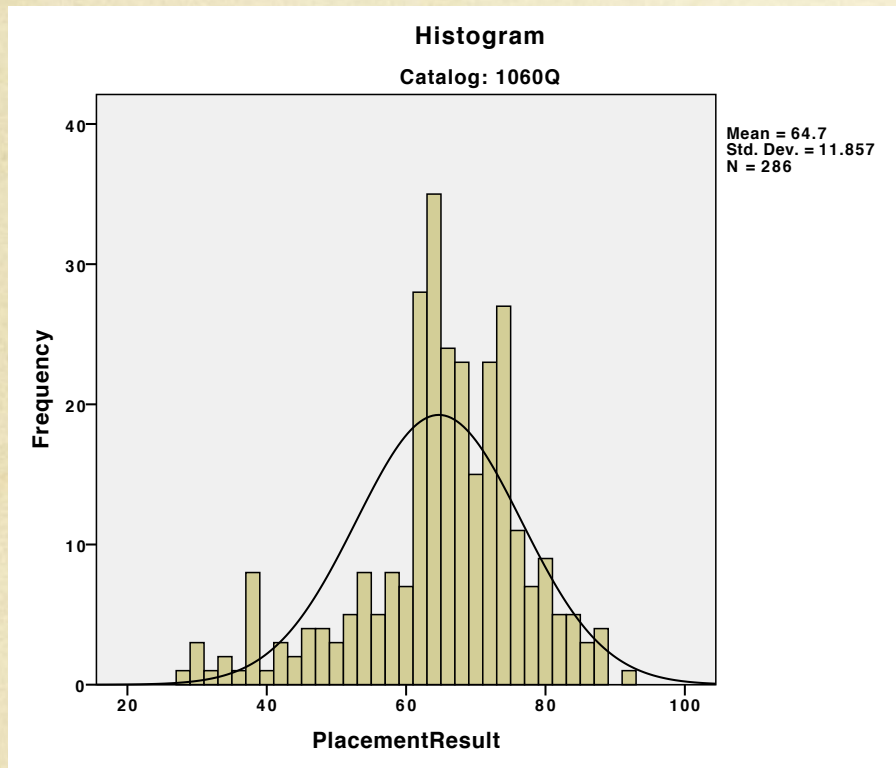
How does the placement work at UConn?

- Freshmen students take ALEKS before their orientation.
- The placement score is used to place them in appropriate Math course.
 - 76% and above place in Math 1131.
 - 75% and 61% placed in Math 1060.
- For Math 1131/1151 and Math 1132/Math1152 ALEKS placement score is a required pre-requisite.
- ALEKS score is recommended for Math1060

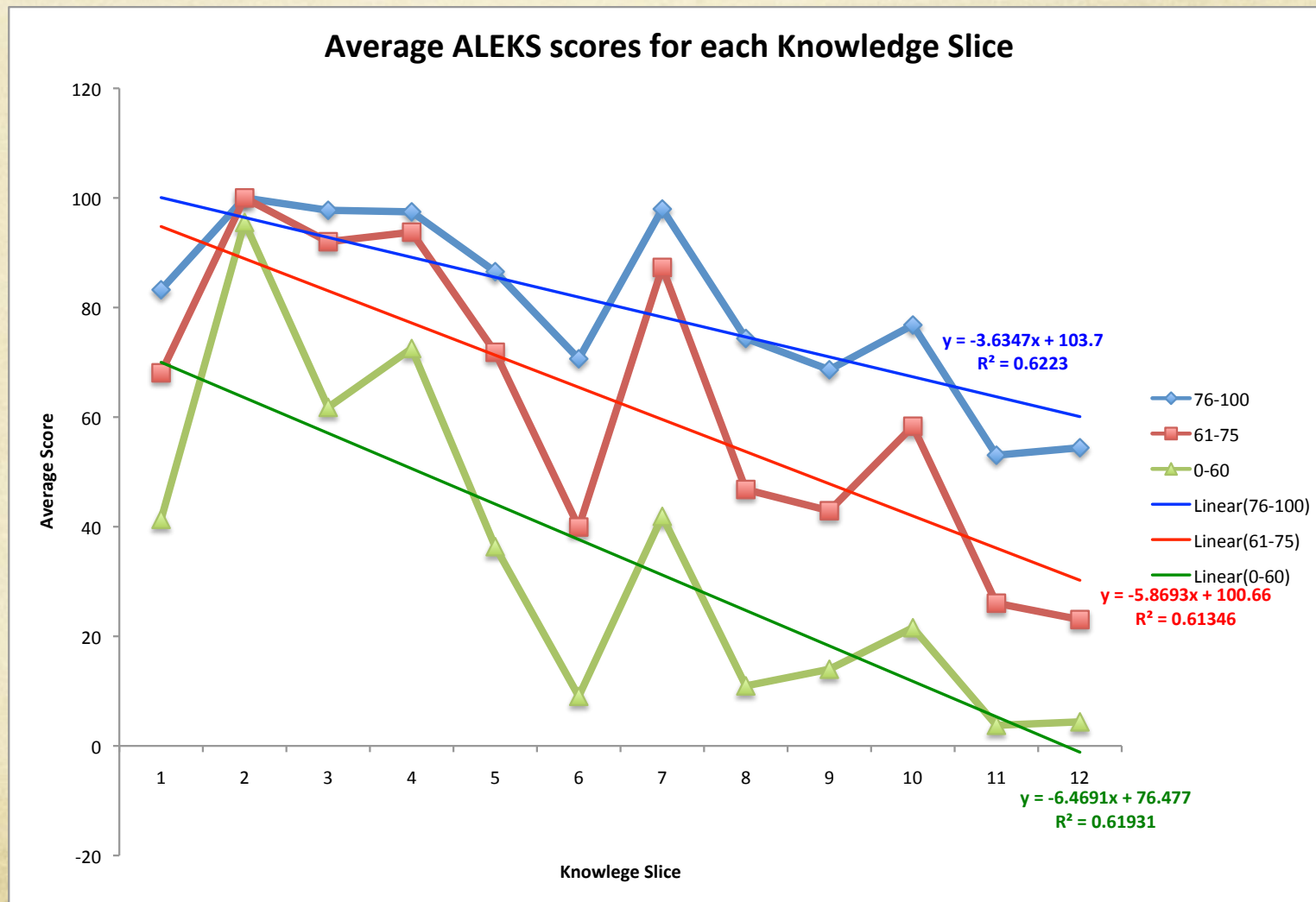
What about transfer students, AP, ECE credits?

- Transfer students who have credit for Math 1131 need to have an ALEKS score to be placed in Math 1132.
- Students with transferred AP credits and ECE credits also need to take ALEKS placement exam and get a qualifying score to be allowed to enroll in Math 1132.

ALEKS score distribution for Fall 2013



Key for Instruction is ALEKS knowledge slices!



Change in instruction for pre-calculus and Calculus

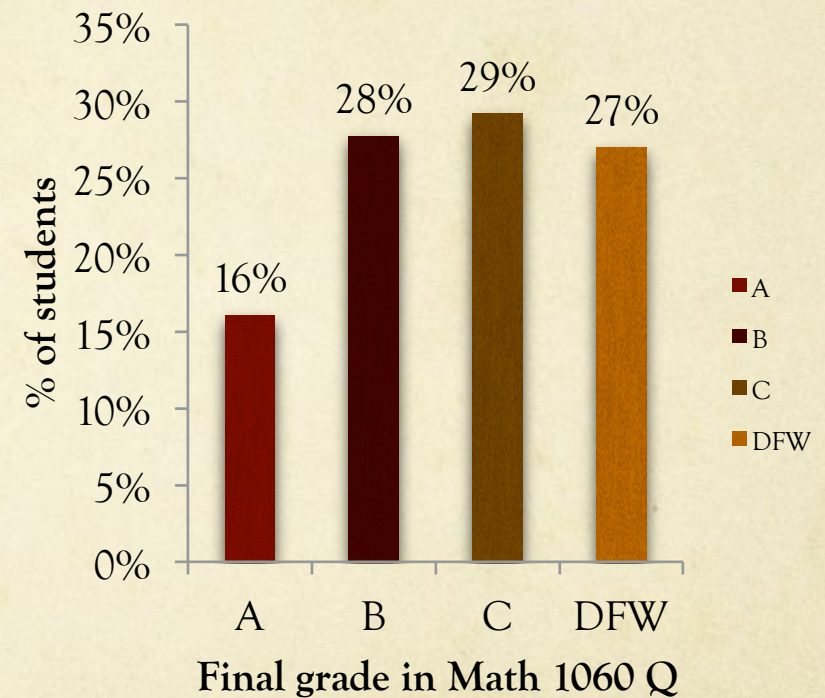
- Math 1060
 - More rigorous in terms of pre-calculus material
 - Focus of logs, exponential functions, trigonometry.
 - Assessments in term of written quizzes.
 - Should be able to get qualifying scores in ALEKS.
- Math 1131
 - More quizzes online and in-class.
 - Worksheets to address specific knowledge gaps.

DATA ANALYSIS MATH 1060

Grades of students in Math 1060 who took ALEKS

Letter Grade in Math 1060	Number of students	Percentage
A	44	16
B	76	28
C	80	29
DFW	74	27
TOTAL	274	100

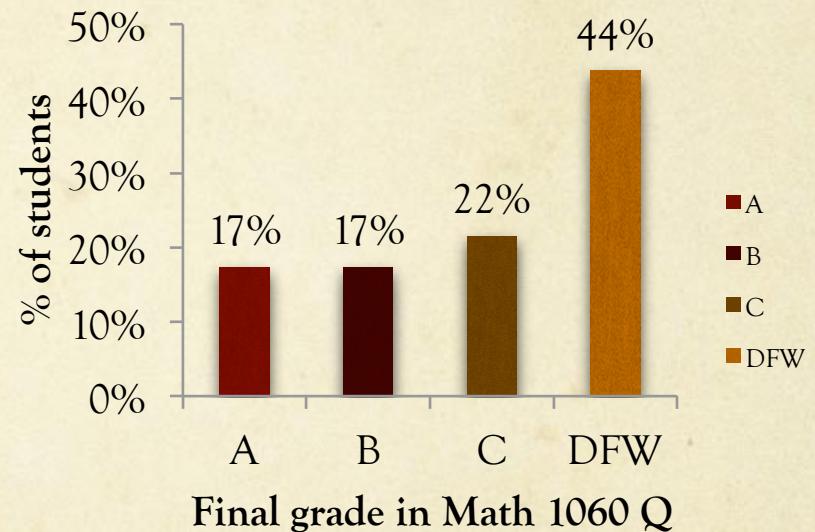
Grade distribution of students in Math1060 who took ALEKS



Grades of students in Math 1060 who did not take ALEKS

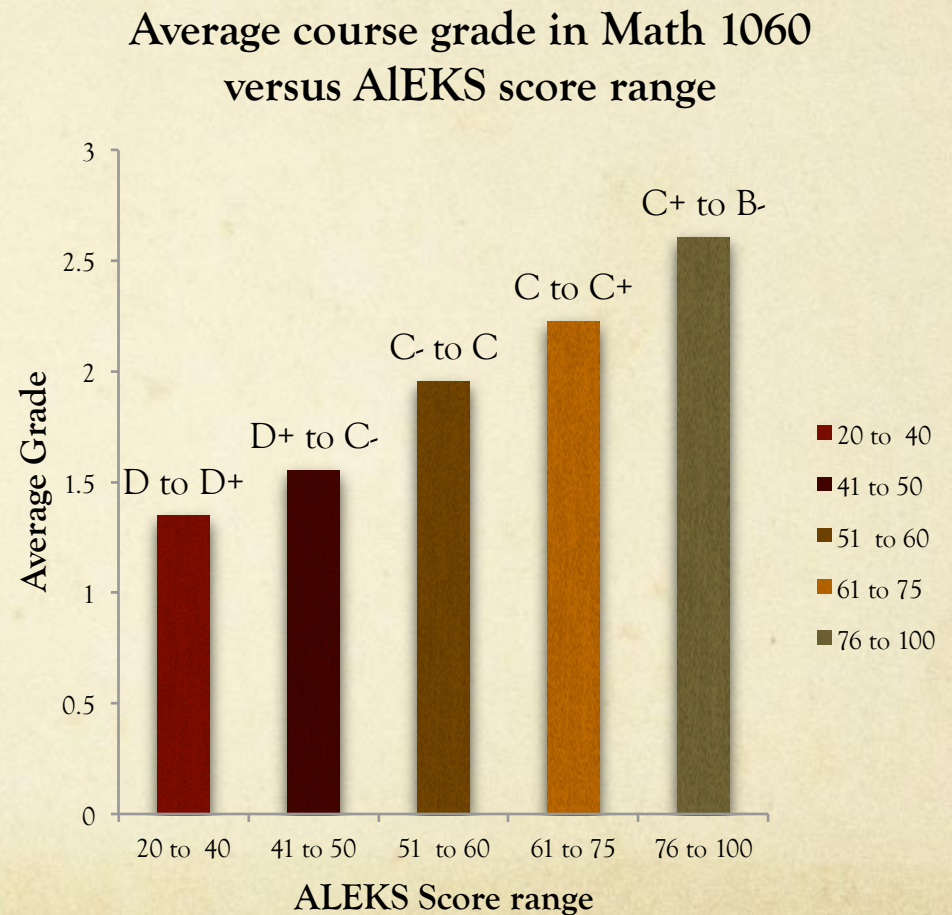
Letter Grade in Math 1131	Number of students	Percentage
A	25	17
B	25	17
C	31	22
DFW	63	44
TOTAL	144	100

Grade distribution of students in Math1060 who did not take ALEKS



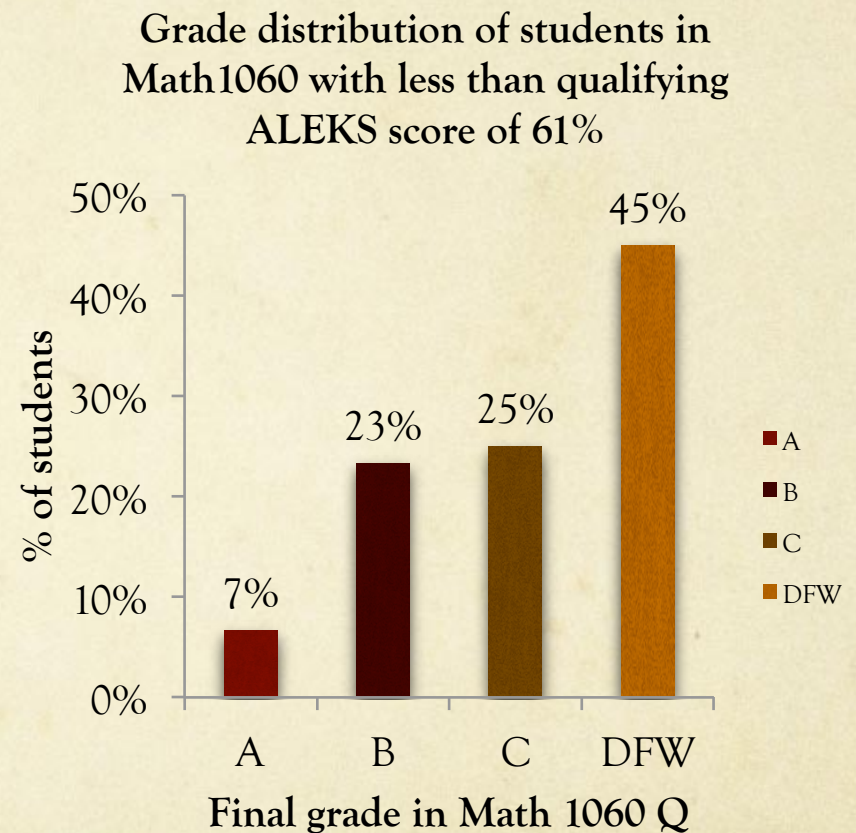
Average course grade range for a given ALEKS score range for students in Math 1060

Number of student	ALEKS Score Range	Grade Range
17	20 to 40	D to D+
13	41 to 50	D+ to C-
30	51 to 60	C- to C
174	61 to 75	C to C+
40	76 to 100	C+ to B-
274	Total	



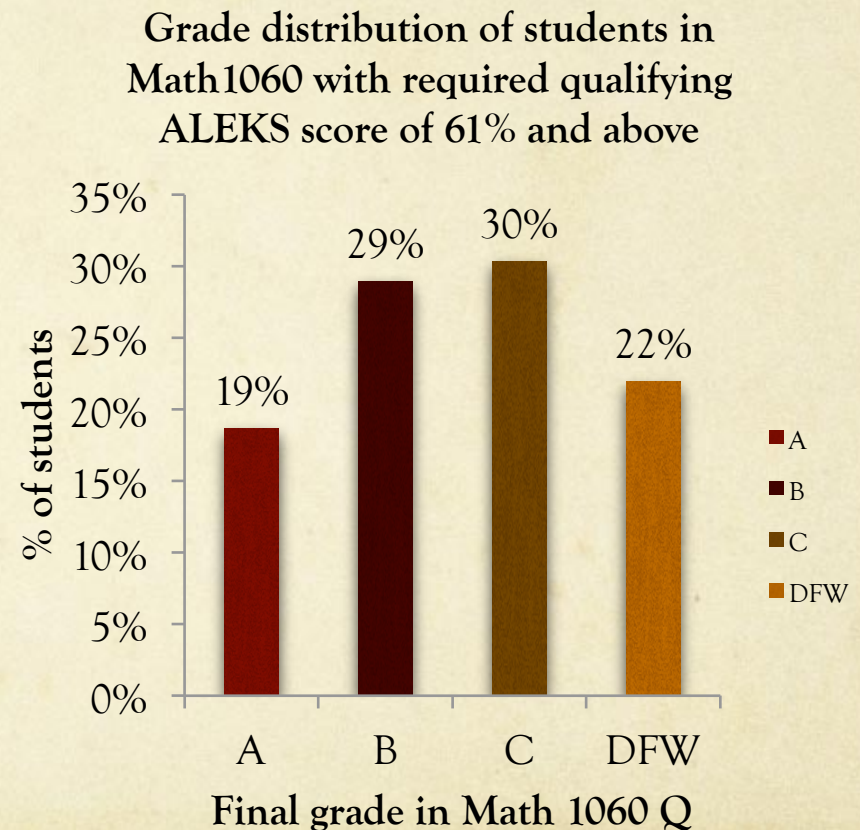
Grade distribution of students in Math 1060 with less than qualifying ALEKS score of 61%

Grade	Number of Students	Percentage
A	4	7
B	14	23
C	15	25
DFW	27	45
Total	60	



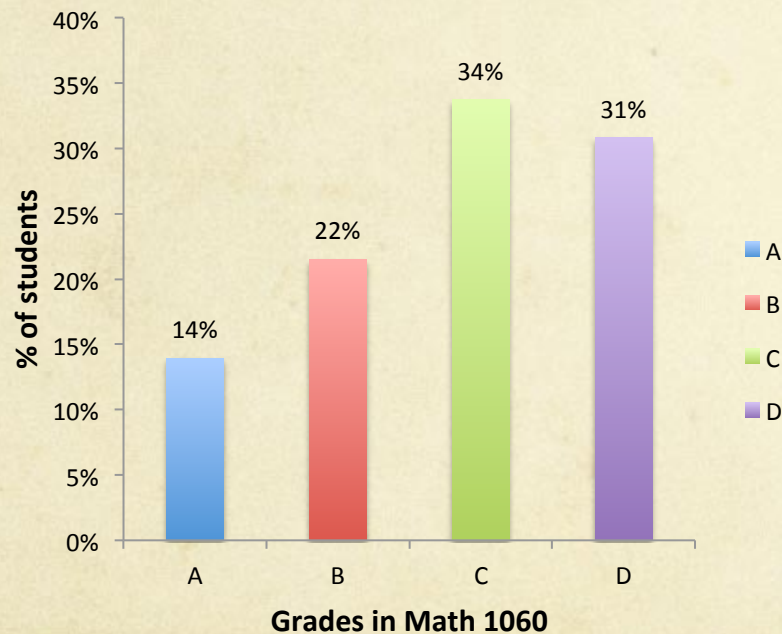
Grade distribution of students in Math 1060 with recommended qualifying ALEKS score of 61% and above

Grade	Number of Students	Percentage
A	40	19
B	62	29
C	65	30
DFW	47	22
Total	214	100



Grades distribution for students in Math 1060 who took ALEKS as pretest (N =172)

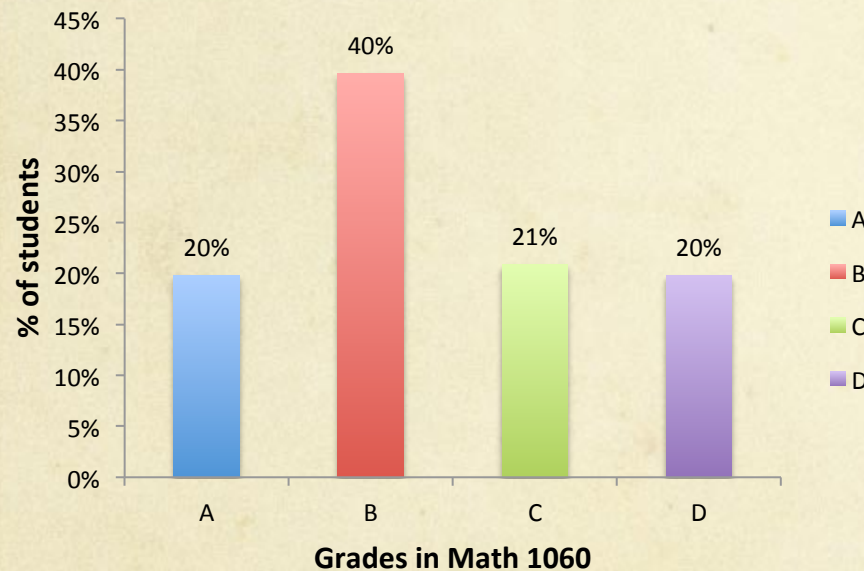
**Grade distribution of students in Math
1060 who took ALEKS only as a Pretest (N
= 172)**



Grades in Math 1060	ALEKS Pretest	Percentage
A	24	14
B	37	22
C	58	38
D	53	31
TOTAL	172	100.0

Grades distribution for students in Math 1060 who took ALEKS as pretest and post test and obtained qualifying score of 76% and above in post test. (N = 96)

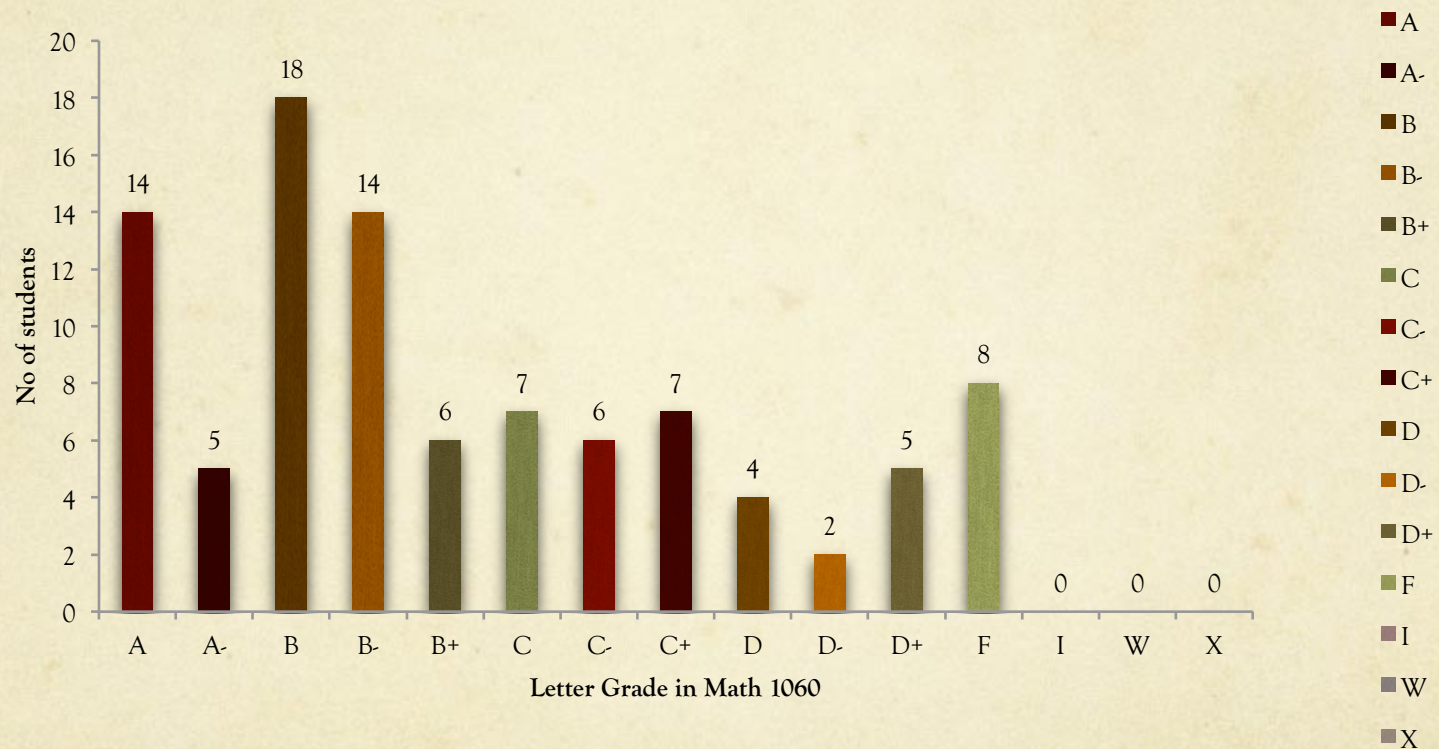
Grade distribution of students in Math 1060 who got a qualifying ALEKS score of 76% and above as a Posttest (N=96)



Grades in Math 1060	ALEKS Pretest and Post test	Percentage
A	19	20
B	38	40
C	20	21
D	19	20
TOTAL	96	100.0

Grade distribution of students in Math 1060 who got qualifying score of 76% on ALEKS post test to qualify for Math 1131.

Grade distribution of students in Math 1060 who got qualifying scores on ALEKS post test.

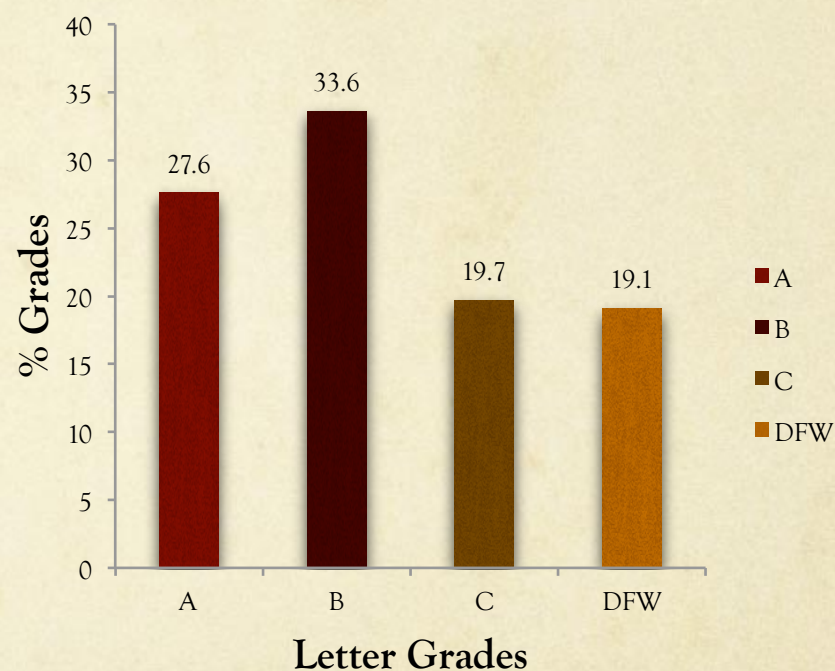


DATA ANALYSIS MATH 1131

Grades of student in Math 1131 who took ALEKS

Letter Grade in Math 1131	Number of students	Percentage
A	231	27.6
B	281	33.6
C	165	19.7
DFW	160	19.1
TOTAL	837	100

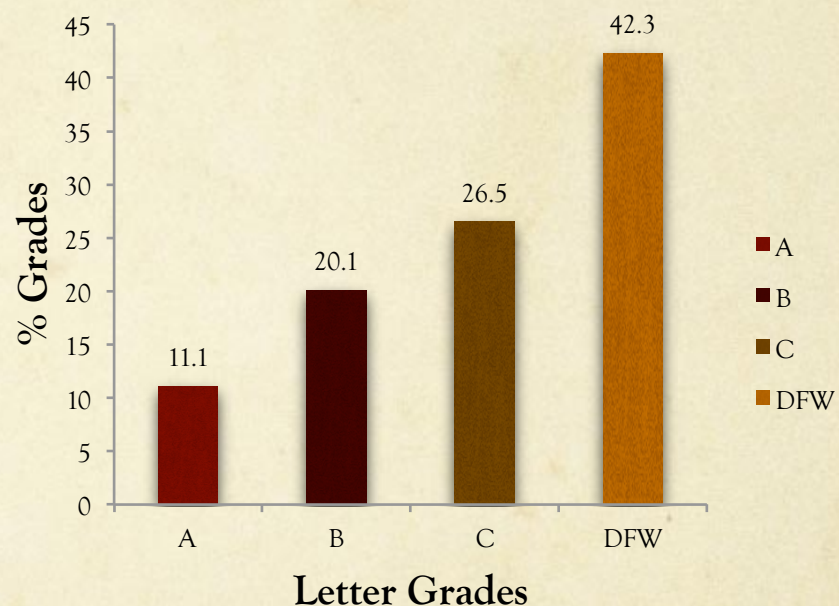
Grade distribution for students who took ALEKS



Grades of students in Math 1131 who did not take ALEKS

Letter Grade in Math 1131	Number of students	Percentage
A	21	11.1
B	38	20.1
C	50	26.5
DFW	80	42.3
TOTAL	189	100

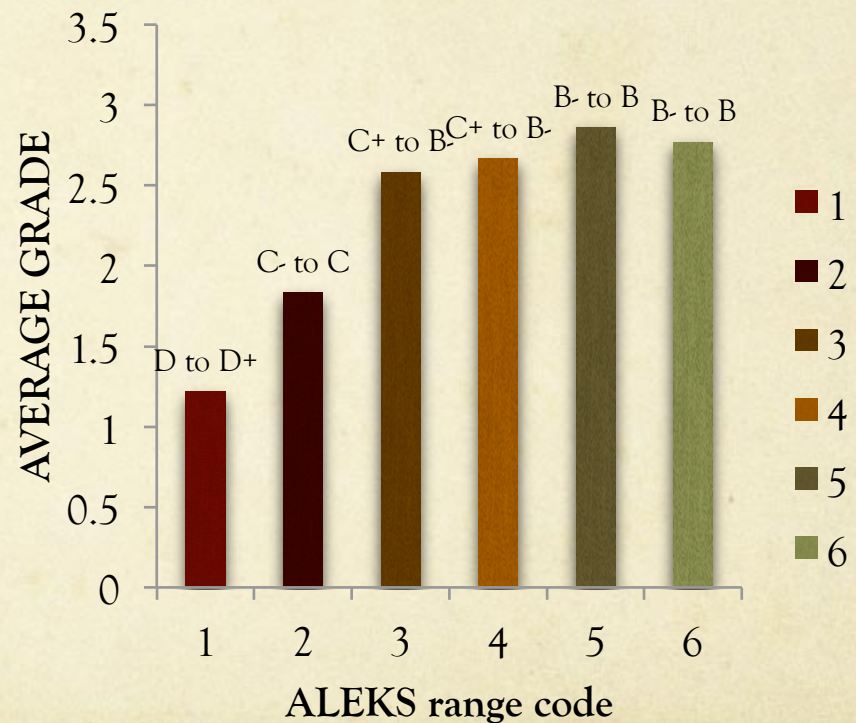
Grade distribution for students who did not take ALEKS



Average course grade range for a given ALEKS score range for students in Math 1131

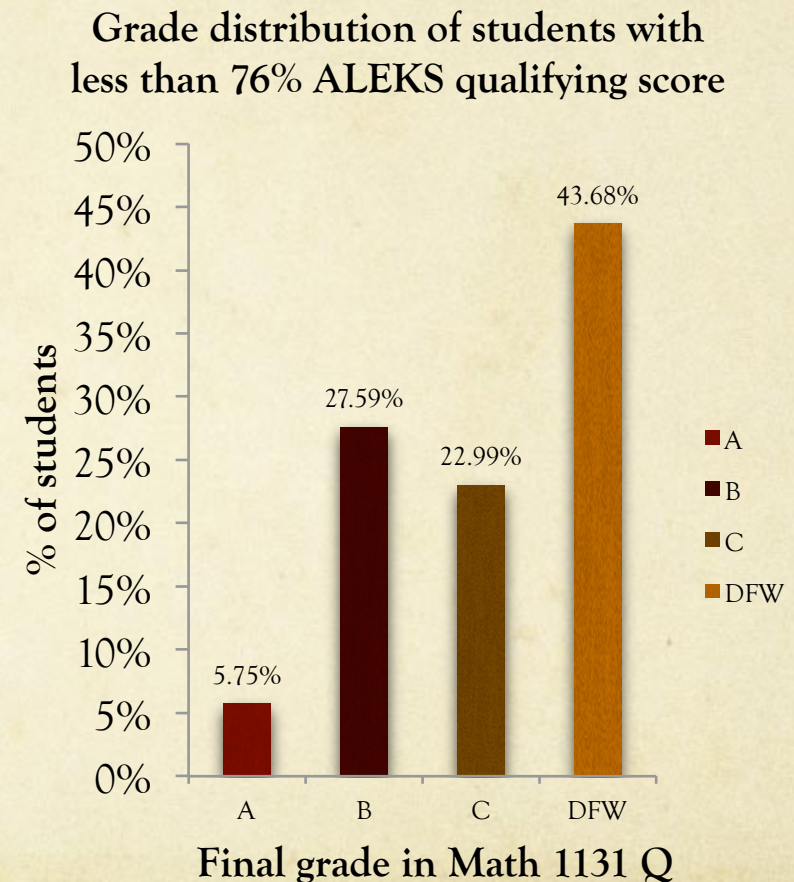
Range Code	ALEKS Score Range	Grade Range
1	0 to 60	D to D+
2	61 to 75	C- to C
3	76 to 80	C+ to B-
4	81 to 85	C+ to B-
5	86 to 90	B- to B
6	90 to 100	B- to B

Average grade versus ALEKS score range



Grade distribution of students in Math 1131 with less than qualifying ALEKS score of 76%

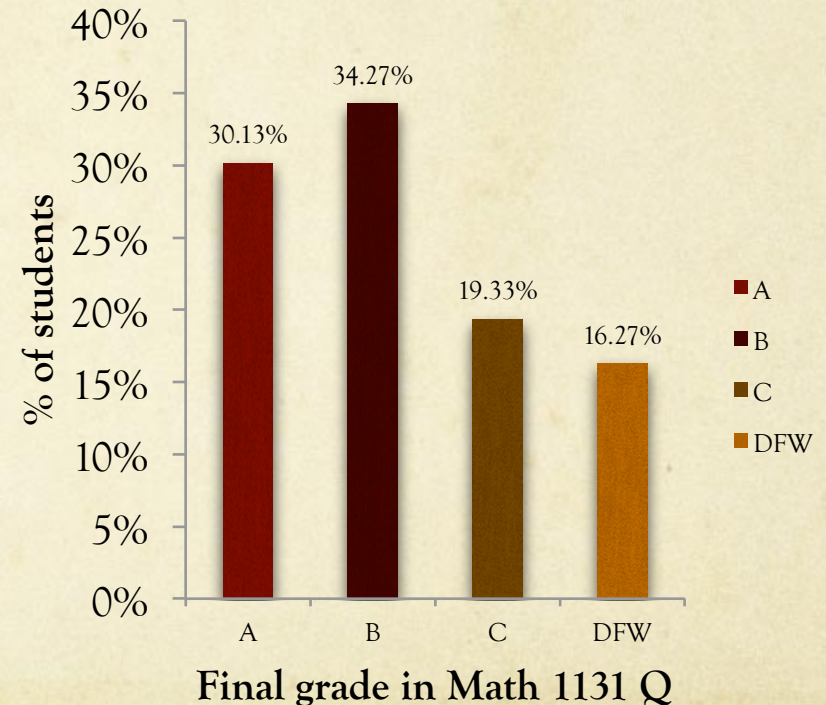
Grade	Number of Students	Percentage
A	5	5.74
B	24	27.58
C	20	22.98
DFW	38	43.67
Total	87	



Grade distribution of students in Math 1131 with required qualifying ALEKS score of 76% and above

Grade	Number of Students	Percentage
A	226	30.13
B	257	34.26
C	145	19.33
DFW	122	16.26
Total	750	

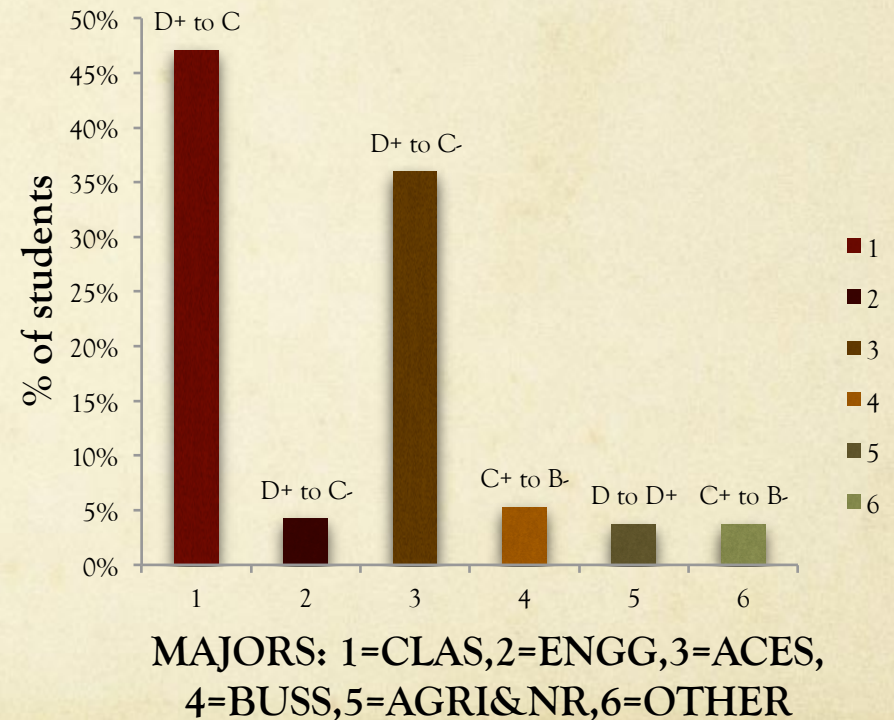
Grade distribution of students with
greater than 76% ALEKS qualifying
score



Grade distribution by Majors for students who did not take ALEKS.

Major	Number of students	Percent	Average Grade Range
CLAS	89	47.09	D+ to C-
ENGG	8	4.23	D+ to C-
ACES	68	35.98	D+ to C-
BUSS	10	5.29	C+ to B-
AGRI&NR	7	3.70	D to D+
OTHERS	7	3.70	C+ to B-
Total	189	100	D to D+

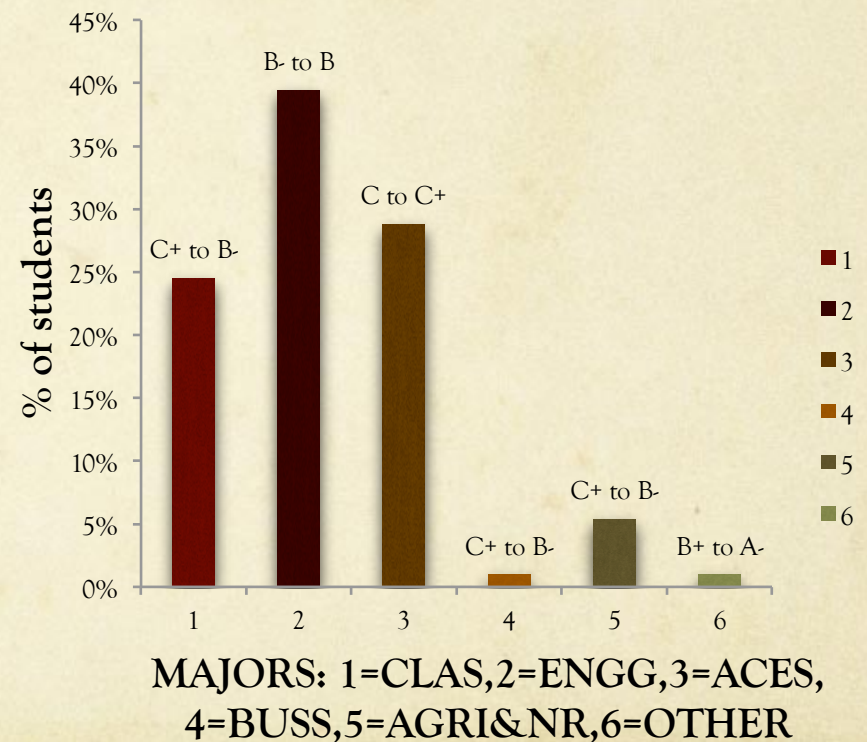
Average grade by majors for student who did not take ALEKS



Grade distribution by Majors for students who took ALEKS.

Major	Number of students	Percent	Average Grade Range
CLAS	205	24.49	C+ to B-
ENGG	330	39.43	B- to B
ACES	241	28.79	C to C+
BUSS	8	0.96	C+ to B-
AGRI&NR	45	5.38	C+ to B-
OTHERS	8	0.96	B+ to A-
Total	837	100	C+ to B-

Average grade by majors for student who took ALEKS



Data collection for Spring 2014

- New data integration portal created.
- Upload data into a secure site.
- <https://qcmath.uits.uconn.edu>
- Works with the wired connection only.
- Accessing this website from outside use VPN.

Thank You!

- All the TAs for Math 1060, Math 1131 in Fall 2013
- Steven Pon for Math 1060 data analysis.
- Jeff Winston from ACES for data integration and merging.
- Jonathan Judge for creating the new website.

Questions?