University System of Georgia: Math Preparation & Core Math Courses

Presentation to CAO Meeting October 2001
Average SAT Math Score of USG First-Time Freshmen
Fall 1984 – Fall 2000

Note: All scores are re-centered. Source: SIRS Data; USG Office of Strategic Research and Analysis, October 2001.
Average SAT Math Score of USG First-Time Freshmen by Sector, Fall 2000

<table>
<thead>
<tr>
<th>Sector</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Univ.</td>
<td>590</td>
</tr>
<tr>
<td>Regional Univ.</td>
<td>506</td>
</tr>
<tr>
<td>State Univ.</td>
<td>497</td>
</tr>
<tr>
<td>State Colleges</td>
<td>462</td>
</tr>
<tr>
<td>Two-Year Colleges</td>
<td>443</td>
</tr>
</tbody>
</table>

Note: All scores are re-centered. Source: SIRS Data; USG Office of Strategic Research and Analysis, October 2001.
Completion of College Preparatory Curriculum in Math
Number of First-Time Freshmen (Same Year HS Grads) Who Did Not Complete CPC Math Courses in High School, Fall 1995--Fall 2000

Source: SIRS
Percentage of First-Time Freshmen (Same Year HS Grads) Who Did Not Complete CPC Math Courses in High School, Fall 1995--Fall 2000

Source: SIRS; based on degree-seeking students (CPC N and E are removed from base). USG SRA, October 2001.
Number of First-Time Freshmen (Same Year HS Grads) by Number of CPC Math Course Deficiencies Fall 2000

Source: SIRS; based on degree-seeking students (CPC N and E are removed from base). USG SRA, October 2001.
Number of First-Time Freshmen (Same Year HS Grads) with CPC Math Course Deficiencies
Fall 2000 by Sector

Source: SIRS; based on degree-seeking students (CPC N and E are removed from base). USG SRA, October 2001.
Placement in Learning Support in Math
Learning Support in Math

- More USG students require LS in math than in reading or English.
  - True at both level of System requirements and institutional requirements.
- More USG students volunteer to take LS math courses than in other two areas.
Total Number of Students Enrolled in LS—Math, Fall 1995--Fall 2000

Note: USG students enrolled in fall term are counted according to their LS requirements. Some students have requirements but are not enrolled. SIRS Data.
Total Number of First-Time Freshmen Enrolled in LS—Math, Fall 1995--Fall 2000

![Bar graph showing the total number of first-time freshmen enrolled in LS—Math from Fall 1995 to Fall 2000. The graph includes data for System Requirements, Institutional Requirements, and Volunteers.](source: SIRS)
Percentage of First-Time Freshmen Enrolled in LS—Math, Fall 1995--Fall 2000

Source: SIRS
Percentage of First-Time Freshmen Enrolled in LS Math Because of System Requirements
Fall 1995--Fall 2000

Source: SIRS
First-Time Freshmen
Proportion Enrolled in LS-Math by Sector: Fall 1995

First-Time Freshmen
Proportion Enrolled in LS-Math by Sector: Fall 2000

- **Research Univ.**
  - System Requirements: 0.4
  - Institutional Requirements: 1.9

- **Reg. Univ.**
  - System Requirements: 1.4
  - Institutional Requirements: 6

- **State Univ.**
  - System Requirements: 3
  - Institutional Requirements: 9.7

- **State Colleges**
  - System Requirements: 6.3
  - Institutional Requirements: 25.4

- **Two-Year Colleges**
  - System Requirements: 6.8
  - Institutional Requirements: 31.5

Relationship Between Placement in Learning Support in Math & CPC Completion in Math
Percentage of First-Time Freshmen* with CPC Deficiencies Who Have LS—Math Requirements, Fall 1995

Note: * denotes that first-time freshmen were restricted to same-year HS graduates. Source: SIRS; USG SRA, October 2001.
Percentage of First-Time Freshmen* with CPC Deficiencies Who Have LS—Math Requirements, Fall 2000

Note: * denotes that first-time freshmen were restricted to same-year HS graduates. Source: SIRS; USG SRA, October 2001.
University System of Georgia
Grades in Courses in Math
Issues in Studying Math Grades

- Pass rates
  - Are students prepared to continue?
  - What is an adequate pass rate for a System?

- Withdrawal rates
  - Why do students withdraw? How often?
  - Do these students eventually succeed?

- Do students who complete LS-Math succeed in LS math?

- Major choice
  - Are LS students effectively prohibited from pursuing majors that require Math 1113?

- Do transfer students do as well in math as native students?
# Numbers of Students Taking Math 1101, Math 1111, and Math 1113
All USG Institutions

<table>
<thead>
<tr>
<th>Course</th>
<th>Native No LS Req. in Math</th>
<th>Native LS-System Req. Math</th>
<th>Native LS-Inst. Req. in Math</th>
<th>Transfers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 1101</td>
<td>8,375</td>
<td>1,697</td>
<td>1,905</td>
<td>4,006</td>
</tr>
<tr>
<td>Math 1111</td>
<td>15,681</td>
<td>3,006</td>
<td>3,905</td>
<td>674</td>
</tr>
<tr>
<td>Math 1113</td>
<td>10,339</td>
<td>644</td>
<td>588</td>
<td>3,048</td>
</tr>
</tbody>
</table>

Note: Core/LS SIRS Feedback Data, 1999-2000. USG Office of Strategic Research & Analysis October 2000
Math 1111 and Math 1101

- Almost twice as many students take Math 1111 as Math 1101.
- Few students who have taken learning support courses in math later take Math 1113.
  - LS students are limited from pursuing many majors.
Grades in Math 1111
College Algebra
All USG Institutions
Course Grades for Math 1111—College Algebra

Notes: N=20,190 for all students with no transfer history who are took the course. Core/LS SIRS Feedback Data, 1999-2000. USG Office of Strategic Research & Analysis, October 2001.
Percentage of Students with Course Grades in Math 1111--All USG Institutions by Sector: Native Students

Percentage of Students by Course Grades in Math 1111--All USG Institutions by Sector: Transfer Students

Note: Core/LS SIRS Feedback Data, 1999-2000. USG Office of Strategic Research & Analysis October 2001
Percentage of Course Grades
Math 1111--All USG Institutions by LS Status

Notes: N=20,190 for all students with no transfer history who are took the course; n=3,096 for those with LS-System requirement in math and no transfer history; n=15,681 for those with no LS requirement in math and no transfer history; n=1,413 for those with an LS-institutional requirement in math and no transfer history. Note: Core/LS SIRS Feedback Data, 1999-2000, USG Office of Strategic Research & Analysis, October 2001.
All USG Institutions
Course Grades for Math 1111—College Algebra

Notes: N=20,190 for all students with no transfer history who are took the course.
Math 1111
Success Rates of Native Students

- Almost half of those who did not require LS do not successfully complete Math 1111 (A, B, or C).

- Among those who required LS at the System level, 64 percent did not successfully complete Math 1111 in 1999-2000.
Percentage of Students by Course Grades for Math 1111—College Algebra
All USG Institutions—Native Students

Notes: N=20,190 for all students with no transfer history who took the course; n=3,096 for those with LS-System requirement in math and no transfer history; n=15,681 for those with no LS requirement in math and no transfer history; n=1,413 for those with an LS-institutional requirement in math and no transfer history. Core/LS SIRS Feedback Data, 1999-2000, USG Office of Strategic Research & Analysis, October 2001.
Grades in Courses in Math 1101—Introduction to Mathematics Modeling
Proportion of Native Students by Course Grades for Math 1101—Math Modeling by All USG Institutions

Notes: N=11,111 for all students with no transfer history who are took the course. Note: Core/LS SIRS Feedback Data, 1999-2000. USG Office of Strategic Research & Analysis, October 2001.
Transfer students withdrew at a rate of 29 percent, compared to 21 percent for native students.
All USG Institutions
Completion Rates for Math 1111
Native vs. Transfer Students

Notes: N=20,190 for all students with no transfer history who are took the course, and N=4,085 for transfer students who took the course.
Proportion of Native Students by Course Grades in Math 1101
All USG Institutions by LS Status

Notes: N=11,111 for all students with no transfer history who are took the course; n=1,697 for those with LS-System requirement in math and no transfer history; n=8,375 for those with no LS requirement in math and no transfer history; n=1,039 for those with an LS-institutional requirement in math and no transfer history. October 2001; USG SRA.
Grades in Courses in Math 1113—Pre-Calculus
Percentage of Students by Course Grades for Math 1113—Pre-Calculus: Native vs. Transfer Students at All USG Institutions

Notes: N=11,791 for all students with no transfer history who are took the course, and N=4,193 for transfer students who took the course.
Percentage of Students by Course Grades for Math 1113—Pre-Calculus:
By LS Requirements for Native Students/All USG Institutions

Notes:  N=11,791 for all students with no transfer history who are took the course.
USG Math Majors
Number of Math & Math Education Baccalaureate Degrees, USG FY1999—FY2001

Source: SIRS
Percentage of Baccalaureate Degrees in Math: USG FY2001

- Non-Math Grads: 98.9%
- Math Grads: 0.8%
- Math Educ. Grads: 0.2%
Number of Math Baccalaureate Degrees, FY2001
By Race/Ethnicity & Gender

Source: SIRS. If a race/ethnic category is not shown, no degrees were produced in that category in FY2001. USG SRA 2001. N=163 for CIP code 27.
Number of Math Education Baccalaureate Degrees in USG, FY2001
By Race/Ethnicity & Gender

Source: SIRS. If a race/ethnic category is not shown, no degrees were produced in that category in FY2001. USG SRA 2001. N = 49 for CIP=13.1311.
Doctorates in Math in USG

Of 723 doctorates conferred by USG institutions in FY2001:

- 22 were in math
  - White: 2 males; 5 females
  - Hispanic: 1 male
  - Non-Resident Aliens: 12 males; 2 females
- 9 were in math education
  - White: 2 males; 6 females
  - Non-Resident Alien: 1 male