### UHH Mathematics Tutoring Lab Login Analysis

<table>
<thead>
<tr>
<th>Number of Logins</th>
<th>F 01 – Sp 02</th>
<th>Fall 02</th>
<th>Spring 03</th>
<th>Su 03</th>
<th>Fall 03</th>
<th>Spring 04</th>
<th>Su 04</th>
<th>Fall 04</th>
<th>Spring 05</th>
<th>Su 05</th>
<th>Fall 05</th>
<th>Spring 06</th>
<th>Su 06</th>
<th>Fall 06</th>
<th>Spring 07</th>
<th>Su 07</th>
<th>Fall 07</th>
<th>Spring 08</th>
<th>Total</th>
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<tbody>
<tr>
<td></td>
<td>3200</td>
<td>481</td>
<td>766</td>
<td>194</td>
<td>2395</td>
<td>1361</td>
<td>453</td>
<td>2279</td>
<td>1314</td>
<td>109</td>
<td>942²</td>
<td>1606</td>
<td>216</td>
<td>995³</td>
<td>2329</td>
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<td>3315</td>
<td>2485</td>
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<td>Students</td>
<td>n/a</td>
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<td>328</td>
<td>251</td>
<td>75</td>
<td>347</td>
<td>250</td>
<td>27</td>
<td>n/a</td>
<td>about 587</td>
<td>n/a</td>
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<td>Logins for Math</td>
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<td>2726</td>
<td>1121</td>
<td>448</td>
<td>1832</td>
<td>1021</td>
<td>108</td>
<td>763</td>
<td>1690</td>
<td>2512</td>
<td>1825</td>
<td>5100</td>
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<td>Logins for Physics</td>
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<td>108</td>
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<td>339</td>
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<tr>
<td>Logins for Others</td>
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<td>32</td>
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</tr>
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<td>Hawaiians Yes/No</td>
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<td>43/410</td>
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<tr>
<td>% of Hawaiians</td>
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<td>15%</td>
<td>9.5%</td>
<td>15%</td>
<td>13%</td>
<td>25%</td>
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</tr>
</tbody>
</table>

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1. Data estimated from graph
2. Login program unavailable
3. Login program not functional for two months
4. Inaccurate number, program not used efficiently, should be average of 10 per day.
5. Includes computer science
Math Tutoring Lab – Number of Logins 2002/2008

• NOTE: Logins are not distinct students; a student may visit the lab multiple times during a day or month.
• NOTE: Not all students that use the lab log in.
• Numbers before Fall 2003 are small due to not having a supervisor for the lab. Tutors did not show up regularly, logins were not always enforced, no training for tutors etc.
• Numbers are highest during the fall semester since more math classes are being offered, exception Fall 2005 and 2006.
• Fall 2005: login program not working properly, paper method instead, numbers recorded do not reflect accurate lab usage.
• Fall 2006: login program not functioning for 2 months.
• Numbers during the summer are lower due to fewer math classes being offered. Summer 2007 low due insufficient use of login program. Tutor claims that an average of 10 students per day visited the lab.
• Numbers are very low for summer 05 due to construction of College Hall and the new location of the lab.
• Numbers are slightly lower for the year 2004/05 compared to 2003/04, reason unknown.
• Numbers for Spring and Summer 2006 are higher than in previous years, most likely due to more tutors, tutor training, spacious room, and improved facility.
• 2007/08 is first full year with well working login program. Note that the numbers are significantly higher.
• OVERALL TREND: increasing!
• Since August 2003 all students are logged out at the end of the day.
• NOTE: Logins are not distinct students; a student may visit the lab multiple times during a day or month.
• NOTE: Not all students that use the lab log in.
• Some days more than 50 students (not distinct) will use the lab, this supports the need of two or more tutors per hour.
• Note that the numbers of logins was consistently 30 or above since the spring of 2007.
• The next page shows the average number of logins per day.
• We are working on analyzing peak time use in the lab, data will be available.
The averages show how many students (not unique) on average visit the lab every day, this is a very good indicator for how many tutors are needed. Identified peak times usually last from 10am until 2pm. Assuming that some day 30+ people visit the lab during that peak times on average, it is absolutely necessary to have more than at least (if not more) two tutors working. The actual numbers should be higher than the graph shows due to weekends and holidays when the lab is closed. Note the increase for Spring and Summer 2006, as well as 2007/08. Recall: low number for Fall 2005/06 due to no login program.
Logins per Semester for Fall and Spring – 2002/2008

- 2002: no supervisor.
- 2003: supervisor, tutor schedule, login enforced.
- 2004: same as 2003 and tutor training course.
- 2005: login program not working, paper logins.
- 2006: login program not working for 2 months, more tutors per hour, improved training.
- 2007: login program properly working, tutor training, 2-3 tutors per hour

- 2003: no supervisor.
- 2004: supervisor, tutor schedule, login enforced.
- 2005: same as 2003 and tutor training course.
- 2006: login program not working, paper logins but new room, furniture, more tutors.
- 2007: improved training, more tutors per hour, functioning login program.
- 2008: login program properly working, tutor training, 2-3 tutors per hour
Math Tutoring Lab – Logins per Day 2002/2003

- Data collected before Nadine Wolff became supervisor of the math lab.
Math Tutoring Lab – Logins per Day 2003/2004

- Note the obvious increases in daily usage during midterm and final exam time.
- Missing gaps due to weekends, holidays, and spring break.
- Second summer session used math lab more frequently than first session.
- Note that some days there are up to 60 logins per day, a clear indicator that more than 2 tutors at a time are needed.
Math Tutoring Lab – Logins per Day 2004/2005

- Note the obvious increases in daily usage during midterm and final exam time.
- Missing gaps due to weekends, holidays, and spring break.
- First summer session used math lab more frequently than second session.
- Note that some days there are close to 60 logins per day, a clear indicator that more than 2 tutors at a time are needed.
- Interesting decrease in numbers at the end of Fall 2004 (two valuable tutors were unable to work).
Math Tutoring Lab – Logins per Day 2005/2006

- Fall data does not accurately reflect math lab usage during that time since the login program was not working.
- Login via paper took students time to get used to and thus not every student was recorded.
- Spring session shows major increase with some days reaching up to 40 students per day.
- Summer logins also increased during the long session. Missing data for the end of July and beginning of August.
Math Tutoring Lab – Logins per Day 2006/2007

- Fall data does not accurately reflect math lab usage during that time since the login program was not working for two months.
- Spring session shows major increase with some days reaching up to 40 students per day, most likely due to improved training and more tutors working per hour due to Keahola Funding.
- Summer logins skewed due to insufficient use of login program. According to tutor an average of 10 students visited the lab per day. This would be an increase to previous summers.
Math Tutoring Lab – Logins per Day 2007/2008

- Fall data shows steady and regular usage of lab. Note that more than 40 students login (not unique) each day.
- Spring session shows reduced and varied usage compared to the fall, due to less classes being offered, spring break and more holidays.
- Note midterm exam spikes in the spring!

Summer 2008 not yet available!
Students had the choice to indicate Hawaiian heritage when logging in.
- The default was NO.
- Low numbers may be due to the fact that Hawaiian students may not want to indicate their status or simply forget to indicate it.
- Percentages per semester show an increase in math lab usage by Hawaiian students.
- Collecting this date has been discontinued due to student complaints.
Math Tutoring Lab – Logins per Subject 2001/2002

- Graphic made before Nadine Wolff was supervisor, data no longer available.
- The math tutoring labs priority is to service students that are enrolled in mathematics courses.
- High numbers for logins who are using the lab to receive help specifically in math.
- Some students indicated only math as their reason for coming to the lab.
- Second highest reason for coming to the lab is physics (includes astronomy).
- Computer Science students may use lab for computers or as study room.
- Biology includes Marine Science.
- Other: additional subjects such as economics and business; getting snacks,, study groups, computers etc.
The math tutoring labs priority is to service students that are enrolled in mathematics courses.
Within math, calculus I and II (205/206) are most represented, includes using computers for MathCAD.
UHH offers three versions for precalculus, 104F – study of functions, 104G – trigonometry, and 104 - a consolidated course.
Math 104 represents the third highest student representation in the lab.
Math 103 – college algebra was not taught until Spring 2005, hence the low numbers.
Math 300+ most likely represents students that are using the lab as a study and hang out place. Tutors are not required to help with upper level math classes, i.e. above Math 206.
Some students indicated only math as their reason for coming to the lab this numbers are included in other.
Math Tutoring Lab – Logins for Mathematics for past 5 years

- Students from math 104, math 205/206 are consistently using the lab the most
- Notice that math 103 students are attending the lab more each year
Math Tutoring Lab – Logins for Mathematics 2002/2005

- The spread shows nothing unusual.
- The Lab is designed to help students in mathematics up to math 206.
- Upper level math students use the lab as a place to study.
- Data unavailable for Fall 05 and Spring 06.
- Data is still being analyzed for Fall 06 and Spring 07.
Math Tutoring Lab – Logins per Subject 2002/2005

- As before mathematics remains the number one reason students come to the Math Tutoring Lab.
- Note that during the summers math is the only subject.
- Physics always second
- Data unavailable for Fall 05 and Spring 06.
- Data is still being analyzed for Fall 06 and Spring 07.