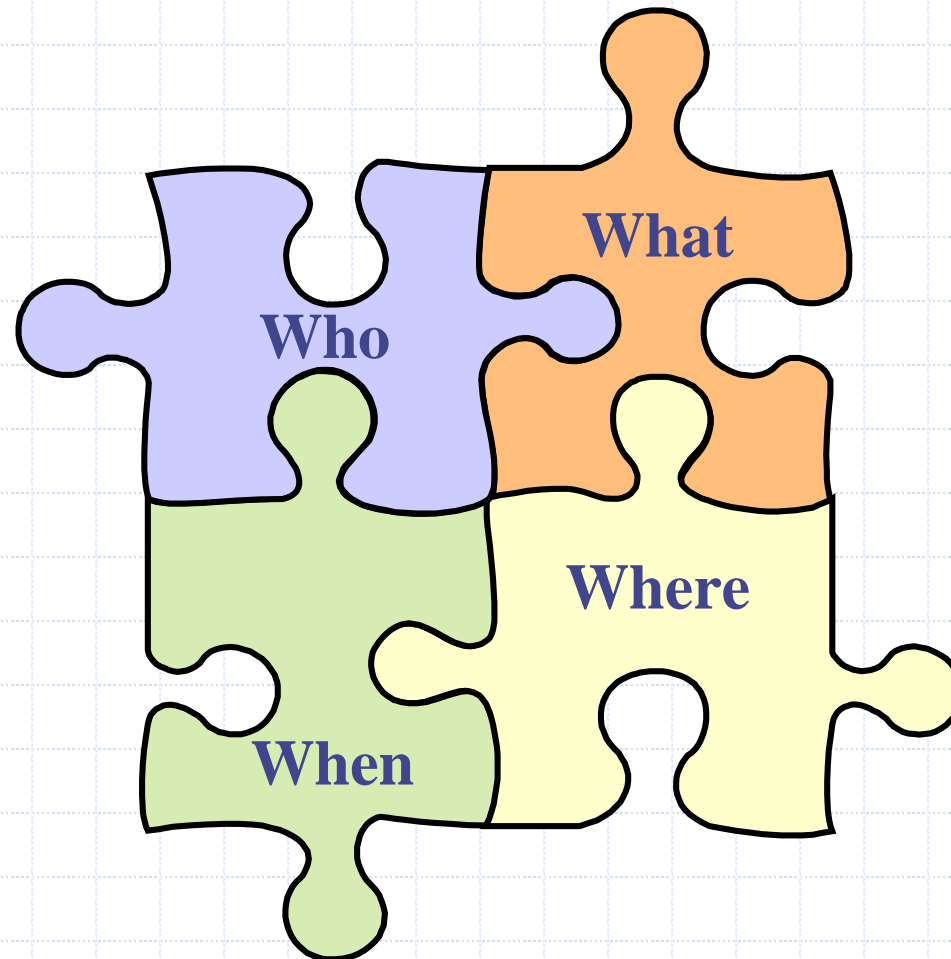


Using IR Data in Space Planning



Michelle Ponczek
Director of Space Analysis and Assignment
Office of Institutional Research
Binghamton University

June 18, 2004

IR Data and Space Planning

•Who

- Faculty
- Staff
- Students

•What

- Departmental Space Usage
- Classroom Usage
- Research Usage

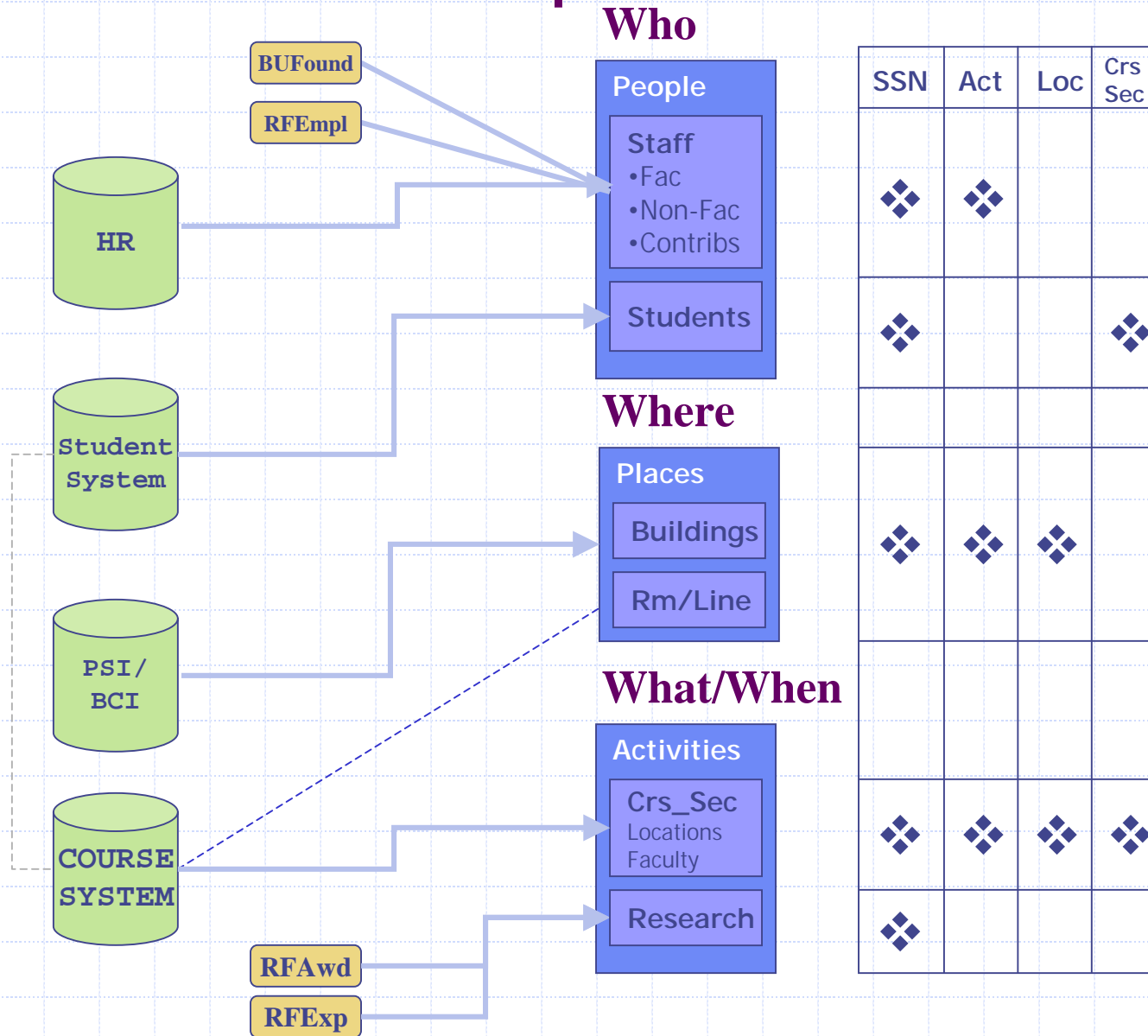
•When

- Time of Day
- Day of Week
- Semester

•Where

- Buildings
- Rooms

Data Relationships



Where

- ◆ Building Reports
- ◆ Departmental Reports

Building Reporting

General Purpose Classrooms

Building	SF	%
ACAD-A	6,964	8.4
ACAD-B	940	1.1
ENGINR	5,065	6.1
FINART	10,226	12.3
IRQTUS	864	1.0
LEC-HL	34,669	41.7
LIBRARY	4,101	4.9
NARCTR	1,760	2.1
SC-I	3,085	3.7
SC-II	8,709	10.5
SCILIB	5,934	7.1
UUNION	876	1.1
Total	83,193	100.0



Departmental Space Use

Departmental Space Profile

Systems Science & Industrial Engineering

CLASSROOM FACILITIES	382	nsf
Classroom	382	nsf
INSTRUCTIONAL DEPT FACIL	4,929	nsf
Class Laboratory	1,383	nsf
Research Facility	1,048	nsf
Faculty Office	1,302	nsf
Faculty Lab Office	228	nsf
Faculty Secretarial Office	141	nsf
Faculty Office Service	406	nsf
Departmental Conference Room	312	nsf
Teaching Assistant office	109	nsf
ORGANIZED RESEARCH UNITS	1,803	nsf
Research Facility	340	nsf
Teaching Assistant office	486	nsf
Research Office	977	nsf
Department Total	7,114	nsf

Building by Space Type Summary

English, General Literature & Rhetoric

ACAD-A	Academic Complex Building A	238 s.f.
3500	Teaching Assistant office	238 s.f.
FINART	Fine Arts	240 s.f.
3500	Teaching Assistant office	240 s.f.
IRQTUS	Iroquois Commons/Tuscarora	1,064 s.f.
3001	Faculty Office	525 s.f.
3500	Teaching Assistant office	539 s.f.
LEC-HL	Lecture Hall	228 s.f.
3500	Teaching Assistant office	228 s.f.
LIBRARY	Glenn G. Bartle Library	9,539 s.f.
1001	Classroom	142 s.f.
1300	Class Laboratory	720 s.f.
2150	Research Facility Service	108 s.f.
3001	Faculty Office	3,606 s.f.
3300	Faculty Secretarial Office	816 s.f.
3450	Faculty Office Service	1,684 s.f.
3460	Departmental Conference Room	427 s.f.
3500	Teaching Assistant office	2,036 s.f.
NARCTR	Nelson A. Rockefeller Ctr.	340 s.f.
3001	Faculty Office	340 s.f.
Department Total		11,649 s.f.

Who

◆ SUNY Space Projection Model

- FTE Data and Space Factors
- Departmental Space Need
- University Space Profile

◆ Benchmarking

- Space per faculty
- Space per staff

SUNY Space Projection Model

FTE Data

ACADUNIT	1998						1999						2000					
	L	U	G1	G2H	G2 FTE	Fac FTE	L	U	G1	G2H	G2 FTE	Fac FTE	L	U	G1	G2H	G2 FTE	Fac FTE
Sys Sci/Ind Eng			55.0	35.0	28.8	6.0		18.9	54.4	36.0	28.8	9.0		31.5	64.6	31.0	26.0	9.5
Computer Science	305.1	143.9	63.0	75.0	66.3	23.3	322.1	183.3	70.2	83.0	72.0	26.4	271.1	190.6	68.4	77.0	66.8	23.9
SPIR						1.0						1.0						1.0
Electrical Eng		82.2	18.5	52.0	44.8	18.1	30.7	69.4	32.6	43.0	36.5	15.5	55.3	81.9	48.7	46.0	39.3	15.1
Engineering Design	97.0					2.0	58.3					3.1	40.3					3.0
Mechanical Eng		69.6	15.6	46.0	40.8	13.3	14.8	66.8	13.3	49.0	44.5	12.1	14.5	63.9	12.0	47.0	42.0	12.1

Space Factor

SpaceFactor 17S						
	LD	UD	G1	G2	G2H	FAC
GenInst	5.40	7.50	2.23	2.23		
ClassLabs	70.98	36.97	73.28			
IndvStdy						
RschSup			100.08		326.25	180.00
FacOfc						160.00
GenUse	0.10					

Calculated Department Space Need (SUNY)

Departmental Space Need Fall 1998

	Class Lab	Ind. Study Lab	Research	Offices	General Use	Total Need
Sys Sci/Ind Eng	208	55	1,038	3,109	221	4,631
Computer Science	18,597	3,109	1,926	7,688	1,566	32,887
SPIR	-	-	153	160	31	344
Electrical Eng	3,735	-	18,763	2,896	2,539	27,934
Engineering Design	5,852	-	306	320	648	7,126

Departmental Space Need and Existing Space

	1998		1999		2000	
	Need	Existing	Need	Existing	Need	Existing
Sys Sci/Ind Eng	4,631	4,412	7,279	4,150	7,279	4,150
Computer Science	32,887	7,249	38,699	6,564	38,699	6,564
SPIR	344	220	344	-	344	-
Electrical Eng	27,934	12,930	28,169	10,886	28,169	10,886
Engineering Design	7,126	458	4,947	1,875	4,947	1,875
Mechanical Eng	23,526	10,194	24,574	5,914	24,574	5,914
	96,448	35,463	104,013	29,389	104,013	29,389

University Space Profile (SUNY)

University Existing Space and Calculated Space Need

Space Function	Existing1998	Need1998	Existing1999	Need1999	Existing2000	Need2000
01 CLASSROOM FACILITIES	88,840	88,058	87,393	87,218	88,818	86,136
02 INSTRUCTIONAL DEPT FACILITIES	413,267	466,818	417,397	485,779	420,948	497,802
03 HEALTH & PHYSICAL EDUCATION	129,107	115,000	127,470	186,000	127,264	186,000
04 ELECTRONIC DATA PROCESSING	22,658	25,200	22,456	35,700	22,787	35,700
05 INSTRUCTIONAL RESOURCES	9,954	25,432	15,341	29,002	15,324	29,002
06 ORGANIZED ACTIVITY UNITS	59,028	59,028	59,028	59,028	59,028	59,028
07 ORGANIZED RESEARCH UNITS	113,945	113,945	118,623	118,623	126,519	126,519
08 PUBLIC SERVICE UNITS	14,431	14,431	15,064	15,064	15,042	15,042
09 ASSEMBLY AND EXHIBITION	14,601	55,020	16,511	61,450	16,627	61,450
10 LIBRARIES	216,517	264,370	235,331	270,794	222,302	273,269
11 STUDENT & FACULTY ACTIVITY	127,975	125,755	128,231	130,186	127,379	128,578
12 STUDENT HEALTH SERVICES	7,535	7,535	7,577	7,577	7,319	7,319
13 M & O CENTRAL SERVICES	54,669	58,256	58,460	63,424	59,028	64,152
14 BUILDING SERVICES	42,024	43,692	43,989	47,568	43,971	48,114
15 GENERAL ADMINISTRATION	112,458	95,813	116,895	99,189	109,759	97,964
16 INACTIVE SPACE	14,878		49,202		60,080	
18 TOTAL	1,441,887	1,470,296	1,518,968	1,609,385	1,522,195	1,629,940

Average Square Feet Per Faculty FTE Office Space

By School

School	Fall1998	Fall1999	Fall2000	Fall2001	Fall2002	Fall2003
University Average	269	259	270	260	261	261
Decker School of Nursing	192	165	173	164	174	142
Graduate School		152	334	472	330	297
Harpur College of Arts & Sciences	282	268	282	270	272	280
Physical Education	297	356	264	333	282	172
School of Education & Human Development	236	244	243	217	199	209
School of Management	210	253	280	262	240	270
Watson School of Engineering	268	241	251	237	267	238

By Department

Name	Fall1998	Fall1999	Fall2000	Fall2001	Fall2002	Fall2003
Systems Science & Industrial Engineering	548	281	250	200	205	167
Computer Science	221	189	190	214	215	177
SPiR	220		333	258	258	215
Electrical & Computing Engineering	227	228	256	291	305	276
Engineering Design	229	356	427	359	329	330
Bioengineering						1094
Mechanical Engineering	270	299	283	214	236	250

Office space:

Function Code 06

Space Types 3001, 3100, 3200, 3300, 3450, 3460, 3465, 3500

Average Square Feet Per Staff

Athletics and Physical Education

Year (Fall)	Staff FTE	Ofc SF	SF/Staff FTE
1999	67.3	9,320	139
2000	79.9	9,678	121
2001	87.5	10,119	116
2002	77.0	7,935	103
2003	73.8	8,096	110
2004	72.5	12,411	171

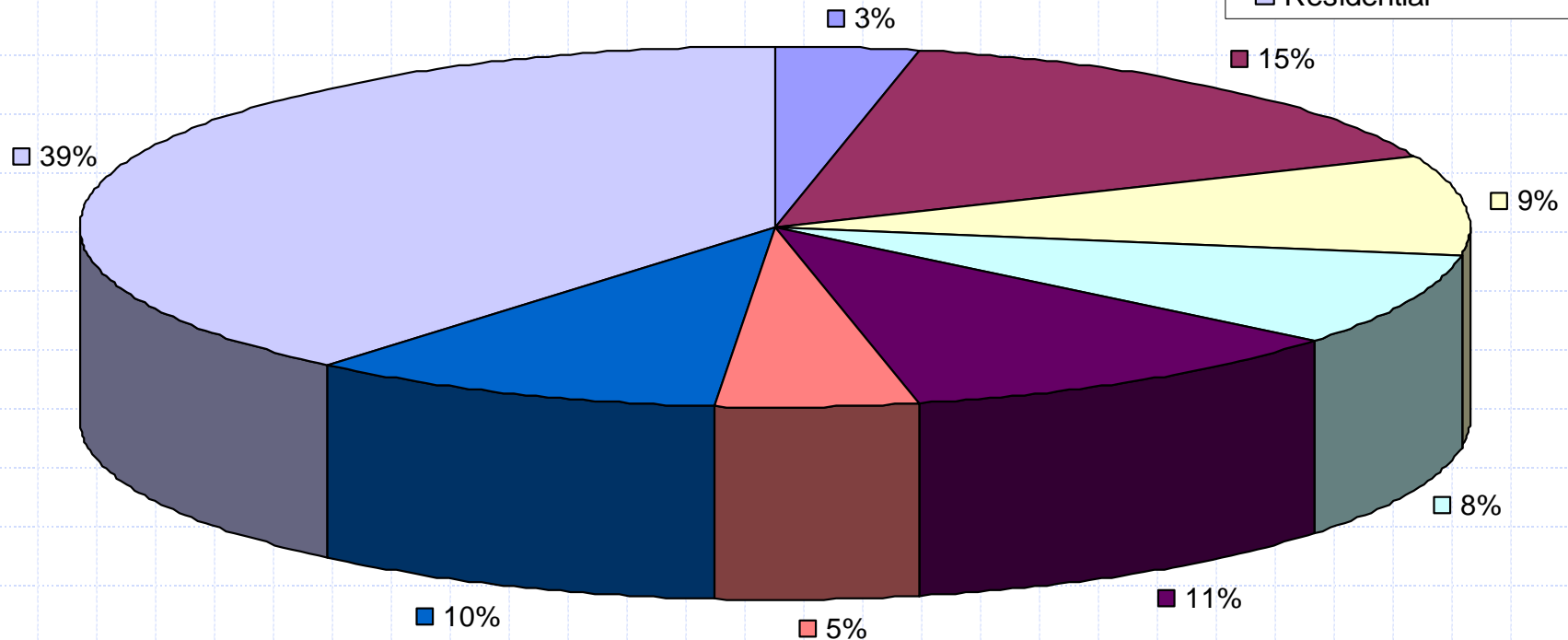
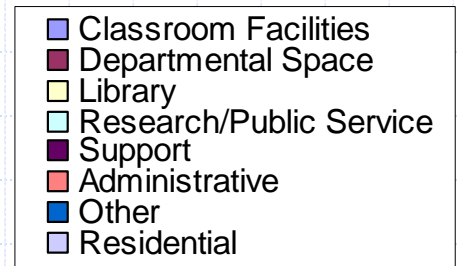
Office Space Types: 3000 and 5000 series

What

- ◆ Campus Space Use
- ◆ Classroom Utilization
- ◆ Station Utilization
- ◆ Research Usage
- ◆ Space, Staffing and Research Expenditure Data

Campus Space Usage

Net Assignable Square Footage By Space Function



Classroom Utilization

Room Size	# Rooms	AvailPds	Pds Used	Utilization	Course Enrollment																			
					1 to 8	9 to 18	19 to 38	39 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 99	100 to 109	110 to 119	120 to 129	130 to 174	175 to 274	275 and above
9-18	12	168	81.5	49%	18	62	2																	
19-38	52	728	539.5	74%	16	117	402	4.5	1															
39-44	4	56	47.0	84%	1	3	29	10	4															
45-49	8	112	94.5	84%	1	5.5	41	23	18	5.5	1													
50-54	8	112	70.0	63%		5.5	34	11	13	7.5														
55-59	3	42	22.5	54%		3	6.5	6	5	2														
60-64	1	14	10.0	71%		2	2	1	1	2	1	1												
65-69	3	42	10.5	25%	0		3	1	1	2.5	1		2											
70-74	3	42	20.0	48%			5	1			1	4.5	3	4.5	1									
75-79	1	14	5.5	39%			2	1.5	1					1										
80-84	2	28	13.5	48%			2		1	0.5		1	1	1	3	3	1							
85-89	0	0	0.0	0%																				
90-99	2	28	19.5	70%			1							1	3.5	1	1.5	10	1.5					
100-109	1	14	11.0	79%							1				3		1	1	4		1			
110-119	1	14	12.0	86%		1					1		1	1	1			3	2	2				
120-129	0	0	0.0	0%																				
130-174	2	28	20.0	71%								1		1	1.5			2	4	0.5	1	9		
175-274	4	56	51.0	91%											1		3		1	1	14	32		
275+	1	14	13.0	93%																	1		12	

14 available periods per week per room

Station Utilization

Registrar Classrooms																				
Seating	1998				1999				2000				2001				2002			
	#Rooms	#Stations	Weekly Hrs	Utilization	#Rooms	#Stations	Weekly Hrs	Utilization	#Rooms	#Stations	Weekly Hrs	Utilization	#Rooms	#Stations	Weekly Hrs	Utilization	#Rooms	#Stations	Weekly Hrs	Utilization
10-19	19	322	8,776	96	13	199	5,087	90	18	288	7,406	91	19	304	8,222	95	19	307	7,726	89
20-29	27	712	18,798	93	34	886	26,111	104	32	827	24,237	103	38	1,011	30,565	107	38	1,011	31,463	110
30-39	22	713	19,763	98	11	362	12,231	119	12	397	11,800	105	8	277	7,690	98	9	312	9,288	105
40-49	6	255	8,485	118	4	173	4,488	92	4	173	4,669	95	2	91	2,949	114	4	173	6,181	126
50-74	15	921	25,601	98	15	899	23,984	94	15	892	21,008	83	16	960	24,344	90	16	960	27,437	101
75-99	1	85	2,058	85	2	156	4,361	99	2	156	3,540	80	1	81	1,500	65	1	81	744	32
Totals	90	3,008	83,480	98%	79	2,675	76,262	101%	83	2,733	72,661	94%	84	2,724	75,269	98%	87	2,844	82,840	103%
Registrar Lecture Halls																				
Seating	1998				1999				2000				2001				2002			
	#Rooms	#Stations	Weekly Hrs	Utilization	#Rooms	#Stations	Weekly Hrs	Utilization	#Rooms	#Stations	Weekly Hrs	Utilization	#Rooms	#Stations	Weekly Hrs	Utilization	#Rooms	#Stations	Weekly Hrs	Utilization
40-49					3	147	3,845	92	6	291	7,860	95	7	340	11,527	120	7	340	12,093	126
50-74	5	270	6,186	81	5	250	7,563	107	3	168	4,666	98	2	114	2,946	91	2	114	2,728	84
75-99	2	192	4,149	76	3	267	6,146	81	2	192	4,984	92	2	193	3,177	58	2	193	4,507	82
100-249	7	1,270	38,615	107	8	1,400	40,414	102	8	1,400	40,524	102	8	1,379	42,830	110	8	1,379	44,361	114
249+	1	458	14,982	116	1	457	14,780	114	1	457	16,115	125	1	443	16,936	135	1	443	22,415	179
Totals	15	2,190	63,931	103%	20	2,521	72,748	102%	20	2,508	74,149	104%	20	2,469	77,416	111%	20	2,469	86,104	123%
Registrar Total																				
Totals	105	5,198	147,411	100%	99	5,196	149,011	101%	103	5,241	146,810	99%	104	5,193	152,685	104%	107	5,313	168,944	112%

Station Utilization = Weekly Hours / Goal (# stations x 28.32)

Research Usage

Spaces and awards associated with a researcher

Room ID	Space Type	Dept	Space Name	NSF	% OR	NSFCalc
ENGINR^B004^1	Research	Mechanical Engineering	OPTO-MECHANICS LB	672	1.00	672.00
Project No. and Name				%Research	%Training	%Other
1006490	RF Allocations Prior to 2001					20
1006560	RF Allocations Prior to 2001					20
1014574	Area Array Packaging Reliability Studies			20		
1014665	Wafer Level CSP Reliability Modeling			20		
1020015	Constitutive Model Development for Lead Free Solder Alloys at Multiple			20		
Total				60.00		40.00
ENGINR^D002^1	Research	Mechanical Engineering	VIBRATION RES LAB	911	0.50	455.00
Project No. and Name				%Research	%Training	%Other
1016066	Estimating Shock and Vibration Response in Personal Computers			75		
1022285	Area Array Packaging Reliability Studies			25		
Total				100.00		
ENGINR^D002A^1	Special Services	Mechanical Engineering	SHAKER ROOM	464	0.50	232.00
Project No. and Name				%Research	%Training	%Other
1016066	Estimating Shock and Vibration Response in Personal Computers			75		
1022285	Area Array Packaging Reliability Studies			25		
Total				100.00		
ENGINR^D002B^1	Research Office	Mechanical Engineering	RESEARCH OFC	165	0.50	83.00
Project No. and Name				%Research	%Training	%Other
1016066	Estimating Shock and Vibration Response in Personal Computers			75		
1022285	Area Array Packaging Reliability Studies			25		
Total				100.00		

Space, Staffing and Research Expenditure Data

Researcher							
Assigned Space			Space Need Based on Staffing			Expenditure Data	
0110	Faculty Office	150 sf	Research Space	Number of:	Space Need	1006047	-\$1,546.24
0111	Research Facility	209 sf	Faculty	1	500 sf	1006043	\$11,081.98
0109	Research Facility	209 sf	Grad Students	2	550 sf	1006044	\$15,428.57
0188	Research Facility	874 sf	PostDocs		0 sf	1006046	\$2,072.20
			ResearchStaff		0 sf	1006097	\$65,569.60
			Undergrads	4	200 sf	1006218	\$24,656.61
			Office Space		270 sf	1021575	\$11,502.89
			Total Need		1,520 sf	Total \$128,765.61	
Existing Assigned Space:			Space Need-Dedicated:		Core/Support Facilities:		Expenditure \$ per SF Assign.
4	records	1,442 sf	1,145 sf		375 sf		89.30 \$/sf

When

- ◆ Meeting Room Utilization
- ◆ Laboratory Utilization

University Union Meeting Room Utilization February 2002

	ENTIRE MONTH						5 pm - 12 am			Prime Time 7 pm-9 pm			WEEKDAYS			WEEKENDS			WEEKDAYS BEFORE 5		
	No. of meetings held	Hours Reserved	Utilization	No. of meetings held	Hours Reserved	Utilization after 5	No. of meetings held	Hours Reserved	Utilization	No. of meetings held	Hours Reserved	Utilization	No. of meetings held	Hours Reserved	Utilization	No. of meetings held	Hours Reserved	Utilization	No. of meetings held	Hours Reserved	Utilization
UU-101	78	134.5	30.0%	134.5	30.0%	100.0%	34	54.0	27.6%	23	31.5	56.3%	71	127.0	39.7%	7	7.5	5.9%	36	64.0	35.6%
UU-102	64	119.4	26.6%	119.4	26.6%	100.0%	26	37.0	18.9%	15	17.5	31.3%	63	117.4	36.7%	1	2.0	1.6%	34	73.3	40.7%
UU-103	62	144.7	32.3%	144.7	32.3%	100.0%	27	40.5	20.7%	22	26.5	47.3%	57	121.7	38.0%	5	23.0	18.0%	26	64.6	35.9%
UU-104	63	175.0	38.0%	170.5	39.1%	97.4%	28	47.0	24.0%	23	31.0	55.4%	51	132.0	41.2%	12	43.0	33.6%	25	81.5	45.3%
UU-133	32	237.0	31.9%	143.0	52.9%	60.3%	20	78.0	39.8%	19	36.0	64.3%	27	212.0	66.3%	5	25.0	19.5%	14	129.0	71.7%
UU-201	48	101.5	22.7%	101.5	22.7%	100.0%	41	79.0	40.3%	34	41.0	73.2%	37	77.5	24.2%	11	24.0	18.8%	1	1.0	0.6%
UU-221B	54	198.0	30.9%	138.5	44.2%	69.9%	32	95.5	48.7%	25	42.0	75.0%	46	170.0	53.1%	8	28.0	21.9%	15	68.5	38.1%
UU-EL	64	182.7	35.6%	159.7	40.8%	87.4%	43	91.9	46.9%	29	40.0	71.4%	57	149.2	46.6%	7	33.5	26.2%	18	57.3	31.8%
UU-MAN	34	296.5	31.6%	141.4	66.2%	47.7%	23	113.4	57.9%	20	36.5	65.2%	27	239.7	74.9%	7	56.8	44.4%	12	140.0	77.8%
UU-WL	64	148.3	33.1%	148.3	33.1%	100.0%	15	95.8	48.9%	29	47.5	84.8%	55	113.3	35.4%	9	35.0	27.3%	16	24.5	13.6%
Total	563	1,737	31.3%	1,401	38.8%	80.7%	289	732	37.3%	239	350	62.4%	491	1,460	45.6%	72	278	21.7%	197	703.6	39.1%

16 hours per day (8 am to 12 am)
20 weekdays and 8 weekend days

Laboratory Utilization

Fall 2001						Spring 2002						Fall 2002						Spring 2003					
	Monday	Tuesday	Wednesday	Thursday	Friday		Monday	Tuesday	Wednesday	Thursday	Friday		Monday	Tuesday	Wednesday	Thursday	Friday		Monday	Tuesday	Wednesday	Thursday	Friday
8:30						8:30						8:30						8:30					
9:00						9:00						9:00						9:00					
9:30		65%				9:30						9:30						9:30					
10:00						10:00						10:00						10:00					
10:30						10:30						10:30						10:30					
11:00						11:00						11:00						11:00					
11:30						11:30						11:30						11:30					
12:00		69%				12:00						12:00						12:00					
12:30						12:30			85%			12:30						12:30				108%	
1:00		69%				1:00						1:00						1:00					
1:30						1:30						1:30	81%		88%		88%	1:30			69%		
2:00						2:00						2:00						2:00					
2:30						2:30						2:30						2:30					
3:00						3:00						3:00						3:00					
3:30						3:30						3:30						3:30					
4:00	92%	81%		69%		4:00						4:00			100%	15%		4:00				85%	
4:30			92%			4:30						4:30						4:30					
5:00						5:00						5:00						5:00					
5:30						5:30						5:30						5:30			115%		
6:00						6:00						6:00						6:00					
6:30						6:30						6:30						6:30					
7:00						7:00						7:00						7:00					
7:30						7:30						7:30						7:30					
8:00						8:00						8:00						8:00			77%		
8:30						8:30						8:30						8:30					
9:00						9:00						9:00						9:00					
9:30						9:30						9:30						9:30					
Overall Station Utilization: 78%						Overall Station Utilization: 13%						Overall Station Utilization: 59%						Overall Station Utilization: 72%					

A solution to our space problem



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