

The Preparedness of Recent High School Graduates Entering Ohio's State-Supported Colleges and Universities

Questions: How many first-year students, who are recent high school graduates, are enrolling for remedial coursework in state-supported colleges and universities throughout the state? How successful is college remedial coursework in helping under-prepared recent high school graduates to complete college level coursework? Does the effectiveness of remedial coursework vary by type of college or university?

Why ask about the frequency and effectiveness of remedial education for recent high school graduates in state-supported colleges and universities? Recent high school graduate, first-year students who enter Ohio's state-supported colleges and universities, vary greatly in their level of preparation to complete college coursework. As noted in [Chapter 02](#), and repeated below, 36% of recent high school graduates entering state-supported colleges and universities enter college without completing a college preparation curriculum while in high school. Such a curriculum would include 4 years of English, and 3 years of Mathematics, Science, and Social Studies.

While preparing students for college study is largely the responsibility of the K-12 sector, prospective students and their families should be prepared for the possibility that remedial coursework may be required in college before students can begin college level coursework. Despite their ages, or the admissions criteria of campuses, it is reasonable to expect that all prospective students who begin college study under-prepared do believe that completion of remedial coursework should prepare them for college study.

Note: While some universities in Ohio are selective in their admissions criteria, other colleges or universities are required to admit any student who has a valid high school diploma. Many recent high school graduates require remedial coursework at a college or university before they can successfully complete college level coursework. There are variations between campuses in implementing statewide criteria established for the distinction between remedial and college-level work. Each campus interprets the standards for such distinctions, and this renders campus comparisons on this subject difficult. Additionally, some first-year students have not attended high school for many years and may need remedial coursework as a refresher before they can successfully complete college coursework. Campuses vary in the degree to which they "require" or "suggest" that under-prepared students take remedial coursework, but with the exception of two campuses (Miami University Main Campus and Central State University), all state-supported colleges and universities in Ohio offer remedial coursework to entering freshmen. This remediation is typically either in English (including both reading and writing) or in mathematics, and some students require remediation in both English and mathematics.

First Question: What percentage of recent high school graduates require remediation in college?

National Answers: Ohio's need for remediation of first-year students is quite similar to the national pattern.

- The U.S. Department of Education released a 1996 report* indicating that there is variation nationally in the extent to which campuses "require" or simply "suggest" that under-prepared students enroll in remedial coursework. This is also true in Ohio.
- In 1995, 20% of all first-time first-year students in the United States enrolled in remedial coursework in reading and 25% of all first-year students enrolled in remedial coursework in writing.
- In 1995, 27% of all first-time first-year students in the United States enrolled in remedial coursework in mathematics.

***Remedial Education at Higher Education Institutions in Fall 1995, U.S. Department of Education, NCES 97-584. (October 1996)**

Statewide Answers: Almost one fifth of all entering first-year students enrolls in remedial English (including reading and writing), and a higher percentage enrolls in remedial mathematics, before they can pursue college level coursework. The overall statewide percentage of recent high school graduates who require remediation is identical to the percentage of similar students who enter college without a high school college preparation curriculum.

- Twenty-nine percent (29%) of recent high school graduates entering college in summer or fall of 2000 enrolled in remediation in mathematics sometime during their first year of study.
- Nineteen percent (19%) of recent high school graduates entering college in summer or fall of 2000 enrolled in remediation in English sometime during their first year of study.
- Thirty-six percent (36%) of recent high school graduates entering college in summer or fall of 2000 enrolled in remediation in English or mathematics sometime during their first year of study.
- Thirty-six percent (36%) of recent high school graduates entering college in summer or fall of 2000 reported not taking a complete college preparation curriculum while in high school. Such a curriculum would include 4 years of English, and 3 years of mathematics, science, and social studies.

Fall and Summer 2000 First-year students aged 19 and younger, taking remedial Math or English in Academic Year 2000-2001

First-year Students	Students taking remedial Math	Students taking remedial English	Students taking remedial English or Math	% taking remedial Math	% taking remedial English	% taking remedial Math or English	% recent high school graduates entering without College prep. curriculum*
57,985	16,903	11,261	21,089	29%	19%	36%	36%

* Data come from ACT Assessments completed by many high school students while in high school.

Sector Answers: Remediation rates differ greatly by type of campus. At two-year campuses, remediation rates are greater than the national average. At the university main campuses, remediation rates are similar to national averages.

- First-year students who recently graduated from high school and enter two-year colleges and universities are more likely to enroll in remedial coursework in mathematics (36%-48%) prior to pursuing college study than are recent high school graduates entering four-year universities (17%).
- First-year students who recently graduated from high school and enter two-year colleges and universities are more likely to enroll in remedial coursework in English (19%-37%), prior to pursuing college study, than are recent high school graduates entering four-year universities (12%).
- Across Ohio, a large percentage (46%-62%) of recent high school students entering two-year colleges report not having completed a college preparation curriculum while in high school.

Fall and Summer 2000 First year students aged 19 and younger, taking remedial Math or English in Academic Year 2000-2001

	First-Year Students	Students taking remedial Math	Students taking remedial English	Students taking remedial English or remedial Math	% Taking remedial Math	% taking remedial English	% taking remedial Math or remedial English	% Recent High School Graduates Entering Without College Prep. Curriculum*
Community College	8,270	3,782	2,611	4,436	46%	32%	54%	50%
State Community College	7,480	3,604	2,341	4,256	48%	31%	57%	55%
Technical College	3,077	1,121	1,129	1,581	36%	37%	51%	62%
University Branch Campus	7,706	3,038	1,479	3,536	39%	19%	46%	46%
University Main Campus	31,452	5,358	3,701	7,280	17%	12%	23%	29%

* Data come from ACT Assessments completed by many high school students while in high school.

Campus Answers: Significant variation exists across campuses in the instance of remedial coursework for recent high school graduates.

**Fall and Summer 2000 First year Students Aged 19 and Younger, Taking Remedial Math or English in Academic Year 2000-2001
Community Colleges**

	First-Year Students	Students taking remedial Math	Students taking remedial English	Students taking remedial Math or remedial English	% Taking remedial Math	% Taking remedial English	% Taking remedial Math or remedial English	% Recent High School Graduates Entering Without College Prep. Curriculum*
Cuyahoga Community College, Eastern Campus	585	284	182	309	49%	31%	53%	57%
Cuyahoga Community College, Metro Campus	619	285	236	311	46%	38%	50%	56%
Cuyahoga Community College, Western Campus	1,756	1,044	555	1,123	59%	32%	64%	49%
Jefferson Community College	255	126	102	163	49%	40%	64%	53%
Lakeland Community College	1,289	471	108	514	37%	8%	40%	52%
Lorain County Community College	817	442	252	506	54%	31%	62%	45%
Rio Grande Community College	509	229	216	287	45%	42%	56%	48%
Sinclair Community College	2,440	901	960	1,223	37%	39%	50%	49%

State Community Colleges

Cincinnati State Technical & Community College	774	326	315	411	42%	41%	53%	44%
Clark State Community College	364	126	114	183	35%	31%	50%	69%
Columbus State Community College	2,988	1,959	820	2,075	66%	27%	69%	53%
Edison State Community College	73	15	9	21	21%	12%	29%	64%
Northwest State Community College	501	181	78	219	36%	16%	44%	54%
Owens State Community College, Findlay Campus	222	102	91	129	46%	41%	58%	60%
Owens State Community College, Toledo Campus	1,377	682	676	876	50%	49%	64%	57%
Southern State Community College, Central Campus	220	35	49	60	16%	22%	27%	57%
Southern State Community College, North Campus	161	26	37	46	16%	23%	29%	55%
Southern State Community College, South Campus	121	19	29	37	16%	24%	31%	55%
Terra State Community College	352	86	72	120	24%	20%	34%	51%
Washington State Community College	327	47	51	79	14%	16%	24%	49%

Technical Colleges

Belmont Technical College	283	181	152	210	64%	54%	74%	58%
Central Ohio Technical College	251	87	75	108	35%	30%	43%	68%
Hocking Technical College	915	445	435	606	49%	48%	66%	60%
Lima Technical College	311	118	40	136	38%	13%	44%	58%
Marion Technical College	160	38	32	51	24%	20%	32%	67%
Muskingum Area Technical College	341	71	108	126	21%	32%	37%	66%
North Central State College	371	59	111	133	16%	30%	36%	62%
Stark State College of Technology	445	122	176	211	27%	40%	47%	65%

* Data come from ACT Assessments completed by many high school students while in high school.

Fall and Summer 2000 First year Students Aged 19 and Younger, Taking Remedial Math or English in Academic Year 2000-2001 (Continued)
University Main and Branch Campuses

	First-Year Students	Students taking remedial Math	Students taking remedial English	Students taking remedial Math or remedial English	% Taking remedial Math	% Taking remedial English	% Taking remedial Math or remedial English	% Recent High School Graduates Entering Without College Prep. Curriculum*
Bowling Green State University, Main	3,189	583	336	808	18%	11%	25%	30%
Bowling Green State University, Firelands Campus	299	148	45	156	49%	15%	52%	54%
Central State University	202	0	0	0	0%	0%	0%	51%
Cleveland State University	1,042	367	377	517	35%	36%	50%	41%
Kent State University, Main	3,189	1,315	352	1,395	41%	11%	44%	35%
Kent State University, Ashtabula Campus	203	124	49	131	61%	24%	65%	54%
Kent State University, East Liverpool Campus	94	73	24	75	78%	26%	80%	59%
Kent State University, Geauga Campus	111	56	18	59	50%	16%	53%	33%
Kent State University, Salem Campus	139	97	49	101	70%	35%	73%	55%
Kent State University, Stark Campus	614	327	83	338	53%	14%	55%	49%
Kent State University, Trumbull Campus	285	167	96	178	59%	34%	62%	58%
Kent State University, Tuscarawas Campus	286	173	60	183	60%	21%	64%	46%
Miami University, Main	2,172	38	0	38	2%	0%	2%	16%
Miami University, Hamilton Campus	538	312	152	336	58%	28%	62%	42%
Miami University, Middletown Campus	468	273	80	282	58%	17%	60%	37%
Ohio State University, Main	5,130	189	62	227	4%	1%	4%	19%
Ohio State University, Agricultural Technical Institute	332	22	52	66	7%	16%	20%	65%
Ohio State University, Lima Campus	360	88	39	107	24%	11%	30%	44%
Ohio State University, Mansfield Campus	458	144	107	197	31%	23%	43%	41%
Ohio State University, Marion Campus	298	109	75	140	37%	25%	47%	45%
Ohio State University, Newark Campus	660	175	32	189	27%	5%	29%	43%
Ohio University, Main	3,415	160	0	160	5%	0%	5%	22%
Ohio University, Chillicothe Campus	301	65	48	88	22%	16%	29%	46%
Ohio University, Eastern Campus	218	47	19	60	22%	9%	28%	34%
Ohio University, Lancaster Campus	311	75	103	147	24%	33%	47%	44%
Ohio University, Southern Campus	204	49	51	77	24%	25%	38%	57%
Ohio University, Zanesville Campus	294	78	72	113	27%	24%	38%	41%
Shawnee State University	498	43	161	174	9%	32%	35%	45%
University of Akron, Main	2,411	521	304	640	22%	13%	27%	42%
University of Akron, Wayne Campus	258	59	37	75	23%	14%	29%	45%
University of Cincinnati, Main	3,367	898	720	1,125	27%	21%	33%	25%
University of Cincinnati, Clermont Campus	347	154	57	174	44%	16%	50%	54%
University of Cincinnati, Raymond Walters Campus	473	213	122	248	45%	26%	52%	39%
University of Toledo	3,005	734	299	872	24%	10%	29%	31%
Wright State University, Main	2,183	304	562	700	14%	26%	32%	34%
Wright State University, Lake Campus	155	10	9	16	6%	6%	10%	52%
Youngstown State University	1,649	206	528	624	12%	32%	38%	42%

* Data come from ACT Assessments completed by many high school students while in high school.

Second Question: What is the success of remedial coursework once it is passed?

National Answers: There are no known benchmark indicators addressing the success rates of higher education’s remediation efforts.

Statewide Answers: Remedial coursework in English, provided to entering freshmen in fall 1998, was quite effective in helping students complete college coursework. Remedial coursework in Mathematics, provided to entering freshmen in fall 1998, was only somewhat effective in helping students complete college coursework.

There are two measures of success to consider when evaluating the impact of remedial coursework, once it has been passed. The first of these is the percentage of students who go on to take college level coursework in English or mathematics once they have passed their remedial coursework in this area. To answer this question, students taking remedial coursework (in fall 1998) were identified, and their subsequent pattern of taking college level coursework (through spring 2001) in the area of their remediation (English or mathematics) was assessed. Students who take and pass remedial coursework in English are much more likely (80%) to take college level coursework over the next several academic years than are students who take and pass remedial mathematics.

Percent of remedial students continuing with college level courses in same field at least one term after fall 1998 (through spring 2001)

English	80%
Math	59%

The second measure of success to consider when evaluating the impact of remedial coursework is whether students who take and pass remedial coursework are able to pass college level coursework in the same area over the next several academic years. To provide context in answering this second question, all students taking remedial coursework in fall 1998 were identified, and their success at college level coursework in the same area of remediation was assessed. A comparison group of students was also identified. Entering freshmen that did not take remedial coursework were identified, and their ability to complete college level coursework was also measured. Students who do take and pass remedial coursework in English and mathematics do continue to exhibit poorer academic progress than their peers who did not take (or require) remedial coursework. Students requiring remedial coursework in English are more successful in their college level English coursework (64%) than are students passing remediation in mathematics (53%).

Fall 1998 entering freshmen successful in all college level coursework in same field (through spring 2001)

English	Non-Remedial Students in FY 1999	77%
	Students who took and passed remedial coursework in Fall 1998	64%
Math	Non-Remedial Students in FY 1999	64%
	Students who took and passed remedial coursework in Fall 1998	53%

Sector Answers: The percent of students who successfully pass remedial coursework and then take college level coursework in the same area is highest in English at university main campuses (87%). The percentage of students who successfully pass remedial coursework and then take college level coursework in the same area is highest in math at university main campuses (67%) and lowest at state community colleges (49%).

Percent of recent high school graduate remedial students continuing with college level courses in same field at least one term after fall 1998 (through spring 2001)

English	Community College	76%
	State Community College	79%
	Technical College	72%
	University Branch Campus	81%
	University Main Campus	87%
Math	Community College	61%
	State Community College	49%
	Technical College	58%
	University Branch Campus	55%
	University Main Campus	67%

Fall 1998 entering freshmen successful in all college level coursework in same field (through spring 2001) - English

Remedial Students in Fall, 1998	Community College	63%
Non-Remedial Students in FY 1999	Community College	67%
Remedial Students in Fall, 1998	State Community College	57%
Non-Remedial Students in FY 1999	State Community College	68%
Remedial Students in Fall, 1998	Technical College	65%
Non-Remedial Students in FY 1999	Technical College	68%
Remedial Students in Fall, 1998	University Branch Campus	74%
Non-Remedial Students in FY 1999	University Branch Campus	78%
Remedial Students in Fall, 1998	University Main Campus	65%
Non-Remedial Students in FY 1999	University Main Campus	80%

Fall 1998 entering freshmen successful in all college level coursework in same field (through spring 2001) - Mathematics

Remedial Students in Fall, 1998	Community College	47%
Non-Remedial Students in FY 1999	Community College	61%
Remedial Students in Fall, 1998	State Community College	63%
Non-Remedial Students in FY 1999	State Community College	69%
Remedial Students in Fall, 1998	Technical College	58%
Non-Remedial Students in FY 1999	Technical College	62%
Remedial Students in Fall, 1998	University Branch Campus	57%
Non-Remedial Students in FY 1999	University Branch Campus	66%
Remedial Students in Fall 1998	University Main Campus	50%
Non-Remedial Students in FY 1999	University Main Campus	64%

Campus Answers: Campus patterns of success for remediation vary greatly. The following charts combine the question of success as measured by percent of students going on to take college level coursework and the percent of students passing college level coursework.

Community Colleges – English Remediation

	% of recent high school graduate remedial continuing with college level courses in same field at least one term after fall 1998	# of remedial students	# of non-remedial students	Successful in all college level coursework in same field	
				Remedial Students	Non-remedial Students
Cuyahoga Community College, Eastern Campus	69%	93	107	52%	54%
Cuyahoga Community College, Metro Campus	75%	156	129	57%	57%
Cuyahoga Community College, Western Campus	82%	357	824	67%	70%
Jefferson Community College	89%	80	93	63%	67%
Lakeland Community College	94%	33	982	61%	68%
Lorain County Community College	77%	210	584	60%	69%
Rio Grande Community College	79%	156	133	85%	82%
Sinclair Community College	69%	611	629	57%	60%

State Community Colleges – English Remediation

Cincinnati State Technical & Community College	83%	217	252	51%	58%
Clark State Community College	68%	37	341	80%	70%
Columbus State Community College	78%	451	1,138	46%	59%
Edison State Community College	63%	57	388	94%	92%
Northwest State Community College	61%	51	367	42%	72%
Owens State Community College, Findlay Campus	94%	49	126	63%	67%
Owens State Community College, Toledo Campus	81%	273	722	66%	67%
Southern State Community College, Central Campus	88%	16	98	43%	80%
Southern State Community College, North Campus	92%	12	58	64%	79%
Southern State Community College, South Campus	64%	11	72	43%	86%
Terra State Community College	81%	52	326	64%	58%
Washington State Community College	87%	47	256	76%	71%

Technical Colleges – English Remediation

Belmont Technical College	60%	133	83	78%	66%
Central Ohio Technical College	91%	32	52	93%	83%
Hocking Technical College	81%	216	241	48%	42%
Lima Technical College	81%	32	199	81%	78%
Marion Technical College	55%	22	121	42%	78%
Muskingum Area Technical College	69%	126	109	82%	77%
North Central State College	66%	65	152	51%	62%
Stark State College of Technology	70%	96	313	70%	75%

University Branch Campuses – English Remediation

	% of recent high school graduate remedial continuing with college level courses in same field at least one term after fall 1998	# of remedial students	# of non-remedial students	Successful in all college level coursework in same field	
				Remedial Students	Non-remedial Students
Bowling Green State University, Firelands Campus	86%	14	219	67%	76%
Kent State University, Ashtabula Campus	74%	19	167	86%	83%
Kent State University, East Liverpool Campus	86%	22	65	53%	74%
Kent State University, Geauga Campus	86%	7	67	100%	75%
Kent State University, Salem Campus	92%	12	93	55%	62%
Kent State University, Stark Campus	84%	43	412	69%	73%
Kent State University, Trumbull Campus	88%	56	170	55%	75%
Kent State University, Tuscarawas Campus	81%	43	198	83%	79%
Miami University, Hamilton Campus	92%	118	261	86%	76%
Miami University, Middletown Campus	83%	46	371	89%	81%
Ohio State University, Agricultural Technical Institute	78%	49	240	74%	77%
Ohio State University, Lima Campus	79%	19	300	67%	84%
Ohio State University, Mansfield Campus	82%	67	260	80%	86%
Ohio State University, Marion Campus	59%	32	131	74%	85%
Ohio State University, Newark Campus	68%	25	397	94%	81%
Ohio University, Chillicothe Campus	62%	13	160	100%	96%
Ohio University, Eastern Campus	75%	16	163	100%	91%
Ohio University, Lancaster Campus	76%	88	175	81%	86%
Ohio University, Southern Campus	50%	6	185	67%	89%
Ohio University, Zanesville Campus	81%	48	149	95%	91%
University of Akron, Wayne Campus	75%	36	233	67%	82%
University of Cincinnati, Clermont Campus	83%	12	250	50%	61%
University of Cincinnati, Raymond Walters Campus	86%	76	291	34%	48%
Wright State University, Lake Campus	80%	10	132	100%	89%

University Main Campuses – English Remediation

Bowling Green State University	94%	187	3,258	69%	72%
Cleveland State University	89%	72	437	83%	73%
Kent State University	95%	146	2,527	84%	79%
Ohio State University	86%	90	5,049	84%	89%
Shawnee State University	83%	155	421	59%	67%
University of Akron	82%	272	2,087	77%	81%
University of Cincinnati	88%	565	2,653	41%	61%
University of Toledo	71%	52	2,200	43%	68%
Wright State University	88%	416	1,266	77%	78%
Youngstown State University	87%	359	992	70%	72%

Community Colleges – Mathematics Remediation

	% of recent high school graduate remedial continuing with college level courses in same field at least one term after fall 1998	# of remedial students	# of non-remedial students	Successful in all college level coursework in same field	
				Remedial Students	Non-remedial Students
Cuyahoga Community College, Eastern Campus	47%	131	37	50%	68%
Cuyahoga Community College, Metro Campus	48%	174	29	48%	72%
Cuyahoga Community College, Western Campus	63%	546	232	54%	60%
Jefferson Community College	47%	55	57	65%	79%
Lakeland Community College	62%	217	377	57%	71%
Lorain County Community College	51%	254	277	47%	57%
Rio Grande Community College	63%	132	82	78%	85%
Sinclair Community College	70%	542	551	28%	51%

State Community Colleges – Mathematics Remediation

Cincinnati State Technical & Community College	65%	179	239	53%	55%
Clark State Community College	34%	73	85	72%	78%
Columbus State Community College	41%	898	216	62%	60%
Edison State Community College	35%	111	104	92%	97%
Northwest State Community College	48%	164	144	68%	69%
Owens State Community College, Findlay Campus	49%	78	48	61%	75%
Owens State Community College, Toledo Campus	58%	442	458	61%	69%
Southern State Community College, Central Campus	50%	4	102	50%	69%
Southern State Community College, North Campus	86%	7	45	33%	73%
Southern State Community College, South Campus	40%	5	73	100%	67%
Terra State Community College	79%	63	309	56%	66%
Washington State Community College	77%	31	239	75%	74%

Technical Colleges – Mathematics Remediation

Belmont Technical College	46%	170	36	76%	81%
Central Ohio Technical College	42%	40	28	41%	71%
Hocking Technical College	63%	220	225	50%	39%
Lima Technical College	48%	93	66	67%	73%
Marion Technical College	64%	22	86	43%	65%
Muskingum Area Technical College	84%	45	146	66%	68%
North Central State College	34%	35	77	42%	70%
Stark State College of Technology	85%	60	313	49%	67%

University Branch Campuses – Mathematics Remediation

	% of recent high school graduate remedial continuing with college level courses in same field at least one term after fall 1998	# of remedial students	# of non-remedial students	Successful in all college level coursework in same field	
				Remedial Students	Non-remedial Students
Bowling Green State University, Firelands Campus	72%	32	94	61%	78%
Kent State University, Ashtabula Campus	33%	63	46	52%	72%
Kent State University, East Liverpool Campus	27%	44	16	67%	81%
Kent State University, Geauga Campus	41%	32	36	62%	44%
Kent State University, Salem Campus	29%	68	22	60%	59%
Kent State University, Stark Campus	46%	156	206	51%	67%
Kent State University, Trumbull Campus	48%	130	91	73%	70%
Kent State University, Tuscarawas Campus	46%	127	120	69%	76%
Miami University, Hamilton Campus	79%	47	307	38%	58%
Miami University, Middletown Campus	67%	43	294	52%	68%
Ohio State University, Lima Campus	75%	51	232	74%	64%
Ohio State University, Mansfield Campus	86%	79	190	43%	67%
Ohio State University, Marion Campus	76%	75	149	47%	60%
Ohio State University, Newark Campus	70%	66	293	50%	61%
Ohio University, Chillicothe Campus	65%	40	77	35%	66%
Ohio University, Eastern Campus	68%	28	136	74%	71%
Ohio University, Lancaster Campus	62%	53	209	64%	85%
Ohio University, Southern Campus	66%	41	87	70%	86%
Ohio University, Zanesville Campus	56%	39	123	59%	70%
University of Akron, Wayne Campus	68%	59	170	47%	74%
University of Cincinnati, Clermont Campus	41%	103	55	64%	75%
University of Cincinnati, Raymond Walters Campus	45%	110	101	64%	56%
Wright State University, Lake Campus	83%	6	117	40%	60%

University Main Campuses – Mathematics Remediation

Bowling Green State University	80%	302	1,896	76%	73%
Kent State University	48%	721	1,410	57%	60%
Ohio State University	86%	162	5,446	39%	55%
Ohio University	75%	87	2,511	75%	82%
Shawnee State University	93%	41	503	32%	56%
University of Akron	66%	407	1,599	36%	57%
University of Cincinnati	70%	485	2,092	36%	43%
University of Toledo	67%	313	1,683	65%	69%
Wright State University	90%	173	1,593	34%	55%
Youngstown State University	62%	171	339	57%	71%