

July 2023

Enrollment, Graduation, and Workforce Outcomes of Mississippi Public University Engineering Students



SLDS

Statewide Longitudinal
Data System

Prepared by Mississippi State University's NSPARC

Enrollment, Graduation, and Workforce Outcomes of Mississippi Public University Engineering Students

July 2023

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ABOUT MISSISSIPPI'S SLDS

Mississippi's Statewide Longitudinal Data System (SLDS) is one of the most comprehensive systems in the country and includes administrative records from more than 25 education, workforce, and human service agencies in the state. The SLDS allows for the alignment of multiple sources of de-identified administrative data over time to evaluate educational or workforce strategies in terms of real outcomes, such as entrance into employment, wages, and skill gains.

PREPARED BY MISSISSIPPI STATE UNIVERSITY'S NSPARC

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For more information, contact NSPARC at nsparc@nsparc.msstate.edu or 662-325-9242.

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OVERVIEW

An analysis was requested by Accelerate MS to provide information pertaining to the enrollment, graduation, and employment outcomes of engineering students from Mississippi public universities. Utilizing a cohort-based design, this report provides descriptive statistics for the following requested information:

1. Enrollment trends pertaining to the most recent six academic years (AY) available, including the number of enrolled engineering students tabulated by:
 - a. Academic Level (i.e., undergraduate student vs. graduate student);
 - b. Residency Status (i.e., in-state vs. out-of-state, including state and country of residency);
 - c. Specific Engineering Degree Program of Enrollment.
2. Graduation trends pertaining to the most recent six academic years (AY) available, including the number of engineering students tabulated by:
 - a. Academic Level (i.e., undergraduate student vs. graduate student);
 - b. Specific Engineering Degree Awarded.
3. Trends pertaining to education and workforce pathways taken by Mississippi engineering graduates within one year of graduation, including:
 - a. Re-enrollment in Mississippi public universities and/or community colleges;
 - b. Entrance into the Mississippi workforce, including industry of employment and median annual earnings;

METHODOLOGY

Longitudinal Data System (SLDS) through the state legislature. The SLDS includes administrative records from over 25 state agencies. Data from the following SLDS data contributors were used:

Mississippi Public Universities – Enrollment and graduation records.

Mississippi Department of Employment Security (MDES) – Employment records.

Mississippi Community College Board (MCCB) – Enrollment records.

In accordance with Mississippi SLDS Rules and Regulations, numeric values less than ten were suppressed. The suppressed values were replaced with the “<10” symbol.

Enrollment Trends. The following indicators were constructed for students enrolled in engineering programs at Mississippi public universities from AY 2017 to AY 2022:

Total Enrollment – The number of engineering students enrolled at Mississippi public universities.

Academic Level of Enrollment – The number and percent of students enrolled in undergraduate engineering programs and graduate engineering programs at Mississippi public universities.

Enrollment by Residency Status – The number and percent of engineering students enrolled at Mississippi public universities whose residency is classified as in-state, out-of-state, or international.

State of Residence – The number and percent of out-of-state engineering students enrolled at Mississippi public universities by state of residence. Due to many states producing less than 10 engineering students matriculated to Mississippi public universities annually, statistics for only the top states are provided.

Country of Residence – The number and percent of international engineering students enrolled at Mississippi public universities by country of residence. Due to many countries producing less than 10 engineering students matriculated to Mississippi public universities annually, statistics for only the top countries are provided.

Academic Program of Enrollment – The number and percent of engineering students enrolled at Mississippi public universities by engineering degree program type. Degrees were classified using six-digit Classification of Instructional Programs (CIP) codes, the national standard of academic program titles developed by the U.S. Department of Education.

Graduation Trends. The following indicators were constructed for students who graduated with engineering degrees from Mississippi public universities between AY 2017 and AY 2022. These cohorts were selected to allow for a one-year post-graduation period to observe education and workforce pathways, as specified in the next section.

Total Graduates – The number of engineering graduates from Mississippi public universities.

Academic Level Awarded – The number and percent of graduates awarded an undergraduate engineering degree or graduate engineering degree from Mississippi public universities.

Degree Awarded – The number and percent of engineering degrees awarded from Mississippi public universities by engineering degree program type. Degrees were classified using six-digit Classification of Instructional Programs (CIP) codes, the national standard of academic program titles developed by the U.S. Department of Education. Total degrees awarded does not equal the total number of graduates, as graduates may earn multiple degrees per academic year.

Education and Workforce Pathways. The following indicators were constructed for students who graduated with engineering degrees from Mississippi public universities between AY 2017 and AY 2021. These cohorts were selected to allow for a one-year post-graduation period to observe education and workforce pathways.

Re-enrollment of Graduates – The number and percent of engineering graduates from Mississippi public universities who re-enrolled at a Mississippi public postsecondary institution, including public universities and community colleges, within one year of graduating.

Employment of Graduates – For engineering graduates from Mississippi public universities that did not re-enroll in a Mississippi public postsecondary institution, the number and percent employed in Mississippi within one year after graduation.

Industry of Employment – For engineering graduates from Mississippi public universities employed in Mississippi, the number and percent employed in each industrial sector. Industrial sectors are classified using the national standard National Association of Industrial Classification System (NAICS).

Median Annual Earnings for Graduates – The median annual earnings of engineering graduates from Mississippi public universities employed in Mississippi within a year of graduation.

RESULTS

TABLE 1: ENROLLMENT IN MISSISSIPPI PUBLIC UNIVERSITY ENGINEERING PROGRAMS BY ACADEMIC LEVEL

Academic Level	AY2017	AY2018	AY2019	AY2020	AY2021	AY2022	Average	Percent
Undergraduate	7,090	7,241	7,153	7,211	7,018	6,531	7,041	86.0
Graduate	1,141	1,130	1,151	1,128	1,133	1,199	1,147	14.0
Total	8,231	8,371	8,304	8,339	8,151	7,730	8,188	100

Source: Mississippi State Longitudinal Data System, 2023.

TABLE 2: ENROLLMENT IN MISSISSIPPI PUBLIC UNIVERSITY ENGINEERING PROGRAMS BY RESIDENCY STATUS

Residence	AY2017	AY2018	AY2019	AY2020	AY2021	AY2022	Average	Percent
In State	4,897	4,999	4,856	4,846	4,666	4,466	4,788	58.5
Out-of-State	2,588	2,647	2,743	2,802	2,799	2,638	2,703	33.0
International	746	725	705	691	686	626	697	8.5
Total	8,231	8,371	8,304	8,339	8,151	7,730	8,188	100

Source: Mississippi State Longitudinal Data System, 2023.

**TABLE 3: TOP STATES FOR OUT-OF-STATE ENROLLMENT IN MISSISSIPPI PUBLIC
UNIVERSITY ENGINEERING PROGRAMS**

State	AY2017	AY2018	AY2019	AY2020	AY2021	AY2022	Average	Percent
Alabama	486	517	523	541	518	505	515	19.1
Tennessee	399	380	390	397	407	394	395	14.6
Georgia	309	288	275	268	247	218	268	9.9
Louisiana	187	213	235	263	272	274	241	8.9
Texas	217	216	238	241	234	204	225	8.3
Florida	153	150	163	149	155	125	149	5.5
Illinois	144	130	127	130	126	122	130	4.8
Missouri	70	93	108	101	89	70	89	3.3
Arkansas	70	73	72	73	76	70	72	2.7
California	62	59	67	75	81	80	71	2.6
Virginia	58	58	53	43	51	45	51	1.9
North Carolina	37	42	50	53	53	52	48	1.8
South Carolina	34	39	41	41	38	43	39	1.5
Pennsylvania	25	39	41	40	44	38	38	1.4
Maryland	29	34	34	32	30	29	31	1.2
Michigan	29	26	24	31	36	34	30	1.1
Kentucky	23	24	28	28	32	39	29	1.1
Ohio	27	22	23	31	28	31	27	1.0
New York	29	23	23	23	30	25	26	0.9
Washington	13	19	20	30	30	26	23	0.9
Indiana	19	22	23	21	22	19	21	0.8
New Jersey	13	12	15	17	24	20	17	0.6
Wisconsin	14	18	19	19	14	15	17	0.6
Colorado	17	16	14	13	19	17	16	0.6
Other	124	134	137	142	143	143	137	5.1
Total	2,588	2,647	2,743	2,802	2,799	2,638	2,703	100.00

Source: Mississippi State Longitudinal Data System, 2023.

Note: Out-of-state enrollment data were reported for all states which did not require extensive data suppression, or in which suppressed data would not be easily identifiable.

**TABLE 4: TOP COUNTRIES FOR INTERNATIONAL ENROLLMENT IN MISSISSIPPI PUBLIC
UNIVERSITY ENGINEERING PROGRAMS**

Country	AY2017	AY2018	AY2019	AY2020	AY2021	AY2022	Average	Percent
China	109	97	97	91	108	69	95	13.7
Nepal	74	101	103	95	87	59	87	12.4
India	95	85	89	80	66	66	80	11.5
Morocco	59	72	55	53	71	83	66	9.4
Bangladesh	37	32	40	47	42	51	42	6.0
Iran	48	46	36	36	27	29	37	5.3
Nigeria	29	35	32	30	26	29	30	4.3
Saudi Arabia	21	22	24	27	21	12	21	3.0
Oman	19	19	21	16	<10	<10	15	2.1
South Korea	28	18	11	12	<10	<10	14	1.9
Other	227	198	197	204	226	216	211	30.3
Total	746	725	705	691	686	626	697	100.0

Source: Mississippi State Longitudinal Data System, 2023.

Note: International enrollment data were reported for all countries which did not require extensive data suppression, or in which suppressed data would not be easily identifiable.

TABLE 5: ENROLLMENT IN MISSISSIPPI PUBLIC UNIVERSITY ENGINEERING PROGRAMS

Academic Program	AY2017	AY2018	AY2019	AY2020	AY2021	AY2022	Average	Percent
Mechanical Engineering	1,478	1,463	1,466	1,485	1,447	1,398	1,456	17.8
Civil Engineering	965	928	881	889	892	841	899	11.0
Industrial Technology/Technician	587	675	764	768	778	706	713	8.7
Electrical and Electronics Engineering	689	698	681	684	686	695	689	8.4
Chemical Engineering	749	696	663	604	558	451	620	7.6
Bioengineering and Biomedical Engineering	462	570	620	624	574	579	572	7.0
Architectural Engineering Technology/Technician	534	509	547	570	554	524	540	6.6
Computer Engineering	469	495	451	474	469	444	467	5.7
Aerospace, Aeronautical Engineering	400	456	458	487	473	469	457	5.6
Engineering, General	475	504	416	449	425	405	446	5.4
Industrial Engineering	298	305	332	341	373	386	339	4.1
Engineering Science	183	177	177	158	160	159	169	2.1
Geological/Geophysical Engineering	237	198	147	125	94	75	146	1.8
Polymer/Plastics Engineering	135	142	148	149	147	151	145	1.8
Industrial Production Technologies/Technicians	122	133	126	126	114	104	121	1.5
Petroleum Engineering	91	98	94	82	88	60	86	1.0
Other Engineering	357	324	333	324	319	283	323	3.9
Total	8,231	8,371	8,304	8,339	8,151	7,730	8,188	100

Source: Mississippi State Longitudinal Data System, 2023.

Note: Years with no enrollment in a particular engineering program are signified by “-”.

**TABLE 6: NUMBER OF GRADUATES FROM MISSISSIPPI PUBLIC UNIVERSITY
ENGINEERING PROGRAMS BY ACADEMIC LEVEL**

Academic Level	AY2017	AY2018	AY2019	AY2020	AY2021	AY2022	Average	Percent
Undergraduate	950	1,119	1,174	1,265	1,347	1,250	1,184	84.5
Graduate	230	204	246	222	173	227	217	15.5
Total	1,180	1,323	1,420	1,487	1,520	1,477	1,401	100

Source: Mississippi State Longitudinal Data System, 2023.

TABLE 7: NUMBER OF DEGREES AWARDED FROM MISSISSIPPI PUBLIC UNIVERSITY ENGINEERING PROGRAMS*

Academic Program	AY2017	AY2018	AY2019	AY2020	AY2021	AY2022	Average	Percent
Mechanical Engineering	230	241	267	295	302	275	268	19.1
Civil Engineering, General	138	175	178	166	178	142	163	11.6
Chemical Engineering	132	115	138	146	130	101	127	9.0
Industrial Technology/Technician	98	101	118	124	156	131	121	8.6
Electrical and Electronics Engineering	97	104	114	121	126	122	114	8.1
Bioengineering and Biomedical Engineering	74	87	81	88	103	111	91	6.5
Aerospace, Aeronautical Engineering	52	90	78	62	73	91	74	5.3
Architectural Engineering Technology/Technician	59	58	70	75	83	97	74	5.2
Industrial Engineering	58	59	63	80	77	80	70	4.9
Engineering, General	54	57	67	64	67	66	63	4.4
Computer Engineering	29	54	54	61	62	67	55	3.9
Engineering Science	45	33	53	39	32	35	40	2.8
Geological/Geophysical Engineering	26	46	29	35	11	37	31	2.2
Industrial Production Technologies/Technicians	24	22	20	40	25	25	26	1.8
Polymer/Plastics Engineering	19	16	29	27	29	35	26	1.8
Petroleum Engineering	-	11	17	-	14	13	10	0.7
Other Engineering	46	55	50	58	59	59	55	3.9
Total	1,181	1,324	1,426	1,488	1,527	1,487	1,406	100

Source: Mississippi State Longitudinal Data System, 2023.

Note: Years with no degrees awarded from a particular engineering program are signified by “-”.

* Total degrees awarded does not equal the total number of graduates, as graduates may earn multiple degrees per academic year.

TABLE 8: MISSISSIPPI EDUCATION AND WORKFORCE PATHWAY FOR ENGINEERING GRADUATES WITHIN ONE YEAR OF GRADUATION

Outcome	AY2017	AY2018	AY2019	AY2020	AY2021	Average	Percent
Employed in Mississippi	456	514	527	560	584	528	84.5
Re-Enrolled in MS Postsecondary	104	125	83	77	96	97	15.5
Total	560	639	610	637	680	625	100

Source: Mississippi State Longitudinal Data System, 2023.

TABLE 9: INDUSTRY OF EMPLOYMENT FOR MISSISSIPPI PUBLIC UNIVERSITY ENGINEERING GRADUATES THAT ENTER THE WORKFORCE WITHIN ONE YEAR OF GRADUATION

Industry	AY2017	AY2018	AY2019	AY2020	AY2021	Average	Percent
Manufacturing	132	150	174	172	195	165	31.2
Professional, Scientific, and Technical Services	49	58	51	84	92	67	12.6
Construction	54	57	48	53	57	54	10.2
Educational Services	50	52	50	53	41	49	9.3
Wholesale/Retail Trade	39	32	50	49	51	44	8.4
Accommodation/Leisure	30	31	36	29	44	34	6.4
Administrative and Waste Services	18	23	19	20	29	22	4.1
Utilities	13	15	15	21	15	16	3.0
Transportation and Warehousing	10	15	15	10	12	12	2.3
Other	61	81	69	69	48	66	12.4
Total	456	514	527	560	584	528	100

Source: Mississippi State Longitudinal Data System, 2023.

**TABLE 10. MEDIAN ANNUAL EARNINGS OF MISSISSIPPI PUBLIC UNIVERSITY ENGINEERING GRADUATES THAT ENTER THE
WORKFORCE WITHIN ONE YEAR OF GRADUATION**

Industry	AY2017	AY2018	AY2019	AY2020	AY2021	Overall
Utilities	\$74,880	\$69,376	\$73,922	\$76,052	\$74,617	\$74,270
Manufacturing	\$59,700	\$59,541	\$62,787	\$62,005	\$66,129	\$62,163
Professional, Scientific, and Technical Services	\$54,825	\$52,545	\$49,522	\$55,583	\$56,047	\$54,294
Transportation and Warehousing	\$50,641	\$41,937	\$22,443	\$52,748	\$59,720	\$49,848
Construction	\$41,999	\$44,694	\$48,205	\$47,000	\$44,000	\$44,424
Educational Services	\$41,302	\$38,457	\$45,000	\$31,200	\$59,670	\$41,487
Administrative and Waste Services	\$20,685	\$30,817	\$26,492	\$45,361	\$25,988	\$28,251
Wholesale/Retail Trade	\$19,921	\$28,269	\$22,483	\$31,676	\$25,494	\$25,968
Accommodation/Leisure	\$9,362	\$12,755	\$15,352	\$9,022	\$19,772	\$14,592
Other	\$39,131	\$39,543	\$42,827	\$44,626	\$46,703	\$40,342
Total	\$46,285	\$50,250	\$53,756	\$53,160	\$55,134	\$52,231

Source: Mississippi State Longitudinal Data System, 2023.



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