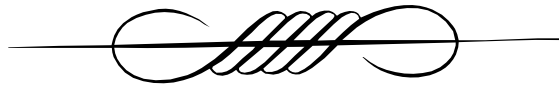


ANNUAL REPORT

Fiscal Year

1 9 9 6 - 1 9 9 7

(Last Six Months - January through June, 1997)



**OFFICE OF WATER PROGRAMS
CSUS FOUNDATION
CALIFORNIA STATE UNIVERSITY
SACRAMENTO**

1996-1997 ANNUAL REPORT[^]

(Last Six Months - January through June, 1997)

for

**OPERATION OF WASTEWATER TREATMENT PLANTS
 ADVANCED WASTE TREATMENT
 INDUSTRIAL WASTE TREATMENT
 TREATMENT OF METAL WASTESTREAMS
 PRETREATMENT FACILITY INSPECTION
 OPERATION & MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS
 WATER TREATMENT PLANT OPERATION
 SMALL WATER SYSTEM OPERATION & MAINTENANCE
 WATER DISTRIBUTION SYSTEM OPERATION & MAINTENANCE**



Summary	1993	1994	1995	1996	1997 Jan-June	Total 1972 to Date
Manuals Sold	52,632	54,364	52,883	51,564	25,364	622,486
Enrollments	13,685	13,639	13,788	12,817	6,817	149,978
Completions	9,478	8,651	9,034	9,058	4,993	98,720
Students Dropped	2,170	3,563	2,404	2,364	996	25,842
University Credits	246	177	136	142	100	5,853
Tests Graded*	74,970	65,780	71,484	76,421	45,376	541,509

^NOTE: Office of Water Programs is switching its annual reporting from a calendar year to a fiscal year (July 1) starting July 1, 1997.

*Tabulation of tests graded did not begin until 1989.



Administered and Monitored by

CSUS FOUNDATION
 and
 SCHOOL OF ENGINEERING AND COMPUTER SCIENCE
 DEPARTMENT OF CIVIL ENGINEERING

RAMZI J. MAHMOOD, PROGRAM DIRECTOR

for the

U. S. ENVIRONMENTAL PROTECTION AGENCY

JULY 1997

ANNUAL REPORT
for
OPERATION OF WASTEWATER TREATMENT PLANTS
ADVANCED WASTE TREATMENT
INDUSTRIAL WASTE TREATMENT
TREATMENT OF METAL WASTESTREAMS
PRETREATMENT FACILITY INSPECTION
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SMALL WATER SYSTEM OPERATION & MAINTENANCE
WATER DISTRIBUTION SYSTEM OPERATION & MAINTENANCE



The purpose of this report is to provide a summary of the accomplishments of each program on an annual basis since its inception. All programs are operating on a financially self-sustaining basis.

NOTE: The Office of Water Programs is switching its annual reporting from a calendar year to a fiscal year (July 1) starting July 1, 1997.



OPERATION OF WASTEWATER TREATMENT PLANTS
First Edition

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED*	PERCENT COMPLETED	REGISTERED CE-12**
1972-1981	42,097	8,777	6,461	68	2,149

Colleges and Universities: 301
Foreign Countries: 32

*Beginning in 1979, only persons who actually started a course and did not finish were counted as drops.

**CE = Civil Engineering

OPERATION OF WASTEWATER TREATMENT PLANTS

VOLUME I - Second, Third and Fourth Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-12A
1980-1989	45,626	7,976	1,696	82	724
1990	9,338	1,561	361	81	43
1991	10,557	1,891	430	82	52
1992	11,701	2,091	596	78	66
1993	11,106	2,322	834	74	42
1994	10,298	1,988	1,254	61	42
1995	9,862	2,129	799	80	30
1996	9,639	3,010	758	75	28
1997 (Jan-June)	4,545	1,171	298		14
TOTALS	122,672	24,139	7,026	71	1,041

Colleges and Universities: 311

Foreign Countries: 58

VOLUME II - Second, Third and Fourth Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-12B
1980-1989	34,516	4,657	370	93	301
1990	6,645	761	49	97	27
1991	7,478	1,249	89	93	47
1992	8,324	1,155	93	93	38
1993	7,769	1,133	138	89	35
1994	7,725	1,159	231	83	17
1995	6,875	989	148	87	13
1996	6,654	931	184	83	12
1997 (Jan-June)	3,015	572	63	89	6
TOTALS	89,001	12,606	1,365	89	496

Colleges and Universities: 271

Foreign Countries: 55

OPERATION OF WASTEWATER TREATMENT PLANTS

VOLUME III*

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-12C
1980-1989	13,282	2,203	213	91	191

*In 1987 Volume III was revised and split into two manuals, *ADVANCED WASTE TREATMENT* and *INDUSTRIAL WASTE TREATMENT*.

ADVANCED WASTE TREATMENT

First, Second and Third Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-12E
1987-1989	7,450	696	13	98	19
1990	3,583	531	32	94	20
1991	3,298	552	58	91	21
1992	3,912	647	72	90	21
1993	3,719	642	87	88	24
1994	3,642	559	170	77	12
1995	3,381	549	108	84	7
1996	2,654	508	92	85	8
1997 (Jan-June)	1,595	251	38	85	4
TOTALS	33,234	4,935	670	86	136

Colleges and Universities: 160

Foreign Countries: 45

INDUSTRIAL WASTE TREATMENT

First Edition*

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-12F
1987-1989	5,716	281	15	95	11
1990	3,473	268	30	90	21
1991	3,119	349	39	90	26
1992	3,480	347	56	86	20
1993	3,039	402	70	85	22
1994	2,237	313	116	88	7
1995	-----	-----	----	---	3
TOTALS	21,064	1,960	326	91	110

Colleges and Universities: 94

Foreign Countries: 21

*In 1994 **INDUSTRIAL WASTE TREATMENT** was revised and split; Volume I was available in Fall 1994; Volume II was available Spring 1995.

INDUSTRIAL WASTE TREATMENT
VOLUME I - Second Edition

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-21A
1994	1,105	17	0	100	1
1995	3,417	234	53	82	2
1996	3,317	385	114	77	9
1997 (Jan-June)	1,264	262	63	76	4
TOTALS	9,103	898	230	74	16

Colleges and Universities: 95
Foreign Countries: 33

VOLUME II - First Edition

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-21B
1995	1,538	72	0	100	0
1996	1,821	153	22	87	4
1997 (Jan-June)	718	67	11	84	2
TOTALS	4,077	292	33	89	6

Colleges and Universities: 62
Foreign Countries: 27

TREATMENT OF METAL WASTESTREAMS
First and Second Editions

(Formerly **TREATMENT OF WASTEWATER FROM ELECTROPLATING, METAL FINISHING AND PRINTED CIRCUIT BOARD MANUFACTURING**)

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-12D
1986-1989	7,560	954	14	99	63
1990	2,798	332	27	92	22
1991	2,716	332	21	94	13
1992	2,688	393	24	94	25
1993	2,760	518	19	96	12
1994	3,003	495	61	89	13
1995	2,120	550	28	95	5
1996	1,385	421	30	93	9
1997 (Jan-June)	796	206	14	94	3
TOTALS	25,826	4,201	238	94	165

Colleges and Universities: 100

Foreign Countries:

38

PRETREATMENT FACILITY INSPECTION
First and Second Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-12G
1988-1989	2,490	358	8	98	6
1990	1,216	380	76	83	11
1991	1,027	237	56	81	10
1992	1,346	373	48	89	19
1993	1,043	292	57	84	13
1994	889	268	90	75	6
1995	888	234	59	80	3
1996	871	271	64	81	5
1997 (Jan-June)	436	111	37	67	5
TOTALS	10,206	2,524	495	80	78

Colleges and Universities: 75

Foreign Countries: 36

**OPERATION & MAINTENANCE OF
WASTEWATER COLLECTION SYSTEMS***
First Edition

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-11
1976-1982	5,377	1,418	293	83	263

Second Edition

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-11
1983-1988	4,782	876	180	83	52

*In 1987 the Second Edition was revised and split into two volumes.

OPERATION AND MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS

VOLUME I - Third, Fourth and Fifth Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-11A
1987-1989	4,699	368	27	93	6
1990	3,100	367	47	89	15
1991	3,192	490	58	89	6
1992	3,516	428	96	82	18
1993	3,177	551	109	83	14
1994	3,137	520	183	74	7
1995	3,154	566	113	83	8
1996	3,425	609	85	88	4
1997 (Jan-June)	1,639	308	48	84	6
TOTALS	29,039	4,207	766	81	84

Colleges and Universities: 112
Foreign Countries: 46

VOLUME II - Third, Fourth and Fifth Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-11B
1987-1989	3,296	164	5	97	4
1990	2,330	171	3	98	9
1991	2,401	265	9	97	9
1992	2,660	254	10	96	12
1993	2,366	319	16	95	8
1994	2,054	270	47	85	6
1995	2,199	304	33	90	5
1996	2,583	300	20	94	3
1997 (Jan-June)	1,392	141	4	95	4
TOTALS	21,281	2,188	150	93	60

Colleges and Universities: 104
Foreign Countries: 45



WATER TREATMENT PLANT OPERATION

VOLUME I - First, Second and Third Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-18A
1983-1989	20,186	2,821	679	81	301
1990	5,554	793	242	77	24
1991	5,507	936	317	75	22
1992	6,626	1,212	407	75	48
1993	6,675	1,444	489	75	30
1994	7,320	1,180	774	60	26
1995	6,767	1,458	577	72	24
1996	7,065	1,509	525	74	23
1997 (Jan-June)	3,467	719	245	66	15
TOTALS	69,167	12,072	4,255	65	513

Colleges and Universities: 214

Foreign Countries: 51

VOLUME II - First and Second Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-18B
1983-1989	11,817	1,278	86	94	68
1990	3,298	500	29	95	10
1991	3,752	541	52	91	20
1992	4,114	651	66	91	23
1993	3,985	717	77	90	18
1994	4,378	743	156	83	16
1995	4,326	635	116	85	15
1996	4,136	647	125	84	12
1997 (Jan-June)	2,173	335	47	86	7
TOTALS	41,979	6,047	754	87	189

Colleges and Universities: 183

Foreign Countries: 46

WATER SUPPLY SYSTEM OPERATION*

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-17
1983-1987	6,233	724	143	84	70

Colleges and Universities: 59

Foreign Countries: 9

*In 1987 **WATER SUPPLY SYSTEM OPERATION** was revised into a Second Edition and split into two manuals, **SMALL WATER SYSTEM OPERATION & MAINTENANCE** and **WATER DISTRIBUTION SYSTEM**

OPERATION & MAINTENANCE.

SMALL WATER SYSTEM OPERATION & MAINTENANCE
Second and Third Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-19
1987-1989	7,216	359	53	87	10
1990	3,090	266	62	81	9
1991	2,841	330	121	73	7
1992	3,641	314	119	73	14
1993	2,937	478	128	79	15
1994	3,766	497	251	66	16
1995	3,189	459	144	76	10
1996	3,049	490	153	76	10
1997 (Jan-June)	1,553	247	60	76	11
TOTALS	31,282	3,440	1,091	68	102

Colleges and Universities: 137
Foreign Countries: 47

WATER DISTRIBUTION SYSTEM OPERATION & MAINTENANCE
Second and Third Editions

YEAR	MANUALS SOLD	SUCCESSFUL COMPLETION	DROPPED	PERCENT COMPLETED	REGISTERED CE-20
1987-1989	8,609	465	50	90	22
1990	4,332	362	56	87	11
1991	3,961	589	100	85	16
1992	4,362	492	136	78	17
1993	4,056	660	146	82	13
1994	4,810	641	230	74	9
1995	4,918	715	178	80	14
1996	4,965	686	192	77	12
1997 (Jan-June)	2,771	392	68	83	11
TOTALS	42,784	5,002	1,156	77	125

Colleges and Universities: 132
Foreign Countries: 51



*Note: During the fiscal year 1997-1998, three new courses will be initiated: **UTILITY MANAGEMENT** and **SMALL WASTEWATER SYSTEM OPERATION AND MAINTENANCE**, Volumes I and II.