

ANNUAL REPORT

for

OPERATION OF WASTEWATER TREATMENT PLANTS

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

OPERATION & MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS

WATER TREATMENT PLANT OPERATION

WATER SUPPLY SYSTEM OPERATION

<u>Summary</u>	<u>1985</u>	<u>1986</u>
Manuals Sold	15,419	18,151
Students Enrolled	3,913	4,859
Students Completing	2,407	2,606
Students Dropped	530	416
University Credit	248	231

Administered and Monitored by

HORNET FOUNDATION OF CALIFORNIA STATE UNIVERSITY, SACRAMENTO

and

DEPARTMENT OF CIVIL ENGINEERING

KENNETH D. KERRI, PROGRAM DIRECTOR

For the

U. S. ENVIRONMENTAL PROTECTION AGENCY

January 1987

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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.

OPERATION OF WASTEWATER TREATMENT PLANTS (First Edition)

<u>Year</u>	<u>Manuals Sold</u>	<u>Successful completion</u>	<u>Dropped</u>	<u>Percent Completing</u>	<u>CEX12</u>
1972	8063	571	128	82	614
1973	5747	1569	1490	51	389
1974	6523	1144	1717	40	289
1975	4543	804	655	55	164
1976	3992	676	1052	39	119
1977	3280	570	248	70	166
1978	3232	789	310	72	141
1979	3180	881	191	82	103
1980	2444	745	431	63	109
1981	1093	1028	239	81	55
TOTALS:	41,100	8777	4124*	68	2149

Colleges and Universities: 301
Foreign Countries: 32

*From 1979 on only persons who actually started course and did not finish were counted as drops.

OPERATION OF WASTEWATER TREATMENT PLANTS (Second Edition)

VOLUME I

<u>Year</u>	<u>Manuals Sold</u>	<u>Successful completion</u>	<u>Dropped</u>	<u>Total Percent Completing</u>	<u>CEX-12 A,B,C</u>
1980	1190				19
1981	3960	411	8	98	127
1982	3976	731	181	80	98
1983	2963	655	184	78	76
1984	3347	2087	171	92	66
1985	4064	862	267	76	59
<u>1986</u>	<u>4534</u>	<u>896</u>	<u>155</u>	<u>85</u>	<u>82</u>
TOTAL:	24,034	5642	966	85	527

VOLUME II

1980	715				4
1981	3023	182			47
1982	3575	309	18	94	45
1983	2438	381	33	92	39
1984	2219	872	35	96	29
1985	2827	454	91	83	25
<u>1986</u>	<u>3161</u>	<u>438</u>	<u>21</u>	<u>95</u>	<u>43</u>
TOTAL:	17,958	2636	198	93	232

VOLUME III

1980	428				1
1981	2422	140			58
1982	1898	213	35	86	25
1983	1437	217	33	87	30
1984	1537	430	24	95	12
1985	1525	310	45	87	17
<u>1986</u>	<u>2266</u>	<u>291</u>	<u>30</u>	<u>91</u>	<u>29</u>
TOTAL:	11,513	1601	167	91	172

TREATMENT OF WASTEWATER FROM ELECTROPLATING, METAL FINISHING AND PRINTED
CIRCUIT BOARD MANUFACTURING

<u>Year</u>	<u>Manuals Sold</u>	<u>Successful Completion</u>	<u>Dropped</u>	<u>Total Percent Completing</u>	<u>CEX-12D</u>
1986	1281	98	0	100	18
GRAND TOTAL:	54,786	9977	1331	88	949

Colleges and Universities: 182

Foreign countries: 16

OPERATION AND MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS (First Edition)

<u>Year</u>	<u>Manuals Sold</u>	<u>Successful Completion</u>	<u>Dropped</u>	<u>Percent Completing</u>	<u>CEX11</u>
1976	966	3			7
1977	1093	281	8	97	77
1978	759	246	70	78	46
1979	633	179	83	68	34
1980	645	226	53	81	37
1981	680	218	37	85	46
<u>1982</u>	<u>601</u>	<u>265</u>	<u>42</u>	<u>86</u>	<u>23</u>
TOTALS:	5377	1418	292	83	263

SECOND EDITION

1983	583	25	0	100	3
1984	751	97	10	91	10
1985	1103	147	16	90	13
<u>1986</u>	<u>1237</u>	<u>157</u>	<u>31</u>	<u>84</u>	<u>13</u>
TOTALS:	3674	426	57	88	39

Colleges and universities: 45

Foreign countries: 8

WATER TREATMENT PLANT OPERATION

VOLUME I

<u>Year</u>	<u>Manuals Sold</u>	<u>Successful Completion</u>	<u>Dropped</u>	<u>Percent Completing</u>	<u>CEX18</u>
1983	1469	31	0	100	10
1984	2068	327	27	92	116
1985	2344	355	82	81	69
1986	<u>2391</u>	<u>415</u>	<u>108</u>	<u>79</u>	<u>35</u>
TOTALS:	8272	1128	217	84	230

VOLUME II

1983	183	0	0		1
1984	1331	140	0	100	9
1985	1572	133	7	95	19
1986	<u>1467</u>	<u>163</u>	<u>21</u>	<u>89</u>	<u>6</u>
TOTALS:	4553	436	28	94	35

Colleges and universities: 90

Foreign countries: 12

WATER SUPPLY SYSTEM OPERATION

<u>Year</u>	<u>Manuals Sold</u>	<u>Successful Completion</u>	<u>Dropped</u>	<u>Percent Completing</u>	<u>CEX17</u>
1983	537	0	0		3
1984	1526	140	0	100	13
1985	1957	146	22	87	39
1986	<u>1814</u>	<u>148</u>	<u>50</u>	<u>75</u>	<u>5</u>
TOTALS:	5834	434	72	86	60

Colleges and universities: 58

Foreign countries: 8