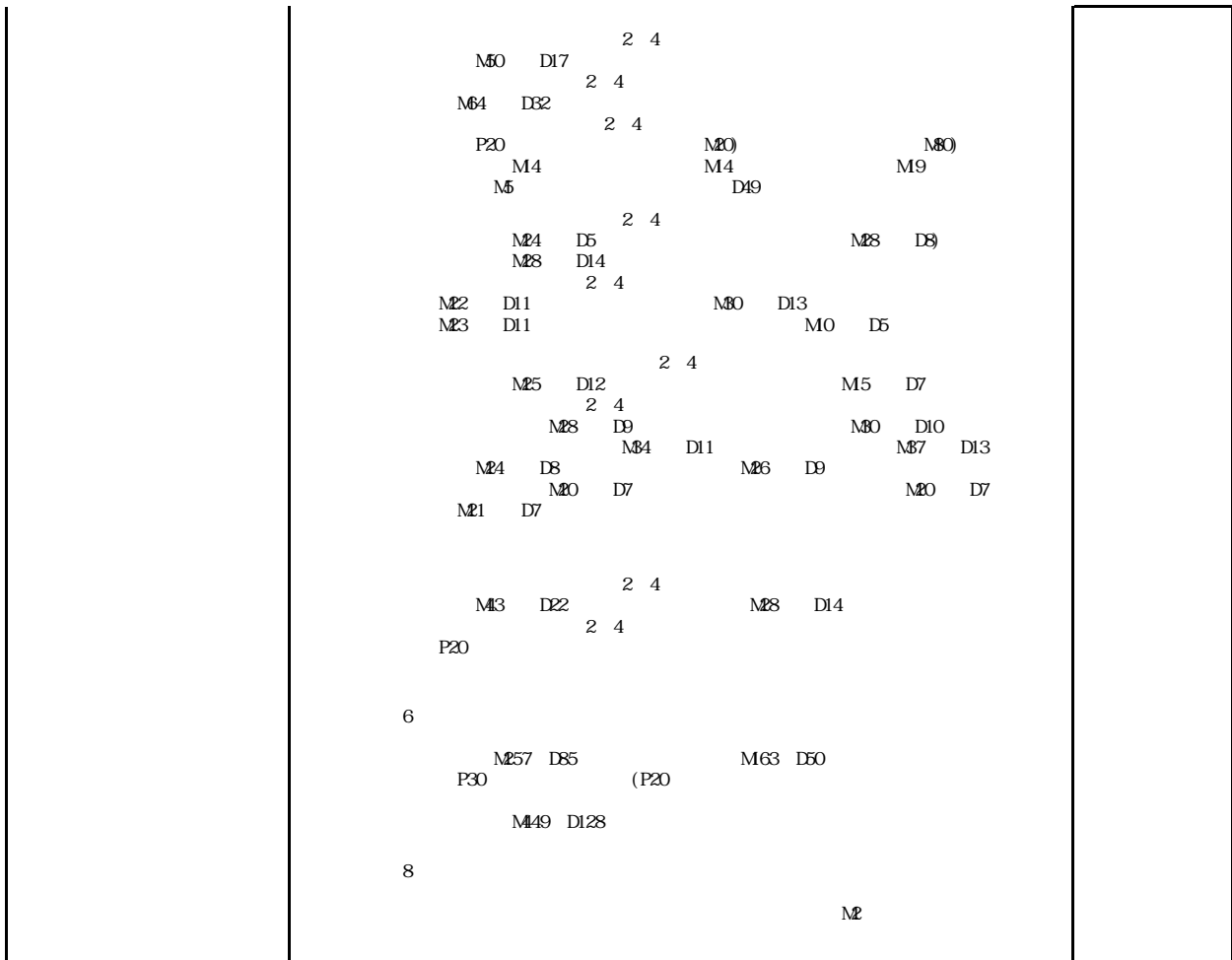


|  |  |   |            |  |            |                                      |     |  |
|--|--|---|------------|--|------------|--------------------------------------|-----|--|
|  |  |   |            |  |            |                                      |     |  |
|  |  |   |            |  |            |                                      |     |  |
|  |  |   |            |  |            |                                      |     |  |
|  | Graduate School of Hiroshima University  |   |            |  |            |                                      |     | Leipzig University<br>(Universität Leipzig)  |
|  | 3 2  |   |            |  |            |                                      |     | Ritterstraße<br>26<br>04109 Leipzig<br>Germany   |
|  | (1)<br>(2)<br>(3)<br>(4)<br>(5)  |   |            |  |            |                                      |     |  |
|  | 2030 SDGs<br>SDGs<br>Employability   |   |            |  |            |                                      |     | NGO  |
|  |  |   |            |  |            |                                      |     |  |
|  | [Graduate School of Advanced Science and Engineering]<br><br>[Joint International Master's Programme in Sustainable Development (Hiroshima University and Leipzig University)] | 2 | 2<br><449> |  | 4<br><898> | (Master of Science)<br><br>2 10<br>1 | 5 1 | Faculty of Economics and Management Science<br><br>Grimmische Straße 12<br>04109 Leipzig<br>Germany<br><br>< > |
|  |  |   | 2          |  | 4          |                                      |     |  |



|  |    |    |   |    |    |  |
|--|----|----|---|----|----|--|
|  |    |    |   |    |    |  |
|  | 52 | 14 | 0 | 66 | 60 |  |

|  |  |       |      |     |      |       |     |       |
|--|--|-------|------|-----|------|-------|-----|-------|
|  |  |       |      |     |      |       |     |       |
|  |  | 3     | 5    | 0   | 0    | 8     | 0   | 43    |
|  |  | (3)   | (5)  | (0) | (0)  | (8)   | (0) | (43)  |
|  |  | 3     | 5    | 0   | 0    | 8     | 0   | 43    |
|  |  | (3)   | (5)  | (0) | (0)  | (8)   | (0) | (43)  |
|  |  | 103   | 93   | 6   | 17   | 219   | 0   | 123   |
|  |  | (103) | (93) | (6) | (17) | (219) | (0) | (123) |
|  |  | 95    | 89   | 4   | 1    | 189   | 0   | 34    |
|  |  | (95)  | (89) | (4) | (1)  | (189) | (0) | (34)  |
|  |  | 64    | 56   | 8   | 1    | 129   | 0   | 146   |
|  |  | (64)  | (56) | (8) | (1)  | (129) | (0) | (146) |
|  |  | 66    | 56   | 4   | 0    | 126   | 0   | 40    |
|  |  | (66)  | (56) | (4) | (0)  | (126) | (0) | (40)  |
|  |  | 6     | 10   | 2   | 0    | 18    | 0   | 120   |
|  |  | (6)   | (10) | (2) | (0)  | (18)  | (0) | (120) |
|  |  | 14    | 1    | 1   | 0    | 16    | 0   | 85    |
|  |  | (15)  | (1)  | (1) | (0)  | (17)  | (0) | (85)  |
|  |  | 6     | 4    | 0   | 0    | 10    | 0   | 46    |
|  |  | (6)   | (4)  | (0) | (0)  | (10)  | (0) | (46)  |

6  
8

|       |       |      |       |        |     |       |
|-------|-------|------|-------|--------|-----|-------|
| 121   | 109   | 5    | 79    | 314    | 0   | 104   |
| (121) | (109) | (5)  | (79)  | (314)  | (0) | (104) |
| 121   | 107   | 3    | 47    | 278    | 0   | 50    |
| (121) | (107) | (3)  | (47)  | (278)  | (0) | (50)  |
| 48    | 49    | 6    | 36    | 139    | 0   | 134   |
| (48)  | (49)  | (6)  | (36)  | (139)  | (0) | (134) |
| 44    | 49    | 6    | 30    | 129    | 0   | 39    |
| (44)  | (49)  | (6)  | (30)  | (129)  | (0) | (39)  |
| 52    | 40    | 22   | 34    | 148    | 0   | 69    |
| (52)  | (40)  | (22) | (34)  | (148)  | (0) | (69)  |
| 84    | 32    | 25   | 25    | 166    | 0   | 151   |
| (84)  | (32)  | (25) | (25)  | (166)  | (0) | (151) |
| 40    | 4     | 5    | 1     | 50     | 0   | 99    |
| (40)  | (4)   | (5)  | (1)   | (50)   | (0) | (99)  |
| 453   | 371   | 68   | 186   | 1078   | 0   |       |
| (454) | (371) | (68) | (186) | (1079) | (0) | ( )   |
| 453   | 372   | 68   | 186   | 1079   | 0   |       |
| (454) | (372) | (68) | (186) | (1080) | (0) | ( )   |

|       |       |       |
|-------|-------|-------|
| 523   | 938   | 1,461 |
| 523   | 938   | 1,461 |
| 1,119 | 211   | 1,330 |
| 1,119 | 211   | 1,330 |
| 26    | 0     | 26    |
| 26    | 0     | 26    |
| 4     | 352   | 356   |
| 4     | 352   | 356   |
| 1,672 | 1,501 | 3,173 |
| 1,672 | 1,501 | 3,173 |

|           |   |   |           |
|-----------|---|---|-----------|
| 951,632   | 0 | 0 | 951,632   |
| 244,009   | 0 | 0 | 244,009   |
| 1,195,641 | 0 | 0 | 1,195,641 |
| 1,134,377 | 0 | 0 | 1,134,377 |
| 2,330,018 | 0 | 0 | 2,330,018 |

|         |   |   |         |
|---------|---|---|---------|
| 514,567 | 0 | 0 | 514,567 |
| 514,567 | 0 | 0 | 514,567 |

8

20

18



|     |   |     |   |    |     |     |      |    |  |        |
|-----|---|-----|---|----|-----|-----|------|----|--|--------|
|     | 4 | 30  |   |    | 120 | ( ) | 1.02 |    |  |        |
|     |   |     |   |    |     |     | 1.00 |    |  | 6      |
|     |   |     |   |    |     |     | 1.05 |    |  | 4      |
|     | 6 | 53  |   |    | 318 | ( ) | 1.00 | 40 |  |        |
|     |   |     |   |    | 160 | ( ) |      |    |  |        |
|     | 4 | 20  |   |    | 80  | ( ) | 1.05 | 21 |  |        |
|     | 4 | 20  |   |    | 80  | ( ) | 1.06 | 21 |  |        |
|     |   |     |   |    |     |     | 1.03 |    |  | 6      |
|     |   |     |   |    |     |     | 1.07 |    |  | 4      |
|     | 6 | 38  |   |    | 228 | ( ) | 1.03 | 18 |  |        |
|     | 4 | 22  |   |    | 88  | ( ) | 1.07 | 18 |  |        |
|     |   |     |   |    |     |     | 1.03 |    |  |        |
|     | 4 |     |   |    |     | ( ) |      | 13 |  | 30     |
|     | 4 |     |   |    |     | ( ) |      | 13 |  | 30     |
| ( ) | 4 |     |   |    |     | ( ) |      | 13 |  | 30     |
| ( ) | 4 | 150 | 3 | 5  | 300 | ( ) | 1.04 | 30 |  |        |
| )   |   |     |   |    |     |     |      |    |  |        |
| ( ) | 4 | 90  | 3 | 3  | 180 | ( ) | 1.04 | 30 |  |        |
| ( ) |   |     |   |    |     |     |      |    |  |        |
| ( ) | 4 | 115 | 3 | 4  | 465 | ( ) | 1.02 | 13 |  | 30     |
| ( ) |   |     |   |    |     |     |      |    |  | 4 ) (  |
| ( ) | 4 | 90  | 3 | 3  | 180 | ( ) | 1.06 | 30 |  |        |
|     |   |     |   |    |     |     | 1.13 |    |  |        |
|     | 4 | 90  | 3 | 10 | 380 | ( ) | 1.13 | 54 |  |        |
|     |   |     |   |    |     |     | 1.06 |    |  |        |
|     | 4 | 80  | 3 | 5  | 160 | ( ) | 1.06 | 30 |  |        |
|     |   |     |   |    |     |     |      |    |  | 2      |
|     | 2 | 50  |   |    | 110 | ( ) | 0.98 | 18 |  | 31     |
|     |   |     |   |    |     |     |      |    |  | ( 10 ) |
|     | 3 | 17  |   |    | 57  | ( ) | 0.81 | 18 |  | 31     |
|     |   |     |   |    |     |     |      |    |  | ( 3 )  |
|     |   |     |   |    |     |     |      |    |  | 2      |
|     | 2 | 64  |   |    | 128 | ( ) | 0.95 | 13 |  |        |
|     | 3 | 32  |   |    | 96  | ( ) | 0.67 | 13 |  |        |
|     |   |     |   |    |     |     |      |    |  |        |
|     | 3 |     |   |    |     | ( ) |      | 12 |  | 28     |
|     |   |     |   |    |     | ( ) |      |    |  |        |
|     |   |     |   |    |     | ( ) |      |    |  |        |
|     | 3 |     |   |    |     | ( ) |      | 12 |  | 28     |
|     |   |     |   |    |     | ( ) |      |    |  |        |
|     |   |     |   |    |     | ( ) |      |    |  |        |
|     | 3 |     |   |    |     | ( ) |      | 12 |  | 28     |
|     |   |     |   |    |     | ( ) |      |    |  |        |
|     | 2 | 20  |   |    | 40  | ( ) | 1.00 | 28 |  | 2      |
|     |   |     |   |    |     |     |      |    |  |        |
|     | 2 | 20  |   |    | 40  | ( ) | 1.72 | 28 |  | 2      |
|     |   |     |   |    |     | ( ) |      |    |  |        |
|     |   |     |   |    |     | ( ) |      |    |  |        |

|  |   |    |  |     |                   |      |    |  |    |
|--|---|----|--|-----|-------------------|------|----|--|----|
|  | 2 | 80 |  | 160 | ( )<br>( )<br>( ) | 1.23 | 28 |  | 2  |
|  | 2 | 14 |  | 28  | ( )<br>( )<br>( ) | 1.21 | 28 |  | 2  |
|  | 2 | 14 |  | 28  | ( )<br>( )<br>( ) | 1.21 | 12 |  | 2  |
|  | 2 | 19 |  | 38  | ( )<br>( )<br>( ) | 1.12 | 12 |  | 2  |
|  | 2 | 5  |  | 10  | ( )<br>( )<br>( ) | 0.80 | 28 |  | 2  |
|  | 3 | 49 |  | 147 | ( )<br>( )<br>( ) | 1.36 | 28 |  | 2  |
|  | 2 | 24 |  | 48  | ( )<br>( )<br>( ) | 1.02 | 16 |  | 2  |
|  | 3 | 5  |  | 15  | ( )<br>( )<br>( ) | 0.53 | 16 |  |    |
|  | 2 | 28 |  | 56  | ( )<br>( )<br>( ) | 1.28 | 16 |  |    |
|  | 3 | 8  |  | 24  | ( )<br>( )<br>( ) | 0.41 | 16 |  |    |
|  | 2 | 28 |  | 56  | ( )<br>( )<br>( ) | 0.67 | 12 |  |    |
|  | 3 | 14 |  | 42  | ( )<br>( )<br>( ) | 0.45 | 12 |  |    |
|  | 2 | 22 |  | 44  | ( )<br>( )<br>( ) | 0.67 | 28 |  | 2  |
|  | 3 | 11 |  | 33  | ( )<br>( )<br>( ) | 0.48 | 28 |  | 2  |
|  | 2 | 30 |  | 60  | ( )<br>( )<br>( ) | 1.08 | 28 |  | 2  |
|  | 3 | 13 |  | 39  | ( )<br>( )<br>( ) | 0.63 | 28 |  | 2  |
|  | 2 | 23 |  | 46  | ( )<br>( )<br>( ) | 1.56 | 28 |  | 2  |
|  | 3 | 11 |  | 33  | ( )<br>( )<br>( ) | 0.75 | 28 |  | 31 |
|  | 2 |    |  |     | ( )<br>( )<br>( ) |      | 28 |  | 28 |
|  | 3 |    |  |     | ( )<br>( )<br>( ) |      | 28 |  | 2  |
|  | 2 | 10 |  | 20  | ( )<br>( )<br>( ) | 1.05 | 28 |  | 31 |
|  | 3 | 5  |  | 15  | ( )<br>( )<br>( ) | 0.53 | 28 |  | 11 |
|  | 2 |    |  |     | ( )<br>( )<br>( ) |      | 11 |  | 11 |
|  | 3 |    |  |     | ( )<br>( )<br>( ) |      | 11 |  | 2  |
|  | 2 | 25 |  | 50  | ( )<br>( )<br>( ) | 1.26 | 10 |  | 2  |
|  | 3 | 12 |  | 36  | ( )<br>( )<br>( ) | 0.30 | 10 |  |    |
|  | 2 |    |  |     | ( )<br>( )<br>( ) |      | 10 |  | 31 |
|  | 3 |    |  |     | ( )<br>( )<br>( ) |      | 10 |  |    |
|  | 2 | 15 |  | 30  | ( )<br>( )<br>( ) | 1.33 | 16 |  | 2  |

|     |   |    |  |    |                          |      |    |    |
|-----|---|----|--|----|--------------------------|------|----|----|
|     | 3 | 7  |  | 21 | ( )<br>( )<br>( )        | 0.23 | 16 |    |
|     | 4 |    |  |    | ( )<br>( )<br>( )<br>( ) |      | 24 | 31 |
| ( ) | 2 |    |  |    | ( )                      |      | 24 |    |
|     | 3 |    |  |    | ( )                      |      | 24 |    |
|     | 2 |    |  |    | ( )                      |      | 24 |    |
|     | 3 |    |  |    | ( )                      |      | 24 |    |
|     | 2 |    |  |    | ( )                      |      | 24 |    |
|     | 3 |    |  |    | ( )                      |      | 24 |    |
|     | 2 |    |  |    | ( )<br>( )<br>( )        |      | 24 |    |
|     | 2 |    |  |    | ( )                      |      | 14 | 24 |
|     | 3 |    |  |    | ( )<br>( )               |      | 14 |    |
|     | 2 | 28 |  | 56 | ( )                      | 1.23 | 22 | 2  |
|     | 3 | 9  |  | 27 | ( )                      | 0.70 | 22 |    |
|     | 2 | 30 |  | 60 | ( )                      | 1.61 | 22 |    |
|     | 3 | 10 |  | 30 | ( )                      | 0.96 | 22 |    |
|     | 2 | 34 |  | 68 | ( )                      | 1.58 | 22 |    |
|     | 3 | 11 |  | 33 | ( )                      | 0.78 | 22 |    |
|     | 2 | 37 |  | 74 | ( )                      | 1.40 | 22 |    |
|     | 3 | 13 |  | 39 | ( )                      | 0.43 | 22 |    |
|     | 2 | 24 |  | 48 | ( )                      | 1.47 | 22 |    |
|     | 3 | 8  |  | 24 | ( )                      | 0.74 | 22 |    |
|     | 2 | 26 |  | 52 | ( )                      | 1.32 | 22 |    |
|     | 3 | 9  |  | 27 | ( )                      | 0.29 | 22 |    |
|     | 2 | 20 |  | 40 | ( )                      | 1.42 | 22 |    |
|     | 3 | 7  |  | 21 | ( )                      | 0.80 | 22 |    |
|     | 2 | 20 |  | 40 | ( )                      | 1.32 | 22 |    |
|     | 3 | 7  |  | 21 | ( )                      | 0.66 | 22 |    |
|     | 2 | 21 |  | 42 | ( )                      | 1.23 | 22 |    |
|     | 3 | 7  |  | 21 | ( )                      | 0.61 | 22 |    |
|     | 2 |    |  |    | ( )<br>( )               |      | 18 | 31 |
|     | 3 |    |  |    | ( )                      |      | 18 |    |
|     | 2 |    |  |    | ( )                      |      | 18 |    |
|     | 3 |    |  |    | ( )                      |      | 18 |    |
|     | 2 |    |  |    | ( )<br>( )               |      | 11 |    |

|  |   |     |  |     |     |      |    |
|--|---|-----|--|-----|-----|------|----|
|  | 3 |     |  | ( ) |     | 11   |    |
|  | 4 |     |  | ( ) |     | 14   |    |
|  | 4 |     |  | ( ) |     | 14   |    |
|  | 2 |     |  | ( ) |     | 21   |    |
|  | 3 |     |  | ( ) |     | 23   |    |
|  | 2 | 43  |  | 86  | ( ) | 1.18 | 6  |
|  | 3 | 22  |  | 66  | ( ) | 0.61 | 6  |
|  | 2 | 28  |  | 56  | ( ) | 1.42 | 7  |
|  | 3 | 14  |  | 42  | ( ) | 0.87 | 7  |
|  | 2 | 170 |  | 170 | ( ) | 0.90 | 31 |
|  | 3 | 70  |  | 70  | ( ) | 0.32 | 31 |
|  | 4 | 97  |  | 97  | ( ) | 1.02 | 31 |
|  | 2 | 76  |  | 76  | ( ) | 0.98 | 31 |
|  | 3 | 25  |  | 25  | ( ) | 0.56 | 31 |
|  | 3 | 20  |  | 60  | ( ) | 0.66 | 16 |

24

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1 2 3  
36 4  
( 144,700 ) 7,971

1 2 3  
31 4  
( 144,700 ) 122,552

1 2 2  
24 5  
( 2,492,191 ) 29,584

1 2 3  
55 4  
( 144,700 ) 298

7 4  
53 10  
2,675 840

1 1 1  
41 4  
( 2,492,191 ) 44,097

1 1 1  
63 4  
( 2,492,191 ) 44,097

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7 4  
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1 1 1  
14 4  
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1 1 89  
5  
( 18,470 ) 3,163

1 3 1

19 4  
( 2,492,191 ) 34,461

2965 5 8 1  
15 4  
( 2,492,191 4,268 ) 1,353

2445  
24 5  
21,197 1,590

1156-2  
49 4  
102,076 578

1 4 3  
52 4  
( 2,492,191 ) 794

1 2 3  
18 6  
( 144,700 ) 84,633

1 2 3  
21 4  
( 144,700 ) 120

1 1 89  
17 4  
( 18,470 ) 53

1 2 3  
42 6  
( 144,700 ) 7,971

2 313  
8 5  
( 2,492,191 ) 3,881

570  
47 4  
111,469 1,022

1 4 2  
8 5  
( 2,492,191 ) 4,153

1 2 2  
12 4  
( 2,492,191 ) 1,207

1 4 2  
13 4  
( 2,492,191 ) 2,507

1 4 2  
15 4  
( 2,492,191 ) 13,074

(1)

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1 3 2  
22 4  
( 2,492,191 ) 1,509

1 5 1

9 4  
( 2,492,191 ) 306

1 7 1  
44 4  
( 2,492,191 ) 1,146

1 1 89  
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( 18,470 ) 386

1 5 3  
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( 2,492,191 ) 2,374

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1 1 1  
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( 2,492,191 ) 443

83

14 10  
( 243 )

1 3 1  
16 4  
( 2,492,191 ) 478

1 7 1  
16 4  
( 2,492,191 ) 1,195

1 1 1  
 16 4  
 ( 2,492,191 ) 783

1 1 1  
 17 4  
 ( 2,492,191 ) 26

HSIM

HSIM(Hiroshima university STARC  
 IGFET Model) CMC(Compact Modeling Council)  
 ( )  
 3 CMC

1 3 1  
 17 7  
 ( 2,492,191 ) 87

1 1 1  
 22 4  
 ( 2,492,191 ) 60

1 3 2  
 28 4  
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1 3 1  
 28 10  
 ( 2,492,191 ) 3,886

1 2 3  
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1 1 1  
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1 2 3  
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3 10 23  
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3 10 32  
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1 2 2  
16 9  
( 2,492,191 ) 136  
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1 1 1  
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|       |  |                    |    |       |
|-------|--|--------------------|----|-------|
|       |  | 120                |    | 480   |
|       |  | 40                 |    | 160   |
|       |  | <sup>3</sup> 130   | 10 | 540   |
| ( )   |  | 157                |    | 628   |
| ( )   |  | 82                 |    | 328   |
| ( )   |  | 73                 |    | 292   |
| ( )   |  | 81                 |    | 324   |
| ( )   |  | 52                 |    | 208   |
|       |  | <sup>3</sup> 140   | 10 | 580   |
|       |  | 30                 | 10 | 140   |
|       |  | <sup>3</sup> 150   | 5  | 610   |
|       |  | 45                 | 5  | 190   |
|       |  | 47                 |    | 188   |
|       |  | 66                 |    | 264   |
|       |  | 59                 |    | 236   |
|       |  | 34                 |    | 136   |
|       |  | 24                 |    | 96    |
|       |  | <sup>3</sup>       | 10 | 20    |
|       |  | 105                |    | 630   |
|       |  | 120                |    | 480   |
|       |  | 53                 |    | 318   |
|       |  | 40                 |    | 160   |
|       |  | 38                 |    | 228   |
|       |  | 22                 |    | 88    |
| ( )   |  | <sup>3</sup> 150   | 5  | 610   |
| ( )   |  | 90                 | 3  | 366   |
| ( )   |  | 115                | 4  | 468   |
| ( )   |  | 90                 | 3  | 366   |
|       |  | <sup>3</sup> 90    | 10 | 380   |
|       |  | <sup>3</sup> 80    | 5  | 330   |
| <hr/> |  |                    |    |       |
|       |  | <sup>3</sup> 2,323 | 80 | 9,844 |



|       |  |                    |    |       |
|-------|--|--------------------|----|-------|
|       |  | 120                |    | 480   |
|       |  | 40                 |    | 160   |
|       |  | <sup>3</sup> 130   | 10 | 540   |
| ( )   |  | 157                |    | 628   |
| ( )   |  | 82                 |    | 328   |
| ( )   |  | 73                 |    | 292   |
| ( )   |  | 81                 |    | 324   |
| ( )   |  | 52                 |    | 208   |
|       |  | <sup>3</sup> 140   | 10 | 580   |
|       |  | 30                 | 10 | 140   |
|       |  | <sup>3</sup> 150   | 5  | 610   |
|       |  | 45                 | 5  | 190   |
|       |  | 47                 |    | 188   |
|       |  | 66                 |    | 264   |
|       |  | 59                 |    | 236   |
|       |  | 34                 |    | 136   |
|       |  | 24                 |    | 96    |
|       |  | <sup>3</sup>       | 10 | 20    |
|       |  | 105                |    | 630   |
|       |  | 120                |    | 480   |
|       |  | 53                 |    | 318   |
|       |  | 40                 |    | 160   |
|       |  | 38                 |    | 228   |
|       |  | 22                 |    | 88    |
| ( )   |  | <sup>3</sup> 150   | 5  | 610   |
| ( )   |  | 90                 | 3  | 366   |
| ( )   |  | 115                | 4  | 468   |
| ( )   |  | 90                 | 3  | 366   |
|       |  | <sup>3</sup> 90    | 10 | 380   |
|       |  | <sup>3</sup> 80    | 5  | 330   |
| <hr/> |  |                    |    |       |
|       |  | <sup>3</sup> 2,323 | 80 | 9,844 |



|    |     |  |  |   |   |     |
|----|-----|--|--|---|---|-----|
|    |     |  |  |   |   | 2 4 |
| 50 | 100 |  |  | 0 | 0 |     |
| 17 | 51  |  |  | 0 | 0 |     |
|    |     |  |  |   |   | 2 4 |
| 64 | 128 |  |  | 0 | 0 |     |
| 32 | 96  |  |  | 0 | 0 |     |
|    |     |  |  |   |   | 2 4 |
| 20 | 40  |  |  | 0 | 0 |     |
| 20 | 40  |  |  | 0 | 0 |     |
| 80 | 160 |  |  | 0 | 0 |     |
| 14 | 28  |  |  | 0 | 0 |     |
| 14 | 28  |  |  | 0 | 0 |     |
| 19 | 38  |  |  | 0 | 0 |     |
| 5  | 10  |  |  | 0 | 0 |     |
| 49 | 147 |  |  | 0 | 0 |     |
|    |     |  |  |   |   | 2 4 |
| 24 | 48  |  |  | 0 | 0 |     |
| 5  | 15  |  |  | 0 | 0 |     |
| 28 | 56  |  |  | 0 | 0 |     |
| 8  | 24  |  |  | 0 | 0 |     |
| 28 | 56  |  |  | 0 | 0 |     |
| 14 | 42  |  |  | 0 | 0 |     |
|    |     |  |  |   |   | 2 4 |
| 22 | 44  |  |  | 0 | 0 |     |
| 11 | 33  |  |  | 0 | 0 |     |
| 30 | 60  |  |  | 0 | 0 |     |
| 13 | 39  |  |  | 0 | 0 |     |
| 23 | 46  |  |  | 0 | 0 |     |
| 11 | 33  |  |  | 0 | 0 |     |
| 10 | 20  |  |  | 0 | 0 |     |
| 5  | 15  |  |  | 0 | 0 |     |
|    |     |  |  |   |   | 2 4 |
| 25 | 50  |  |  | 0 | 0 |     |
| 12 | 36  |  |  | 0 | 0 |     |
| 15 | 30  |  |  | 0 | 0 |     |
| 7  | 21  |  |  | 0 | 0 |     |
|    |     |  |  |   |   | 2 4 |
| 28 | 56  |  |  | 0 | 0 |     |
| 9  | 27  |  |  | 0 | 0 |     |
| 30 | 60  |  |  | 0 | 0 |     |
| 10 | 30  |  |  | 0 | 0 |     |
| 34 | 68  |  |  | 0 | 0 |     |
| 11 | 33  |  |  | 0 | 0 |     |
| 37 | 74  |  |  | 0 | 0 |     |
| 13 | 39  |  |  | 0 | 0 |     |
| 24 | 48  |  |  | 0 | 0 |     |
| 8  | 24  |  |  | 0 | 0 |     |
| 26 | 52  |  |  | 0 | 0 |     |
| 9  | 27  |  |  | 0 | 0 |     |
| 20 | 40  |  |  | 0 | 0 |     |
| 7  | 21  |  |  | 0 | 0 |     |
| 20 | 40  |  |  | 0 | 0 |     |
| 7  | 21  |  |  | 0 | 0 |     |
| 21 | 42  |  |  | 0 | 0 |     |
| 7  | 21  |  |  | 0 | 0 |     |

|              |              |
|--------------|--------------|
| 43           | 86           |
| 22           | 66           |
| 28           | 56           |
| 14           | 42           |
| 170          | 340          |
| 70           | 210          |
| 97           | 388          |
| 76           | 152          |
| 25           | 75           |
| 20           | 60           |
| <u>1,561</u> | <u>3,732</u> |



|   |  |              |              |            |
|---|--|--------------|--------------|------------|
| 2 |  |              |              | <u>2.4</u> |
|   |  | 0            | 0            |            |
|   |  | 0            | 0            |            |
|   |  | 0            | 0            |            |
|   |  | 0            | 0            |            |
|   |  |              |              | ( )        |
|   |  | <u>257</u>   | <u>514</u>   |            |
|   |  | <u>85</u>    | <u>255</u>   |            |
|   |  | <u>163</u>   | <u>326</u>   |            |
|   |  | <u>50</u>    | <u>150</u>   |            |
|   |  | <u>30</u>    | <u>60</u>    |            |
|   |  | <u>20</u>    | <u>60</u>    |            |
|   |  | <u>2</u>     | <u>4</u>     | ) (        |
|   |  |              |              | ( )        |
|   |  | <u>449</u>   | <u>898</u>   |            |
|   |  | <u>128</u>   | <u>384</u>   |            |
|   |  | <u>2</u>     | <u>4</u>     | ) (        |
|   |  | 170          | 340          |            |
|   |  | 70           | 210          |            |
|   |  | 97           | 388          |            |
|   |  | 76           | 152          |            |
|   |  | 25           | 75           |            |
|   |  | 0            | 0            | <u>2.4</u> |
|   |  | <u>1,624</u> | <u>3,820</u> |            |

|   |  | ツ   | イ | ヒ・イ | ネ  | ラ | サブ | テ | ネ | ナ | リ |   |   |   |   |   |   |   |   |   |   | ビ |   |   |     |      |
|---|--|-----|---|-----|----|---|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|------|
|   |  |     |   |     |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |      |
| 1 | Hiroshi na   | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 5 |      |
|   | Japanese Experience of Social Development - Economy, Infrastructure, and Peace | 1 2 |   | 1   |    |   |    | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1 6 |      |
|   | Japanese Experience of Human Development - Culture, Education, and Health      | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 6 |      |
|   |  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 4 |      |
|   |  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     | 0 2  |
|   |  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     | 0 9  |
|   |  | 1 2 |   | 2   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     | 0 1  |
|   |  | 1 2 |   | 2   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     | 0 1  |
|   |  | 1 2 |   | 2   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     | 0 1  |
|   |  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     | 0 1  |
|   | 1 2  |     | 1 |     |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   | 1 2  |     | 1 |     |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   | 11   |     |   | 0   | 14 | 0 |    |   |   |   |   | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0   | 1 35 |
|   | MOT  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   |  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   |  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   |  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   |  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   |  | 1 2 |   | 1   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   | 7  |     |   | 0   | 7  | 0 |    |   |   |   |   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 4 |      |
|   | Regional and Urban Engineering   | 1   |   | 2   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   | Fundamentals of Survey Methodology   | 1   |   | 2   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   | Numerical Environmental Impact Assessment I                                    | 1 2 |   | 2   |    |   |    | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   | Geographic Information System Technology                                       | 1 2 |   | 2   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 1 |      |
|   | 6  |     |   | 0   | 12 | 0 |    |   |   |   |   | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 4 |      |
|   | Basics in Economic Sciences  | 1   |   | 5   |    |   |    |   |   |   |   |   |   |   |   |   |   |   | 3 |   |   |   |   |   | 3 3 |      |
|   | Basics in Social Sciences - International Studies                              | 1   |   | 5   |    |   |    |   |   |   |   |   |   |   |   |   |   |   | 1 |   | 1 |   |   |   | 2 2 |      |
|   | Basics in Sustainable Development  | 1   |   | 5   |    |   |    |   |   |   |   |   |   |   |   |   |   |   | 3 |   |   |   |   |   | 3 3 |      |
|   | 3  |     |   | 0   | 15 | 0 |    |   |   |   |   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 8 8 |      |

|  |   |     |   |     |    |   |  |   |     |   |   |   |   |    |   |   |   |   |    |    |    |   |   |    |    |   |   |
|--|---|-----|---|-----|----|---|--|---|-----|---|---|---|---|----|---|---|---|---|----|----|----|---|---|----|----|---|---|
| S<br>p<br>e<br>c<br>i<br>a<br>l<br>i<br>z<br>a<br>t<br>i<br>o<br>n | Environmental Management                            | 1 2 |   | 2   |    |   |  |   | 1 4 |   |   |   |   |    |   |   |   | 5 |    |    |    |   |   |    | 5  | 2 |   |
|  | Development Technology                              | 1 2 |   | 4   |    |   |  |   | 1 4 |   |   |   |   |    |   |   |   | 5 |    |    |    |   |   |    | 5  | 3 |   |
|  | Transportation Engineering                          | 1 2 |   | 2   |    |   |  |   |     |   |   |   |   |    |   |   |   |   |    |    |    |   |   |    | 0  | 1 |   |
|  | Transportation Planning                             | 1 2 |   | 2   |    |   |  |   |     |   |   |   |   |    |   |   |   |   |    |    |    |   |   |    | 0  | 1 |   |
|  | Tourism Policy                                      | 1 2 |   | 2   |    |   |  |   | 1   |   |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  | Risk Management Technology                          | 1 2 |   | 2   |    |   |  |   |     |   |   |   |   |    |   |   |   |   |    |    |    |   |   |    | 0  | 1 |   |
|  | Sustainable Architecture A                          | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  | Sustainable Architecture B                          | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  | Energy Science and Technology                       | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  | Numerical Environmental Impact Assessment II        | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  | Botany Resources for the Future                     | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  | Environmental Monitoring                            | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  | Biomass Energy Technology                           | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  | Ecosystem Conservation and Management Science       | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  | Management and Conservation of Ecosystems           | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  |   |   |
|  |   |     | 1 |     | 2  |   |  |   |     | 3 | 5 |   |   |    |   |   |   |   | 8  |    |    |   |   |    |    | 8 | 3 |
|  |   |     | 1 |     | 2  |   |  |   |     | 3 | 5 |   |   |    |   |   |   |   | 8  |    |    |   |   |    |    | 8 | 3 |
| 17   |   |     |   | 0   | 36 | 0 |  |   | 3   | 5 | 0 | 0 | 0 | 0  | 8 | 0 | 0 | 0 | 0  | 0  | 0  | 0 | 0 | 0  | 8  | 4 |   |
| I<br>n<br>t<br>e<br>g<br>r<br>a<br>t<br>i<br>o<br>n                |   | 2   |   | 2   |    |   |  |   | 3   | 5 |   |   |   |    |   |   |   | 8 |    |    |    |   |   |    | 8  | 3 |   |
|  |   | 2   |   | 2   |    |   |  |   | 3   | 5 |   |   |   |    |   |   |   | 8 |    |    |    |   |   |    | 8  | 3 |   |
|  | Developing Designing Ability                        | 1 2 |   | 2   |    |   |  |   |     | 1 |   |   |   |    |   |   |   | 1 |    |    |    |   |   |    | 1  | 1 |   |
|  |   | 2   |   | 2   |    |   |  |   |     |   |   |   |   |    |   |   |   |   |    |    |    |   |   |    | 0  | 1 |   |
|  |   | 2   |   | 2   |    |   |  |   |     |   |   |   |   |    |   |   |   |   |    |    |    |   |   |    | 0  | 1 |   |
| International Environmental Cooperation Studies                    | 2   |     | 2 |     |    |   |  | 1 | 4   |   |   |   |   |    |   |   | 5 |   |    |    |    |   |   | 5  | 6  |   |   |
|  | 2   |     | 2 |     |    |   |  | 3 | 5   |   |   |   |   |    |   |   |   | 8 |    |    |    |   |   |    | 8  | 3 |   |
| 8  |   |     |   | 0   | 16 | 0 |  |   | 3   | 5 | 0 | 0 | 0 | 8  | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0 | 0 | 0  | 8  | 7 |   |
| z<br>S<br>a<br>p<br>t<br>e<br>i<br>c<br>o<br>i<br>n<br>a<br>l<br>i | Energy Engineering and Management                   | 1   |   | 5   |    |   |  |   |     |   |   |   |   |    |   |   | 2 |   |    |    |    |   |   | 2  | 2  |   |   |
|  | Water Resources Management                          | 1   |   | 5   |    |   |  |   |     |   |   |   |   |    |   |   |   |   |    |    |    |   |   | 1  | 1  | 1 |   |
|  | Sustainable Energy Economics                        | 1   |   | 5   |    |   |  |   |     |   |   |   |   |    |   |   | 1 |   |    |    |    |   |   | 1  | 1  |   |   |
|  | Land Management                                     | 1   |   | 5   |    |   |  |   |     |   |   |   |   |    |   |   |   |   |    |    |    |   |   | 1  | 1  | 1 |   |
|  | Environmental and Biodiversity Economics            | 1   |   | 5   |    |   |  |   |     |   |   |   |   |    |   |   | 1 |   |    |    |    |   |   | 1  | 1  |   |   |
| 5  |   |     | 0 | 25  | 0  |   |  | 0 | 0   | 0 | 0 | 0 | 0 | 0  | 3 | 0 | 2 | 0 | 0  | 0  | 0  | 5 | 5 | 2  |    |   |   |
| I<br>n<br>t<br>e<br>g<br>r<br>a<br>t<br>i<br>o<br>n                | Integration Module                                  | 2   |   | 7.5 |    |   |  |   |     |   |   |   |   |    |   |   | 1 |   |    |    |    |   |   | 1  | 1  |   |   |
|  | Project Management and Communication Skills         | 2   |   | 2.5 |    |   |  |   |     |   |   |   |   |    |   |   | 1 |   |    |    |    |   |   | 1  | 1  | 1 |   |
|  | Material Flow Management                            | 2   |   | 2.5 |    |   |  |   |     |   |   |   |   |    |   |   | 1 |   |    |    |    |   |   | 1  | 1  |   |   |
|  | Sustainability Assessment of the Energiewende       | 2   |   | 2.5 |    |   |  |   |     |   |   |   |   |    |   |   | 1 |   |    |    |    |   |   | 1  | 1  |   |   |
|  | Modelling in Resources Management                   | 2   |   | 5   |    |   |  |   |     |   |   |   |   |    |   |   | 1 |   |    |    |    |   |   | 1  | 1  | 1 |   |
|  | Entrepreneurship Management                         | 2   |   | 5   |    |   |  |   |     |   |   |   |   |    |   |   | 1 |   | 1  |    |    |   |   | 2  | 2  |   |   |
|  | Economics and Natural Resource Use and Conservation | 2   |   | 5   |    |   |  |   |     |   |   |   |   |    |   |   | 1 |   |    |    |    |   |   | 1  | 1  |   |   |
| 7  |   |     | 0 | 30  | 0  |   |  | 0 | 0   | 0 | 0 | 0 | 0 | 5  | 0 | 1 | 0 | 0 | 0  | 6  | 6  | 2 |   |    |    |   |   |
|  |   | 1 2 |   | 15  |    |   |  |   | 3   | 5 |   |   |   |    |   |   |   | 8 |    |    |    |   |   |    | 8  | 3 |   |
|  | Master's Thesis                                     | 1 2 |   | 15  |    |   |  |   |     |   |   |   |   |    |   |   | 9 | 1 | 4  |    |    |   |   | 14 | 14 | 2 |   |
|  | 2   |     |   | 0   | 30 | 0 |  |   | 3   | 5 | 0 | 0 | 0 | 8  | 9 | 1 | 4 | 0 | 0  | 14 | 22 | 5 |   |    |    |   |   |
| 66   |   |     | 0 | 185 | 0  |   |  | 3 | 5   | 0 | 0 | 0 | 8 | 10 | 1 | 4 | 0 | 0 | 15 | 23 | 47 |   |   |    |    |   |   |

|   |    |    |    |     |       |
|---|----|----|----|-----|-------|
|   |    |    |    |     |       |
| (   | 60 | )  |    |     |       |
|   | 60 | 30 | 30 | 100 | 2 4 2 |
|   | 12 |    | 1  | (0) |       |
|   |    | 2  | 1  |     |       |
|   | 8  |    |    |     |       |
|   | 2  |    |    |     |       |
|   |    | 1  |    |     |       |
|   | 15 |    |    |     |       |
|   |    |    |    | 85  |       |
|   | 30 |    |    | (0) | 15    |
| Specialization  | 15 |    |    |     |       |
| Sustainable Energy Economics , Environmental and Biodiversity Economics |    |    |    |     |       |
| Integration   | 15 |    |    |     |       |
| Integration Module , Project Management and Communication Skills        |    |    |    |     |       |
|   | 15 |    |    |     |       |
| Master' s Thesis  | 15 |    |    |     |       |
|   |    |    |    |     |       |
|   | 22 |    |    | 0   |       |
| Specialization  | 15 |    |    | (0) | 90    |
| Integration   | 7  |    |    |     |       |
|   | 8  |    |    |     |       |



|  |   |     |   |       |      |   |  |     |     |       |  |  |  |       |  |  |     |      |     |
|--|---|-----|---|-------|------|---|--|-----|-----|-------|--|--|--|-------|--|--|-----|------|-----|
| S<br>p<br>e<br>c<br>i<br>a<br>l<br>i<br>z<br>a<br>t<br>i<br>o<br>n | Environmental Management                        | 1 2 |   | 2     |      |   |  |     | 1 4 |       |  |  |  |       |  |  |     | 5 2  |     |
|  | Development Technology                          | 1 2 |   | 4     |      |   |  |     | 1 4 |       |  |  |  |       |  |  |     | 5 3  |     |
|  | Transportation Engineering                      | 1 2 |   | 2     |      |   |  |     |     |       |  |  |  |       |  |  |     | 0 1  |     |
|  | Transportation Planning                         | 1 2 |   | 2     |      |   |  |     |     |       |  |  |  |       |  |  |     | 0 1  |     |
|  | Tourism Policy                                  | 1 2 |   | 2     |      |   |  |     | 1   |       |  |  |  |       |  |  |     | 1 1  |     |
|  | Risk Management Technology                      | 1 2 |   | 2     |      |   |  |     |     |       |  |  |  |       |  |  |     | 0 1  |     |
|  | Sustainable Architecture A                      | 1 2 |   | 2     |      |   |  |     | 1   |       |  |  |  |       |  |  |     | 1 1  |     |
|  | Sustainable Architecture B                      | 1 2 |   | 2     |      |   |  |     | 1   |       |  |  |  |       |  |  |     | 1 1  |     |
|  | Energy Science and Technology                   | 1 2 |   | 2     |      |   |  |     | 1   |       |  |  |  |       |  |  |     | 1 1  |     |
|  | Numerical Environmental Impact Assessment II    | 1 2 |   | 2     |      |   |  |     | 1   |       |  |  |  |       |  |  |     | 1 1  |     |
|  | Botany Resources for the Future                 | 1 2 |   | 2     |      |   |  |     | 1   |       |  |  |  |       |  |  |     | 1 1  |     |
|  | Environmental Monitoring                        | 1 2 |   | 2     |      |   |  |     | 1   |       |  |  |  |       |  |  |     | 1 1  |     |
|  | Biomass Energy Technology                       | 1 2 |   | 2     |      |   |  |     | 1   |       |  |  |  |       |  |  |     | 1 1  |     |
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