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Ideological Morality and Rule of Law

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Introduction to Chinese Modern and Contemporary History

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1. . [M]. 1998
2. 1-4 [M]. 1991
3. 1-3 [M]. 1995
4. [M]. 2018
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Introduction to Basic Principles of Marxism

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1001014

Introduction to Mao Zedong Thought and Theoretical System of Socialism with Chinese Characteristics

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1 / <http://www.icourse163.org/course/CZU-1001755263>

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3 - Curriculum Center <http://www.jingpinke.com/xpe/portal/35b1a2a2-120d-1000-88a3-254b8298559b>

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3	- Curriculum Center	http://www.jingpinke.com/xpe/portal/35b1a2a2-120d-1000-88a3-254b8298559b	
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		http://www.xuetangx.com	
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1		1-3	1-1	18	
2		1-5	1-1	12	
3		1-5	1-1	16	
4		1-3	1-1	14	
5		1-3	1-1	12	
6		1-5	1-1	8	
				80	

1		<p>1</p> <p>2</p> <p>3</p> <p>4</p>
2		<p>1</p> <p>2</p> <p>3</p>
3		<p>1</p> <p>2</p> <p>3</p> <p>1</p> <p>2</p>



—2021

		3
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4



—2021

1. G.M

2.

2020 10



—2021

0801002

A
Advanced Mathematics A(II)

0801002

5

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80

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2014.7

- 1.
- 2.
- 3.
- 4.
- 5.

1-1

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—2021

	1	2	3	4	5			
1-1	√	√	√	√	√			

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—2021

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1.

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5

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2.

1

2

1		1-3	1-1	14	
2		1-5	1-1	18	
3		1-5	1-1	16	



4		1-3	1-1	16	
5		1-3	1-1	16	
				80	

1		<p>1</p> <p>2</p> <p>3</p> <p>4</p>
2		<p>1</p> <p>2</p> <p>3</p>
3		<p>1</p> <p>2</p> <p>3</p> <p>1</p> <p>2</p> <p>3</p>
4		



5		$\frac{1}{3} \times \frac{1}{3} + \frac{2}{3} \times 0.6$

$$= \quad \times 30 \% + \quad \times 70 \%$$

	/		/	
		30%		1-1
			100%	
		70%		1-1

1.

2.

3

1. G.M

2.



—2021

2020 10



0802001

A
College Physics A I

0802001

3.0

48

48

()

() () 2014

() (5) 2017

1	1	1.1	1
2	2	2.1	2



--	--	--	--

1			6	/ /	1 2
2			4	/ /	1 2



3			4	/ /	1 2
4			7	/ /	1 2



5			4	/ /	1 2
6			6	/ /	1 2
7			9	/ /	1 2



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1.

2.



1		
2		
3		
4		
5		$\frac{1}{3}$ $\frac{1}{3}$

$$= \quad \times 50\% + \quad \times 50\%$$

			1	2



	50%			30%	20%	
	50%					
				10%		
				5%		
				15%		
					20%	
	100%			60%	40%	

1.

= _____



2.

- 1. . () (). 2014.
- 2. . () (5).
- 2017.
- 3. . . 20
- 11.
- 4. . (). ,2015.
- 5. , . () (). 20
- 06.
- 6. , . (). ,2004.
- 7. . (). 2007.

2020 10

0802002

A
College Physics A II

0802002

3.0



—2021

48

48

()

() () 2014

() (5) 2017

1	1	1.1	1
2	2	2.1	2

--	--	--	--	--	--



1			3	/ /	1 2
2			4	/ /	1 2
3	" "		11	/ /	1 2



	" " "				
4			5	/ /	1 2



5	-	-	11	/	1 2



6			6	/ /	1 2

1.

2.



1		
2		
3		
4		
5		$\frac{1}{3}$ $\frac{1}{3}$

$$= \quad \times 50\% + \quad \times 50\%$$

--	--	--	--



			1	2		
	50%		30%	20%		
	50%		/			
			10%			
			5%			
			15%			
				20%		
	100%		60%	40%		

1.

= _____

2.



1. . () (). 2014.
2. . () (5).
- 2017.
3. . . 20
- 11.
4. . (). ,2015.
5. , . () (). 20
- 06.
6. , . (). ,2004.
7. . (). 2007.

2020 10



0802601

A
Experiments of College Physics A(I)

0802601

1.5

24

2

017

1	1	4.2	4

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		/			
1	3	AAđ/	0160b020”H,F2E/VFPe/C5A”Ađ	3	1
2	1			3	1

/
/
AAđ/

3



				/	
				/	
7			3	/	1
				/	
				/	
8			3	/	1
				/	
				/	
9			3	/	1
				/	
				/	
	24	3	7		3



1.

2.

1		1. 2. 3.
2		1. 2.
3		1. 2. 3. 1. 2. 3.
4		
5		1. 2. 1/3 1/3



$$= \quad \times 30\% + \quad \times 70\%$$

			1			
	30%	1 2	30%			
	70%		20%			
			30%			
			20%			
	100%		100%			

= _____



- [1] 2017
 - [2] 2014
 - [3] 2006
 - [4]
 - 2008
 - [5] 2008
 - [6] 2010
 - [7] 2003
 - [8] 2004
 - [9] 2009
 - [10] 2005
 - [11] 2008
- 2020 10



0802602

A
Experiments of College Physics A()

0802602

1.5

24

2017

1	1	4.2	4

--	--	--	--	--	--



1			3	/ /	1
2			3	/ /	1
3			3	/ /	1
4	—		3	/ /	1
5			3	/ /	1





1		1. 2. 3.
2		1. 2.
3		1. 2. 3. 1. 2. 3.
4		
5		1. 1/3 2. 1/3

$$= \quad \times 20\% +$$

$$\times 50\% + \quad \times 30\%$$



			1			
	20%		20%			
	50%		15%			
			20%			
			15%			
	30%		30%			
	100%		100%			

= _____

[1]

2017

[2]

2014

[3]

2006



[4]
2008

[5] 2008

[6] 20

10

[7] 2003

[8] 2004

[9] 2009

[10] 2005

[11] 2008



0301004

**(C)
Computer Language(C)**

0301004

3.0

48

24

24

C

2018 12

C

C

1.

C

2.

1-3

5-1

(

)

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	1	2
1-3	√	√
5-1		√

C

1.

1 C

2.

1 C

2 [main()]

1.

1 C

2

3

4 (float double)

5

6

7

2.

1 C

2

3

4 (float double)

5



6

7

3.

1

2

C

1.

1

2 /

3

if

if

switch break

4

for while do...while

break continue

goto

2.

1 C

2 [printf()/scanf()]

3

4

3.

1

1.

1

2



- 3
- 2.
 - 1
 - 2
 - 3
- 3.
 - 1
 - 2
- 1.
 - 1 return
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7 C
- 2.
 - 1
 - 2 return
 - 3
 - 4
 - 5
 - 6
 - 7
 - 8
 - 9
 - 10 #include #include



3.

1

2

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1	C	1	1.3	2	2
2		1	1.3	2	2
3	C	1	1.3	6	6
4		2 ¹	1.3 5.1	6	6
5		2 ¹	1.3 5.1	4	4
6		2 ¹	1.3 5.1	4	4
				24	24



1	C		2	1.3		
2			2	1.3		
3			6	1.3		
4			6	1.3 5.1		
5			4	1.3 5.1		
6			4	1.3 5.1		

1.

2. " C

"

" C

"

1		1. 2. 3. 4.



2		<ol style="list-style-type: none"> 1. 2. 3. 4.
3		<ol style="list-style-type: none"> 1. 2. 1. 2. 3.
4		
5		<ol style="list-style-type: none"> 1. $1/3$ 2. $1/3$ 3. 0.6
6		<ol style="list-style-type: none"> 1. 2. 3.



		3.
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$$= \quad \times 20\% + \quad \times 20\% + \quad \times 60\%$$

	/		/	
	30%		10 5 4 3	
	70%	20%		1.3 5.1
		20 %	40% 40%	1.3 5.1
		60 %	30% 60% 10%	1.3 5.1



—2021

2020 10



0101103

An Introduction to Professions

0101103

0.5

8

1.

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3-2

30%



—2021

5-3

40%

8-3

3

0%

	1	2	3
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5-3			
8-3			

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- 1.
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1		1 2	3-2 5-3	2	
2		2	5-3	2	
3		3	8-3	4	
				8	

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1



3		
4		$\frac{1}{3} \times 0.6 + \frac{2}{3} \times 0.6$

$$= \frac{1}{3} \times 80\% + \frac{2}{3} \times 20\%$$

	/		/	
		80%		3-2 5-3 8-3
		20%	20 10	8-3

0.6

$$i = \frac{A_i + B_i}{100(A_i + B_i)}$$

$$A_i = \dots \times i$$

$$B_i = \dots \times i$$

1. , 2021

2. . 2021 . 2021





—2021

0000007

Careers Advice

0000007

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2011.1

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11-1

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11-1	√		
12-1			√

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			12-1		
3		1 2 3	6-3 11-1 12-1	2	
4		1 2 3	6-3 11-1 12-1	2	
5		1 2 3	6-3 11-1 12-1	2	
6		1 2 3	6-3 11-1 12-1	2	
7		1 2 3	6-3 11-1 12-1	2	
8		1 2 3	6-3 11-1 12-1	2	
				16	

1.

2.

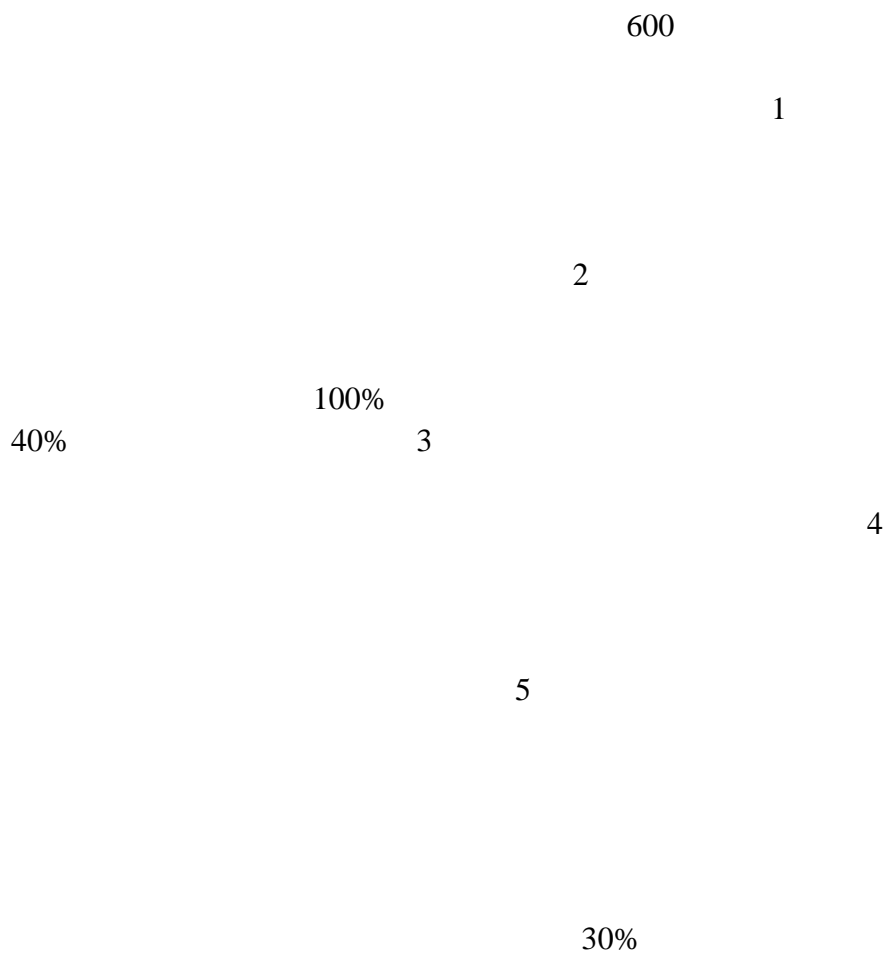
3.

1		1 2 3
2		1 2 3 4 5





—2021





—2021

3.

2020 10



0101104

Labor Education for College Students

0101104

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8-3

	1	2	3	4
8-3	√	√	√	√

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- 3
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- 5
- 6
- 7

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—2021

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C919

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—2021

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- 2.

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2020



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1		1	8-3	2	
2		1	8-3	2	
3		3	8-3	2	
4		3	8-3	2	
5		2	8-3	2	
6		2	8-3	2	
7		2	8-3	2	
8		1	8-3	2	
9		4	8-3		4
10		4	8-3		8
11		4	8-3		4
				16	16

1		1
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		3
2		1
		2
		3
		4



3		<p style="text-align: center;">1</p> <p style="text-align: center;">2</p> <p style="text-align: center;">1</p> <p style="text-align: center;">2</p> <p style="text-align: center;">3</p>
4		
5		<p style="text-align: center;">1</p> <p style="text-align: center;">2</p> <p style="text-align: right;">1/3</p>

1. + 1-2

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2021.

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[M].

2019.

31 [M].

2016.



——2021

[M]. 2016.

2013. [M].

[M]. 2012.



0000008

Foundations of Innovation and Entrepreneurship for College Students

0000008

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120

1	1	3-3
2	2	12-2



			100	1 2
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			120	

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		"	"	9	
		120			
120					



			100	DQCX1101	
			80	DQCX1102	
			60	DQCX1103	
			20	DQCX1104	
			80	DQCX1201	
			60	DQCX1202	
			40	DQCX1203	
			15	DQCX1204	
			40	DQCX1301	
			30	DQCX1302	
			20	DQCX1303	
			10	DQCX1304	
			20	DQCX1401	
			10	DQCX1402	
			5	DQCX1403	
			30	DQCX2101	
			20	DQCX2102	
			15	DQCX2103	
			10	DQCX2104	
			15	DQCX2105	3
		SCI EI	100	DQCX2201	
			20	DQCX2202	1.
			80	DQCX2203	
			10	DQCX2204	2.
			30	DQCX2205	
			5	DQCX2206	
			50	DQCX2301	1.
			10	DQCX2302	



			20	DQCX2303	2.
			5	DQCX2304	
			40 /	DQCX2401	
			20 /	DQCX2402	
			20 /	DQCX2403	
			10 /	DQCX2404	
			10 /	DQCX2405	
5 /	DQCX2406				
			5 /	DQCX2501	
		6	60	DQCX3101	
		6	10 /	DQCX3102	
		40	10 20	DQCX4101	
			5 20	DQCX4102	
			120	DQCX4201	



—2021

		2018	
3+2	1		60



000002

Military theory

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36



—2021

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2020 10



000012

Campus Mental Health

000012

32

2021

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—2021

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4		2	
5		2	
6		2	



7		2	
8		2	

1			2
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3			2
4			2
5			2
6			2
7			2
8			2

	/		/	
		10%		3.3
		20%	2 2	3.3
		40%		3.3
		30%		3.3



$$E_i = \mathring{a}(B_{ij} \text{ ' } C_j) / \mathring{a}(A_{ij} \text{ ' } C_j)$$

Aij i j

Bij i j

Cj j

1.

2.

1.

2

021

2.

2017

2016

2011

2010

2016

2005

2022 7





000005

Campus Safety

000005

1

16

/

1	1	3-4



—2021

2	2	6-2
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1

2

3

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1

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—2021

3

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1.



—2021

2.

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5





0801008

Linear Algebra

0801008

2

32

32

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2014.6

1.

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5.

1-1

	1	2	3	4	5			



—2021

1-1	√	√	√	√	√			

1.

1

2

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4

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n

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1

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3.

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		2 3 4
2		1 2 3
3		<p style="text-align: center;">1 2 3</p> <p>1 2 3</p>
4		
5		<p style="text-align: center;">1 2</p> <p style="text-align: right;">1/3 1/3</p>



—2021

	=	×10% +	×10% +	×
30%+	×50%			
	10%			1-1
	10%			1-1
	30%			1-1
	50 %			1-1

1.

2.

3

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2.

—2021



2020.9



0801006

Theory of Probability

0801006

3

48

48

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2017.8

- 1.
- 2.
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1-1

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—2021

	1	2	3	4	5			
1-1	√	√	√	√	√			

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—2021

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- 2
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- 1
- 2
- 3.

1		1-3	1-1	8	
2		1-5	1-1	10	
3		1-5	1-1	6	
4		1-3	1-1	8	
				32	

1		1
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2		1
		2



		3 4
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4		
5		2 1 1/3 1/3

30%+ = ×10% + ×10% + ×
 ×50%

	/		/	
		10%		1-1



		10%		1-1
		30%		1-1
		50 %		1-1

1.

2.

3

1.

2.

3.



0107010

A
Mechanical Drawing A I

0107010

2.5

40

36

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2016

1.

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1-3

5-1

12-2

	1	2	3	4	5	6
1-3	√	√	√	√	√	√
5-1				√		√
12-2			√			

1.

2.

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1.

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2

1		1 2 4 5	1-3 5-1 12-2	4
2		1 2 5	1-3	10
3		1 3 5	1-3 5-1	10
4		1 3 4 5	1-3 5-1	10
5		2 3 5	1-3 5-1	2
				36

1		A3	2	1-3	



2		A3	2	1-3		

A 0107010 4

0 /2.5

1		1 2 3
2		1 2 3 4 5



3		1 2 3
4		
5		1 2 1/3 1/3

$$= \quad \times 30\% + \quad \times 70\%$$

	/		/	
		30%	30%	1-3 5-1
		70%	70% 10% 32% 58%	1-3 5-1

0.6



- [1]2016
- [2]2015
- [3]2010
- [4]2012

2020 10



0107011

A
Mechanical Drawing A II

0107011

3.5

56

36

20

A

2016

1.

2.

3.

4.

5.

6.



1-3

5-1

12-2

	1	2	3	4	5	6
1-3	√	√	√	√	√	√
5-1				√		√
12-2			√			

1.

1

2

3

4

5

2.

1.

1

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3

1.

1

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3



—2021

4

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9

10

11

2.

1

2

3



1.

1 AutoCAD

2

3

4

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7

2.

1 AutoCAD

AutoCAD

AutoCAD

AutoCAD

2

3 AutoCAD

AutoCAD

AutoCAD

AutoCAD







		20%	20%	1-3 5-1
		20%	AutoCad 20%	1-3 5-1
		60%	60% 15% 20%	30% 20% 15%
				1-3 5-1

0.6

[1]2016

[2]2015

[3]2010

[4]2012

[5] 22017



—2021

2020 10



—2021

0107020

A
Engineering Mechanics A(I)

0107020

4.5

72

68

4

2014.1

I

I

1.

2.

3.

1-2

2-1

4-1



	1	2	3
1-2	√		
2-1		√	
4-1			√

1.1

1.2

1.3

2.1

2.2

2.2.1

2.2.2

2.2.3

2.3



2.4

2.4.1

2.4.2

2.5

2.6

2.6.1

2.6.2

2.7

2.7.1

2.7.2

2.7.3

2.8

2.9

2.10



1		1 3	1-2 4-1	8	
2		1	1-2	6	
3		1 2	1-2 2-1	12	
4		1 3	1-2 4-1	2	
5		2 3	2-1 4-1	6	2
6		2	2-1	6	
7		2 3	2-1 4-1	10	
8		1 2	1-2 2-1	6	
9		1 2	1-2 2-1	6	
10		3	4-1	2	2
13		2 3	2-1 4-1	4	
				68	4

1			1	4-1	
2			1	4-1	



3			1	4-1		
			1	4-1		

1		1 2



		3
2		1 2 3 4 5
3		1 2 3 1 2 3
4		
5		1 2 3 1/3 1/3 0.6

$$= \quad \times 30\% + \quad \times 10\% + \quad \times 60\%$$

	/		/	
--	---	--	---	--



		15%	5	1-2 2-1
			10%	
		15%	1-3	2-1
			10%	
		10%	4	4-1
			4	
			20%	
		60%	60%	1-2 2-1
			50%	4-1
			20%	
			30%	
			50%	
			30%	
			20%	

0.6

$$i = \frac{A_i + B_i + C_i}{100 A_i + B_i + C_i}$$

$$A_i = \quad \times \quad i$$

$$B_i = \quad \times \quad i$$

$$C_i = \quad \times \quad i$$



—2021

- [1] . 2014.10.
- [2] . 2011.

2020 10



0107021

A
Engineering Mechanics A(II)

0107021

2

32

32

I

2014.1

II

I

1.

2.

3.

I

1-2

2-1

4-1

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—2021

	1	2	3
1-2	√		
2-1		√	
4-1			√

1.

1.1

1.2

1.3

1.4

2.

2.1

2.2

2.3

2.4



3.

1		1	1-2	2	
2		1	1-2 2-1	6	
3		1 2	1-2 2-1	6	
4		1 3	1-2 2-1 4-1	12	
5		2 3	2-1 4-1	4	
6		2	2-1	2	
				32	

I

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1		<p>1</p> <p>2</p> <p>3</p>
2		<p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>
3		<p>1</p> <p>2</p> <p>3</p> <p>1</p> <p>2</p> <p>3</p>
4		
5		<p>1</p> <p>2</p> <p>3</p> <p>1/3</p> <p>1/3</p> <p>0.6</p>

= $\times 30\% +$ $\times 70\%$



	/		/	
		15%	5 10%	1-2 2-1
		15%	1-3 10%	2-1
		60%	60% 50% 20% 30% 50% 30% 20%	1-2 2-1 4-1

0.6

$$i = \frac{A_i + B_i}{100(A_i + B_i)}$$

$A_i = \dots \times i$
 $B_i = \dots \times i$

[1] . : 2011.7.

[2] . : 2015.9.



—2021

2020 10



0209601

A

Electrical Engineering and Electronics

0209601

3.5

56

56

0

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2013.11

1.

2.

3.



	1	2	3
2-3	√		
3-2		√	
5-1			√

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1 PN

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3 555
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 3 555

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 3

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 1 /
 2 /

3.
 1
 2

1		1	2-3	6	
2		1 3	2-3 5-1	6	
3		1 3	2-3 5-1	4	
4		1 2	2-3 5-1	6	
5		1 2 3	2-3 3-2 5-1	10	
6		1 2 3	2-3 3-2 5-1	12	
7		3	5-1	6	



8		1 3	2-3 5-1	6	
				56	

1		1 2 3
2		1 2 3 4 5
3		1 2 3 1 2 3



4		
5		$\begin{matrix} & 1 & & 1/3 & \\ & & & & 1/3 \\ 2 & & 3 & & 0.6 \end{matrix}$

$$= \quad \times 40\% \quad \times 60\%$$

	/		/	
		20%		2-3
		10%		2-3
		10%	1-3	3-2
		60%	60%	2-3 3-2 5-1

0.6



—2021

$$\begin{array}{l} \text{Ai=} \\ \text{Bi=} \end{array} \quad \begin{array}{l} i \\ \\ \end{array} = \frac{\begin{array}{l} ' \text{Ai}+ \\ 100 ' (\text{Ai}+ \text{Bi}) \end{array}}{\begin{array}{l} \times \\ \times \end{array} \quad \begin{array}{l} ' \text{Bi} \\ \\ i \end{array}}$$

2020 10



0107037

Mechanical Principle

0107037

2.5

40

36

4

, . . . : ,2020
&

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1.

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2.

(, , , ,)

,

3.

4



1-2

2-2

3-1

4-2

	1	2	3	4				
1-2	√							
2-2		√						
3-1			√					
4-2				√				







;

1		1	1-2	2		2
2		2 3 4	2-2 3-1 4-2	5	2	7
3		2 3	2-2 3-1	6		6
4		2 3	2-2 3-1	4		4
5		2 3 4	2-2 3-1 4-2	6	2	8
6		2 3	1-2 2-2 3 -1	5		5
7		2 3	2-2 3-1	2		2
8		2 3	2-2 3-1	2		2
9		2 3	2-2 3-1	2		2
10		2 3	2-2 3-1	2		2
				36	4	40

1			2	4-2		
2			2	4-2		



1		
2		

3		
---	--	--



4		
5		$\frac{1}{3}$ $\frac{1}{3}$ 0.6

$$= \quad \times 45\% + \quad \times 5\% + \quad \times 50\%$$

	/		/	
		10%	10%	1-2
		35%	35%	
			50%	
		5%	1	4-2
			5%	



		50%	“ ”	50%		1-2
				30%		2-2
			60%		10%	3-1

0.6

$$i = \frac{\times A_i + \times B_i + \times C_i}{100 \times (A_i + B_i + C_i)}$$

$$A_i = \times i$$

$$B_i = \times i$$

$$C_i = \times i$$

[1] . [M]. : ,2019



0107038

Mechanical Design

0107038

2.5

40

36

4

. . : ,2018.9
&

1

2

3

1.

2.

3.

4



1-2

2-2

3-1

4-3

	1	2	3	4				
1-2	√							
2-2		√						
3-1			√					
4-3				√				



—2021

v

v

“

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“

”

”

”





1		1	1-2	1		1
2		1 2 3	1-2 2-2 3-1	1		1
3		1 2 3	1-2 2-2 3-1	4		4
4		1 2 3	1-2 2-2 3-1	2		2
5		1 2 3	1-2 2-2 3-1	4		4
6		1 2 3	1-2 2-2 3-1	2		2
7		1 2 3	1-2 2-2 3-1	8		8
8		1 2 3	1-2 2-3 3-1 4-3	2		2
9		1 2 3 4	1-2 2-2 3-1 4-3	4	2	6
10		1 2 3	1-2 2-2 3-1	2		2
11		1 2 3	1-2 2-2 3-1	4		4
12		1 2 3	1-2 2-2 3-1	2	2	4
13						
				36	4	40

1			2	1-2 2-2 3-1 4-3		
2			2	1-2 2-2 3-1 4-3		



1		1 2 3
2		1 2 3 4

1

2

3

3

1
2 •žhα€Y E _'ë Q ', e πm '



5	2	1	1/3	1/3	0.6
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$$= \quad \times 30\% + \quad \times 10\% + \quad \times 60\%$$

	/		/	
		10%	10%	3-1 4-3
		20%	35% 50%	
		10%	1 5%	4-3
		60%	" " 60% 60% 30% 10%	3-1 4-3

0.6

$$i = \frac{\hat{A}_i + \hat{B}_i + \hat{C}_i}{100 (\hat{A}_i + \hat{B}_i + \hat{C}_i)}$$

$$A_i = \quad \times \quad i$$

$$B_i = \quad \times \quad i$$



—2021

Ci= × i

- [1] . [M]. : ,2019
- [2] . [M]. : ,2012
- [3] . [M]. : 2019.

2021.10



0108012

Engineering Materials

0108012

2

32

30

2

2018.8

/

1.

2.

3.



1-3

4-1

	1	2	3
1-3	√	√	
4-1			√

1.

1

2

3

“

”

2.

1

2

1.

1

2

2.

1

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3

1.

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3

1.

1

2

2.

1

2

3

1.

1

2

3

2.

1

2

3



1		1	1-3	4	
2		2	1-3	4	
3		3	4-1	8	1
4		2	1-3	10	1
5		3	4-1	4	
				30	2

		45	
1			1

2		T12	20	45	60	T8	1
							2

--	--



—2021

1

2

1



	/		/	
		20%	20-30 20%	1-3
		10%	1-3 10%	4-1
		10%	2 2 10%	4-1
		60%	20% 30% 10% 30% 40%	1-3 4-1 60%

0.7

$$A_i = \quad \times \quad i$$

$$B_i = \quad \times \quad i$$

$$C_i = \quad \times \quad i$$



—2021

- [1] 2011.2.
- [2] 2012.2.



0108013

Intelligent Manufacturing Technology

0108013

3

48

42

6

,2021.01

&

1.

2.



3.

4

5.

1-3

2-1

3-2

4-2

5-1

	1	2	3	4	5
1-3	√				
2-1		√			
3-2			√		
4-2				√	
5-1					√

1.

1

2

3

2.

1

3.

1

2

3

4.



1.

1

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CAD



2.

1 CAD

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1 3

2

3 CAD

4.

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3.

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4

4.

“ ”

1.

1



2

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3

4.

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3.

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4.

1.

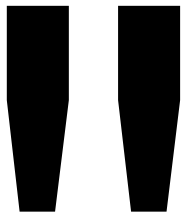
1

2

3 3D



- 4
- 5
- 2.
- 1
- 3.
- 1
- 4.



1		5	5-1	3	0	3
2		2 5	2-1 5-1	6	0	6
3		2 3	2-1 3-2	8	3	11
4		1 4	1-3 4-2	6	3	9
5		2 3	2-1 3-2	6	0	6 5 2



2			3	3-2		
---	--	--	---	-----	--	--

1		1 2 3
2		1 2 3 4
3		1 2 3
4		



5	1	1/3
	2	1/3
	3	0.6

$$= \quad \times 40\% + \quad \times 10\% + \quad \times 50\%$$

	/		/	
		15%	15%	1-3 5-1
		25%	25%	
			50%	
		10%	2	3-2 5-1
			10%	
		50%	50%	1-3 2-1 4-2
			30%	
			40%	
			30%	

0.6

$$i = \frac{A_i + B_i + C_i}{100(A_i + B_i + C_i)}$$

$$A_i = \quad \times \quad i$$



—2021

Bi= × i

Ci= × i

[1] . () [M].

2021.

[2] . [M]. 2018

2021.10



0108014

Electromechanical Hydraulic Control Technology

0108014

3

48

32

16

2018.5

2003.2

1.

2.



—2021

1-3 2-2

	1	2
1-3(H)	√	
2-2(H)		√

H-

1.

1

2

3

4

2.

1

2

1.

1

2

3

4

2.

1

2

3

4



1.

1

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3

2.

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1.

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1

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1

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1

2

1.

1

2



- 3
- 4 :
- 5
- 2.

- 1.
- 1
- 2
- 3 PLC
- 2.

:

- 1.
- 1
- 2
- 3 4 4 4

23B4> TF0 12 Tf 9.12 0 Td <0E301D623FB72278> Tj -9.12 -23.28 T





6			3	1-3	2-2	

1		1 2 3
2		1 2 3 4 5



3		<p>1</p> <p>2</p> <p>3</p> <p>1</p> <p>2</p> <p>3</p>
4		
5		<p>1</p> <p>1/3</p> <p>2</p> <p>2</p> <p>1/3</p> <p>0.6</p>

= ×20%+ ×30%+ ×50%

	/		/	
		10%	20-30	1-3 2-2
			10%	
		10%		1-3 2-2
			10%	



		30%	6 30%	1-3 2-2
		50%	50% 40% 20% 40%	1-3 2-2

0.6

$$i = \frac{A_i + B_i + C_i}{100(A_i + B_i + C_i)}$$

$A_i = \quad \times \quad i$
 $B_i = \quad \times \quad i$
 $C_i = \quad \times \quad i$



0108015

Sensor Networks and Fundamentals of Signal Processing

0108015

2 2.5

32 40

26 34

6

2020.4

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1.

0.1

2.

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3.

0.3



3-1

4-2

6-1

	1	2	3
3-1	√		
4-2		√	
6-1			√

1.

1

2

3

2.

1

2

3

1

“ ”

“ ”

2

WHERE, WH

AT, WHY, WHO

1.

1

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3

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1



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“ ” “ ”“

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2

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- 3
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- 1
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- 2
- 3

“ ”

- 1.
- 1
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- 3
- 2.
- 1
- 2
- 3

“ ”“

” “ ”

- 1.
- 1
- 2
- 3



2.

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1.

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CAT

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CAT

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3

1		4		4
2		6(8)		6(8)
3		4(6)		4(6)
4		6	4	10
5		4(6)		4(6)
6		2(4)	2	4(6)
		26(34)	6	32(40)





3		“ ” “ ”
4		“ ”
5		1 1/3 2 1/3 3

$$= \quad \times 40\% + \quad \times 10\% + \quad \times 50\%$$

	/		/	
	+ +	40%	20% 20% 40%	3-1 6-1
		10%	3 3	4-2
		50%	10% 50%	3-1 6-1

0.6



—2021

$$i = \frac{\times Ai + \times Bi + \times Ci}{100 \times (Ai + Bi + Ci)}$$

$$Ai = \times i$$

$$Bi = \times i$$

$$Ci = \times i$$

- [1] . 2002
 - [2] . 2002
 - [3] . 2
- 004



0108016

Robot Technology and Application

0108016

3

48

C

Arduino

C

1

C

2

3

1-4

20%

2-3

40%



5-2

40%

	1	2	3
1-4			√
2-3	√	√	
5-2	√	√	

1

1.1

1.2

1.3 Arduino

2 Arduino

2.1

2.2 Arduino

2.2.1

2.2.2

2.2.3

2.2.4

2.2.5

2.2.6

2.3 Arduino

2.4 C

2.4.1



2.4.2

2.4.3

2.4.4

2.4.5

2.5

3 LED

5

6

7

8

9

10

1		1 2
2		1 2



		4	3
3		1	2
		2	3
4			
5			ppt

$$= \quad \times 30\% + \quad \times 70\%$$

	/		/	
		20%	20%	5-2
		10%	1-3	1-4
			10%	
		70%	IO MCU ADC	1-4 5-2

0.6



—2021

$$i = \frac{\times Ai + \times Bi}{100(Ai + Bi)}$$

Ai = \times i Bi

= \times i

Arduino

2011

2021 10



—2021

0108034

Course Design of Robot Technology and Application

0108034

2

32

C

Arduino

C

1

C

2

3

3-3

100%



- 1
- 2
- 2 Arduino
 - 1
 - 2
 - 3
 - 4
- 3
 - 1
 - 2
 - 4

	1.	
	2.	
	3.	
	1.	



	2.	
	3.	
	4.	

	A 90-100	B 80-89	C 70-79	D 60-69	E <60
20%					
20%					
60%					



—2021

Arduino

2011

2021 10



—2021

0108017

Intelligent Manufacturing Equipment

0108017

3

48

48

2020.9.



2

3

1-4

4-3

5-1

12-2

	1	2	3	4	5	6	7	8
1-4	√	√						
4-3			√					
5-1	√							
12-2			√					

1.

1

2

3

2.

1

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3



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2

3

1		1 2	1-4 4-3	4	



	1 2 3 4	3	5-1		
2	1 2 3 4	1 2 3	1-4 5-3 5-1	8	
3	1 2 3 4 5 6 ;	1 2 3	1-4 5-3 5-1	20	
4	1 2 3 4	1 2 3	1-4 5-3 12-2	12	
5	2 3 4	1 2 3	1-4 5-3 12-2	4	



1	1 2 3
2	1 2 3 4 5
3	1 2 3 1 2 3
4	



5		2	1	3	1/3	1/3	0.6
---	--	---	---	---	-----	-----	-----

$$= \quad \times 30\% + \quad \times 70\%$$

	/		/	
		15%	5	10%
		15%	1-3	10%
		60%		60%

0.6

$$i = \frac{A_i + B_i}{100(A_i + B_i)}$$

$$A_i = \quad \times \quad i$$

$$B_i = \quad \times \quad i$$



- [1] . , 2020.
- [2] . , 2021.
- [3] . (, 2019.
- [4] . 2021.
- [5] . , , 2009.
- [6] . , , 2015.



—2021

0108035

Course Design of Intelligent Manufacturing Equipment

0108035

2

2



1

2

3:

3-3

9-2

10-1

10-2

11-2

	1	2	3	4	5	6	7	8
3-3	√	√	√					
9-1		√	√					
10-1	√	√						
10-2	√		√					
11-2	√	√						



—2021

2

3

4

5

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6

1.

2.

3.

4.

5.

6.

7.

1

50%



1.

2.

4.

5.

PPT

2

10

6

1		3	
2		2.5	
3	1	1	7
4		1	
5		1.5	
		15	



	1.	
	2.	
	3.	
	4.	
	1.	
	2.	
	3.	
	4.	
	1.	
	2.	
	3.	

1. 2

2.

3. 1

4. 1



$$= \quad \times 30\% + \quad \times 20\% + \quad \times 50\%$$

100	+ +	1.5 30 3.3 30 9.2 40	
100		1.5 50 3.3 50	
100		1.5 50 3.3 50	
=		×30%+	×20%+ ×50%

	1. 2. 3. 4.
	1 2 3 4
	1 2 3 4
	1 2 3



	4
	1 2 3 4

0.6

- [1] . , 2019.
- [2] . , 2020.
- [3] . 2018.
- [4] . 2011.
- [5] . .
- [6] 2001.
- [7] 2008.
- [8] 1 3) 2001.



0108018

Digital Design and Manufacturing

0108018

3

48

1.

2.

3.

“ ”

1-4

60%



—2021

1-5

20%

12-2

20%

	1	2	3
1-4			
1-5			
12-2			

1.

1

2

3

4

5

6

2.

1

2

1.

1

2

3

4

5

6



2.

1

2

1.

1

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3

4

5

6

2.

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2

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2.

1

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1.

1



2

3

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6

7

2.

1

PLM

ERP FMS CIMS WAM IOT DE

1.

1

2

3

4

5

6



- 2.

 - 1 CAD
 - 2 CAD

- 1.

 - 1
 - 2

- 2.

 - 1

- 1.

 - 1
 - 2
 - 3
 - 4

- 2.

 - 1 CAM

1		3	12-2	3	
2		1	1-4	6	
3		1	1-4	4	
4		1	1-4	5	
5		1	1-4	3	
6		1	1-4	3	
7		2	1-5		15
8		2	1-5		6
9		2	1-5		3
				24	24



1		1 2 3
2		1 2 3 4 5
3		
4		1 2 3 1/3 1/3 0.6

= ×20%+ ×20%+ ×60%

	/		/	
		20%	5	12-2



—2021

			20%	
		20%	20%	1-5

,> A×B40A5>





0108019

Planning and Design of Intelligent Manufacturing System

0108019

2.0

32

32

. / . : ,2020.

1.

2.

3.

2-1

4-2

5-



	1	2	3
2-1 H	√		
4-2 H		√	
5-2 H			√

H-

1.

1

2

3

3D

RFID

4

2.

1

2

3

4

5 3D

6 RFID

7

8

9

10

11

12



1.

1

2

3

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2.

1

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3

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7

8

9

1.

1

2



3

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2.

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10

11

1.

1

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3

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2.

1

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3



- 4
- 5
- 6
- 7
- 8
- 9

1.

- 1
- 2
- 3
- 4

IPPS

2.

- 1
- 2
- 3
- 4
- 5
- 6
- 7

IPPS

1.

- 1
- 2

MES

AGV

SCAD

A Andon



					CO
E		COE			COE
		MES			
	3	WIS	WIS		WIS
	4				
2.					
	1				
	2	MES	AGV	SCADA	Andon
	3				
	4				
			COE		CO
E		COE			M
ES					
	5	WIS		WIS	

1		1	2-1	2	
2		1	2-1	6	
3		3	2-1 5-2	8	
4		3	2-1 5-2	8	
5		3	2-1 5-2	6	
6		2	4-2	2	
				32	



1		1 2 3
2		1 2 3 4
3		1 2 3 1 2 3
4		



5		1	1/3
		2	1/3

$$= \times 2+ \times 3 \times 1+$$

	i			
1	1		100	0.4
			20	0.6
2	2		100	1
3	3		100	0.4
			30	0.6

$$= \frac{\sum_{i=1}^n a_i}{\sum_{i=1}^n a_i}$$



[1] . . : ,2020.

	90 100	80 89	70 79	60 69	<60
1					
2					
3					

	90 100	80 89	70 79	60 69	<60
3					

90 100	80 89	70	60	<60
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		79	69	
90%	80%	70%	60%	60%

1	1 2		20
2	1 2		50
3			30



0108020

System Integration Technology of Intelligent Factory

0108020

3

48

(1)

2021

(2)

ABB

20

18

()

1.

2.

3.



—2021

1-5

20%

2-3

40%

5-2

4

0%

	1	2	3
1-5	√		
2-3		√	
5-2			√

()

1.

(1)

(2)

(3)

2.

(1)

(2)

()

1.

(1)

(2)

(3)

(4)

2.

(1)



—2021

(2)

(3)

()

2025

1.

(1)

(2)

(3)

(4)

2.

(1)

(2)

(3)

()

1.

(1)

(2)

(3)

(4)

2.

(1)

(2)

(3)

(4)

()



1.

(1) MPS203

(2)

(3)

2.

(1) MPS203

(2) 232 485 CAN

Modbus Profibus Ethercat

(3)

()

1.

(1)

(2)

(3)

(4) ABB/FANUC

2.

(1)

(2) ABB

PLC PROFIBUS

(3)



6		1 2 3	1-5 2-3 5-2	12
				48

1		1 2
2		1 2 3 4
3		1 2 3



		1 2 3 4
4		
5		1 2 3 1/3 1/3 0.6

$$= \quad \times 30\% + \quad \times 70\%$$

	/		/	
		15%	20-30 10%	1-5 2-3
		15%	10%	2-3 5-2
		70%	60% 40% 20% 40%	1-5 2-3 5-2

0.6

$$i = \frac{\tilde{A}i + \tilde{B}i}{\overset{\sim}{100}(\tilde{A}i + \tilde{B}i)}$$



—2021

	Ai=	×	i	
	Bi=	×	i	
1				2
021				
2				2016
3				2020
4				2018
5				2018
6				2016
7				2019
8				2019
9	-			2019
10				20
20				

2021 10



—2021

0108031

Comprehensive Controlling Practice of Intelligent System

0108031

2

32

1

2

3

5-2

40%

~ 324 ~



9-1

20%

10-1

40%

	1	2	3
5-2	√		
9-1			√
10-1		√	

1.

2.

3.

4.

1.

2.

3.

4.

5.



2 10

5

1		4	
2		2	
3		4	
4		2	
		10	

1.

2.

3.

	1.	
	2.	



	3.	
	4.	
	1.	
	2.	
	3.	
	4.	
	1.	
	2.	
	3.	

1.

2. 1

$$= \quad \times 20\% + \quad \times 50\% + \quad \times 30\%$$

--	--	--	--	--



		20%		9-1
		50%		5-2
		30%		10-1

2019

2021 10



Intelligent Manufacturing System Design Practice

0108032

1.0

1

2020

PLC

1.

2.

8-1

12-2

	1	2	3
8-1			
12-2			



/ /PLC

/

PLC

1		1	0.5
2		1	
3		2	
4		1	
		5	

--	--	--	--



100		8-1 50 12-2 50	50	1 5 3	5 10
100		8-1 50 12-2 50			
100		8-1 50 12-2 50			
		=	×20%+	×30%+	×50%

	A 90-100	B 80-89	C 70-79	D 60-69	E <60
30%					
70%					



	A 90-100	B 80-89	C 70-79	D 60-69	E <60
50%	CAD/CAE/ CAM/PLC/	CAD/CAE / CAM/PLC /	CAD/ CAE/ CAM/PLC/	CAD/ CAE/ CAM/PLC /	CAD/ CAE/ CAM/PLC/
50%					

PLC

1.



—2021

2.

[1]

2020

[2]

2020

20%

30%

50%



0108033

Course design of mechanical design

0108033

2

2

2014.6

1.

2.



3.

4.

()

1. 1

1

2. 2

1

“ ”

3. 3

1



4. 4 ,

1

2

3

4

5. 5

1

6. 6

1

1. 5-10 1 AUTOCAD

CA

D



2. 8 00-11 30 1 30-5 3
0 1/3

3.

2 10

		/	
1		1	/
2		2	/
3		4	/
4		1	/
5		1	/
6		1	/
		10	

- -

	1.	



	2.	
	3.	2014.6
	1.	→ → → → → → →
	2.	- -
	3.	5~10 8 00-11 30 1 30-5 30 1/3
	4.	2
	1.	
	2.	= ×15%+ ×50%+ ×20%+ ×15%
	3.	

- 1.
- 2.
- 3.

$$= + \times 20\% + \times 50\% + \times 10\%$$



	/		/	
		20%		10-1
		50%		3-3 9-1 9-2
		10%		10-1
	+	20%		10-1

- [1] . , : 2019
- [2] . , : 2018
- [3] . : 2014.6
- [4] . : 2015.4
- [5] . 1~5, : , 2008
- .



0107013

Integrated Practice of Industrial Robot Control

0107013

1

1

2

013

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“

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1.

2.

5-1

12-1

	1	2					



5-1							
12-1							

1

2

1 1 A3

2 3-4 A3

3 1

CAD

4 3-4

CAD

1		0.25	
2		1.5	
3		1.75	
4		1	
5		0.5	
		5	



	1.	
	2.	
	3.	
	1.	
	2.	
	3.	
	4.	

100	1	5.1 16	12.1 4
-----	---	--------	--------



0.				
	2	5.1	16	12.1 4
	3	5.1	48	12.1 12
		=	+	+

6

	A 90-100	B 80-89	C 70-79	D 60-69	E <60
20%					
20%					
60%					

= 20%+ 20%+



—2021

60%

10%

- [1] , . . . ; ,2016.
- [2] . . . : ,2015.
- [3] . . . : ,2013
- [4]. 2 2017
- [5] . 2013.
- [6]

2020 10



—2021

0108002

Metal Working Practice

0108002

2

2

2015 5

1.



2.

3.

4.

5.

0% 8-2 30% 6-1 9-1 3
 30% 9-2 10%

	1	2	3	4	5
6-1	√	√	√	√	√
8-2	√	√	√	√	
9-1	√	√	√	√	
9-2	√				

1



—2021

2

2-3

1

2

1

2

1



2

1

2

3

4

2

1

2



2 10

1		4	6-1 8-2 9-1	2.5	0.5 2
2		3	6-1 8-2 9-1	2.5	0.5 2
3		2	6-1 8-2 9-1	1	0.3 0.7
4		1	6-1 8-2 9-1 9-2	2	0.5 1.5
5		4	6-1 8-2 9-1	1	0.3 0.7
6		4	6-1 8-2 9-1	0.5	0.2 0.3
7		5	6-1	0.5	0.2 0.3
		10			



	1.	
	2.	
	3.	
	4.	
	1.	
	2.	
	3.	
	4.	
	1.	
	2.	



		10%	5 2	8-2 9-1
		80%		6-1 8-2 9-1 9-2
		10%		6-1

2

1

25%

30%

10%

10%

15%

5%

5%

2

2020 10



—2021

0108029

Electrical and Electronics Practice



6-1 8-2 9-1

	1	2	3
1-2:	√		
8-1		√	
3-3			√

1. B

2.

3.

4.

1.

2.

3.

4.

5.



1				1	
2	,			1	
3	,			1	
4	-	1 2 3	1.2 3.3 8.1	1	
5	,	1 2 3	1.2 3.3 8.1	1	
6	Z3040 Z3040	1 2 3	1.2 3.3 8.1	1	
7	Z3040	1 2 3	1.2 3.3 8.1	1	
8	Z3040	1 2 3	1.2 3.3 8.1	1	
9	Z3040	1 2 3	1.2 3.3 8.1	1	
10		1 2 3	1.2 3.3 8.1	1	
		10			



1.

2.

3.

	1.	
	2.	
	3.	
	4.	
	1.	
	2.	
	3.	
	4.	
	1.	
	2.	
	3.	

1.

-

Z3040



—2021

2. 2

= $\times 20\%$ + $\times 50\%$ + $\times 30\%$

.1



--	--	--	--	--

0.6

$$i = \frac{A_i + B_i + C_i}{100(A_i + B_i + C_i)}$$

$A_i = \dots \times i$
 $B_i = \dots \times i$
 $C_i = \dots \times i$

B

1. 2017
 2. 2014
 3. /
- 2012

2020 10



—2021

0108030

Intelligent Production Practice

0108030

1

1

,2021.01

/

() . :

1.

2.

3.



5-3

6-2

7-2

	1	2	3
5-3	√		
6-2		√	
7-2			√

1.

1

2

3

4 2-4

2.

1

2 4000-5000



1		2	6-2	1	
2		1 2 3	5-3 6-2 7-2		1
3		1 2 3	5-3 6-2 7-2		2
4		1 2 3	5-3 6-2 7-2		1
				1	4

$$= \quad \times 20\% + \quad \times 30\% + \quad \times 50\%$$

	/		/	
	+	20%	100%	5-3 6-2 7-2
		30%		5-3 6-2 7-2
		50%		5-3 6-2 7-2

[1] . () [M].

2021.

[2] . [M]. 2018



0108031

Comprehensive Controlling Practice of Intelligent System

0108031

1

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2

3

6-2

50%

7-1

30%

8-3



20%

	1	2	3
6-2	√		
7-1		√	
8-3			√

1.

2.

3.

4.

1.

2.

3.

4.

5.

1 5

5

1		2	



2		1	
3		2	
4		1	
		10	

1.

2.

3.

	1.	
	2.	
	3.	
	4.	
	1.	
	2.	



	3.	
	4.	
	1.	
	2.	
	3.	

1.

2. 1

$$= \quad \times 20\% + \quad \times 50\% + \quad \times 30\%$$

--	--	--	--	--

20%



Course design of mechanical design

0108033

2

2

2014.6

1.

2.



3.

4.

()

1. 1

1

2. 2

1

“ ”

3. 3

1



4. 4 ,

1

2

3

4

5. 5

1

6. 6

1

1. 5-10 1 AUTOCAD
CA

D

2. 8 00-11 30 1 30-5 3



0

1/3

3.

2 10

		/	
1		1	/
2		2	/
3		4	/
4		1	/
5		1	/
6		1	/
		10	

- -

	1.	
	2.	



	3.	2014.6
	1.	→ → → → → → →
	2.	- -
	3.	5~10 8 00-11 30 1 30-5 30 1/3
	4.	2
	1.	
	2.	= ×15%+ ×50%+ ×20%+ ×15%
	3.	

- 1.
- 2.
- 3.

$$= \quad + \quad \times 20\% + \quad \times 50\% + \quad \times 10\%$$

	/		/	
--	---	--	---	--



		20%		10-1
		50%		1-5 3-3 9-1
		10%		10-1
	+	20%		10-1

- [1] . , : 2019
- [2] . , : 2018
- [3] . : 2014.6
- [4] . : 2015.4
- [5] . 1~5, : , 2008
- .



—2021

0108036

Course Design of Intelligent Manufacturing System Planning and Design

0108036

2.0

2

2020

PLC

1.

2.

3.

9-2 10-2

11-1



	1	2	3
9-2			
10-2			
11-2			

/ /PLC

/

PLC

1		1	0.5
2		3	



3		4	
4		2	
		10	

100		8-1 50 12-2 50	50 1 5 3 5 10
100		8-1 50 12-2 50	
100		8-1 50 12-2 50	
		=	×20%+
		+	×30%
			×50%

	A 90-100	B 80-89	C 70-79	D 60-69	E <60
30%					
70%					



--	--	--	--	--	--

	A 90-100	B 80-89	C 70-79	D 60-69	E <60
50%	CAD/CAE/ CAM/PLC/	CAD/CAE / CAM/PLC /	CAD/ CAE/ CAM/PLC/	CAD/ CAE/ CAM/PLC /	CAD/ CAE/ CAM/PLC/
50%					



1.

,

2.

[1]

2020

[2]

2020

20%

30%

50%



0108061

(Graduation Project (thesis))

0108061

14

14

()





4		2	1
5		2	
		14	

100			5	11-2 20
			2 4	3-3 20 10-2 20
			1 3	2-3 20 5-3 20
100			2 4	3-3 25 10-2 25
			1 3	2-3 25 5-3 25
100		()	2 4	3-3 25 10-2 25
			3 5	5-3 25 11-2 25
= $\times 30\% + \times 20\% + \times 50\%$				



()

()

[1] . : 2014.

[2] . () — . :
2015.

[3] . () - . :
2016.

[4] . () . :
2015.

[5] , . () .2019.