



# 43<sup>rd</sup> World Finals | 2019 Porto





















## icpc International Collegiate Programming Contest











































### ICPC World Finals 2019





















final standings





















RANK	TEAM	SCORE	A ○	B ○	C ○	D ○	E ○	F ○	G ○	H ○	I ○	J ○	K ○
1	Northern Eurasia <b>Moscow State University</b>	10 1531	42 1 try	142 1 try		56 1 try	40 2 tries	279 4 tries	114 1 try	92 2 tries	245 1 try	72 1 try	249 6 tries
2	North America <b>Massachusetts Institute of Technology</b>	9 1191	27 1 try	90 1 try		107 1 try	56 1 try	168 1 try	119 2 tries	63 2 tries	278 1 try		243 1 try
3	Asia Pacific <b>The University of Tokyo</b>	9 1386	40 1 try	204 2 tries		62 1 try	31 1 try	230 4 tries	128 3 tries	57 1 try		157 1 try	297 4 tries
4	Europe <b>University of Warsaw</b>	8 891	49 1 try	126 2 tries	11 tries	32 1 try	14 1 try		55 1 try	32 1 try		111 1 try	292 9 tries
5	<b>National Taiwan University</b>	8 1179	27 1 try	165 1 try		38 1 try	142 1 try		130 1 try	208 1 try	278 1 try	191 1 try	
6	<b>University of Wroclaw</b>	8 1200	29 1 try	277 4 tries		28 1 try	57 1 try		212 2 tries	91 2 tries	263 2 tries	103 2 tries	1 try
7	<b>Seoul National University</b>	7 783	74 1 try	103 1 try		31 2 tries	69 3 tries		146 3 tries	82 1 try		118 4 tries	
8	Asia East <b>KimChaek University of Technology</b>	7 803	32 1 try	132 2 tries		78 2 tries	43 1 try		97 1 try	188 1 try		193 1 try	
9	Asia West <b>Sharif University of Technology</b>	7 923	23 1 try	170 2 tries		75 1 try	46 1 try	1 try	148 2 tries	133 1 try		288 1 try	
10	<b>Moscow Institute of Physics &amp; Technology</b>	7 954	47 1 try	155 1 try	1 try	140 1 try	78 2 tries		145 1 try	113 1 try		236 2 tries	
11	<b>National Research University Higher School of Economics</b>	7 990	50 1 try	199 3 tries		76 2 tries	51 2 tries		137 2 tries	104 1 try		273 1 try	
12	<b>The Chinese University of Hong Kong</b>	7 1057	90 1 try	239 4 tries		42 1 try	59 1 try	2 tries	217 2 tries	127 1 try		203 1 try	
13	<b>Peking University</b>	7 1106	34 1 try	245 1 try		119 2 tries	163 2 tries		143 1 try	114 1 try		228 2 tries	







































14		<b>Fudan University</b>	7	1179	24 2 tries	284 6 tries	27 1 try	197 7 tries	152 1 try	131 1 try	124 1 try
15		<b>Nanjing University</b>	7	1184	21 1 try	185 4 tries	86 2 tries	58 1 try	262 4 tries	159 5 tries	173 2 tries
16		<b>University of Oxford</b>	7	1185	54 1 try	295 6 tries	30 1 try	85 2 tries	235 3 tries	178 1 try	148 1 try
17		<b>St. Petersburg ITMO University</b>	7	1296	34 1 try	178 5 tries	105 1 try	160 4 tries	291 4 tries	63 2 tries	245 1 try
18		<b>University of Cambridge</b>	7	1359	161 3 tries	139 1 try	81 1 try	153 1 try	202 4 tries	242 1 try	261 2 tries
19		<b>Shanghai Jiao Tong University</b>	7	1427	47 1 try	298 12 tries	97 1 try	42 1 try	257 2 tries	166 3 tries	220 2 tries
20		<b>Tsinghua University</b>	7	1634	235 5 tries	180 3 tries	95 1 try	150 5 tries	194 2 tries	178 1 try	282 6 tries
21		<b>Universitat Politècnica de Catalunya</b>	6	636	62 1 try	185 1 try	52 1 try	31 1 try	181 1 try	125 1 try	
22		<b>Belarusian State University</b>	6	773	86 1 try	219 3 tries	27 1 try	46 1 try	129 1 try	186 3 tries	
23		<b>Universitas Indonesia</b>	6	815	115 4 tries	223 6 tries	92 1 try	64 1 try	128 5 tries	33 1 try	
24		<b>KAIST</b>	6	869	40 2 tries	290 7 tries	66 1 try	23 2 tries	162 5 tries	68 4 tries	
25		<b>Technische Universität München</b>	6	946	38 1 try	260 4 tries	61 1 try	17 1 try	212 3 tries	198 4 tries	1 try 1 try
26		<b>Harvard University</b>	6	965	159 3 tries	4 tries	82 1 try	115 2 tries	232 2 tries	35 1 try	182 5 tries
27		<b>National Chiao Tung University</b>	6	987	75 1 try	289 1 try	182 1 try	32 1 try	223 3 tries	146 1 try	
28		<b>The University of Texas at Austin</b>	6	989	81 2 tries	284 3 tries	138 1 try	42 1 try		105 1 try	239 3 tries
29		<b>Zhongshan (Sun Yat-sen) University</b>	6	1017	39 1 try		66 1 try	154 4 tries	273 5 tries	80 1 try	205 4 tries
30		<b>Stanford University</b>	6	1073	91 2 tries	3 tries	99 1 try	78 3 tries	196 1 try	253 4 tries	236 1 try
31		<b>Saratov State University</b>	6	1092	94 1 try	8 tries	47 2 tries	219 2 tries	296 2 tries	175 1 try	181 2 tries
32		<b>Zhejiang University</b>	6	1092	63 1 try	210 3 tries	101 1 try	128 1 try	298 6 tries	152 1 try	
33		<b>University of Tsukuba</b>	6	1099	119 1 try	298 5 tries	144 1 try	54 1 try	197 2 tries	127 4 tries	




34		<b>Ural Federal University</b>	6	1112	92 1 try	255 1 try	155 1 try	93 1 try	206 1 try	291 2 tries		
35		<b>Beihang University</b>	6	1150	76 1 try		84 1 try	164 2 tries	246 1 try	215 2 tries	285 3 tries	
36		<b>University of Zagreb</b>	6	1158	83 1 try	270 3 tries	104 1 try	55 1 try		132 2 tries	294 9 tries	
37		<b>Belarusian State University of Informatics and Radioelectronics</b>	6	1160	134 3 tries	1 try	83 1 try	159 2 tries	273 7 tries	28 1 try	283 2 tries	
38		<b>International IT University</b>	6	1168	92 2 tries	245 2 tries	1 try	205 1 try	157 2 tries	264 1 try	145 1 try	4 tries
39		<b>Scuola Normale Superiore</b>	6	1196	112 1 try	299 3 tries	135 2 tries	53 1 try		237 2 tries	260 2 tries	
40		<span>Africa and the Middle East</span> <b>Syrian Virtual University</b>	6	1323	112 3 tries	288 4 tries	172 1 try	108 1 try	282 1 try	221 3 tries	1 try	
41		<b>University of Waterloo</b>	5	549	114 1 try	183 1 try	3 tries	87 1 try	37 1 try		128 1 try	2 tries
42		<b>University of Niš - Faculty of Sciences and Mathematics</b>	5	607	76 1 try	194 3 tries	130 2 tries	44 1 try		103 2 tries	4 tries	
43		<b>ETH Zürich</b>	5	677	84 1 try	1 try	44 1 try	21 1 try		153 3 tries	295 3 tries	
44		<span>Latin America</span> <b>Universidad Nacional de Córdoba - FaMAF</b>	5	687	64 2 tries		197 2 tries	202 2 tries	62 1 try	102 1 try	17 tries	
45		<b>University of British Columbia</b>	5	750	79 1 try	257 3 tries	165 1 try	81 1 try		128 1 try	9 tries	
46		<b>Kyoto University</b>	5	755	44 1 try	5 tries	109 1 try	145 3 tries		170 1 try	247 1 try	
47		<b>University of Latvia</b>	5	755	102 1 try		67 1 try	33 1 try	294 1 try	219 3 tries	1 try	
48		<b>Indian Institute of Technology - Madras</b>	5	806	25 1 try		131 2 tries	99 1 try	287 4 tries	184 1 try		
49		<b>Indian Institute of Technology - Roorkee</b>	5	828	51 1 try	2 tries	128 1 try	163 3 tries	197 1 try	249 1 try		
50		<b>Xi'an Jiaotong University</b>	5	832	114 1 try	7 tries	172 1 try	141 2 tries	87 2 tries	258 2 tries		
51		<b>Hanoi University of Science and Technology</b>	5	901	107 1 try		117 1 try	95 2 tries		263 3 tries	219 3 tries	
52		<b>Universidade Federal de Pernambuco</b>	5	903	56 1 try		108 2 tries	235 1 try	267 4 tries	157 1 try	6 tries	
53		<b>Universidade do Porto</b>	5	935	44 2 tries	267 5 tries	112 1 try	120 3 tries		212 3 tries		

54		<b>St. Petersburg State University</b>	5	979	72		142	189	187	289	
					1 try	9 tries	1 try	4 tries	1 try	3 tries	
55		<b>École Normale Supérieure de Paris</b>	5	990	283	44	118	152	253		
					1 try	2 tries	2 tries	1 try	6 tries	1 try	2 tries
56		<b>South China University of Technology</b>	5	1072	49		172	227	269	295	
					1 try		1 try	4 tries	1 try	1 try	
57		<b>University of Brasilia</b>	5	1101	114		206	100	188	293	
					1 try		1 try	2 tries	7 tries	4 tries	
58		<b>Universidade de São Paulo - Campus de São Carlos</b>	5	1134	55		173	193	284	249	
					1 try		4 tries	3 tries	4 tries	2 tries	1 try
59		<b>Princeton University</b>	5	1153	37		175	210	292	259	
					1 try		3 tries	4 tries	5 tries	1 try	
60		<b>East China Normal University</b>	5	1190	67		216	109		229	249
					2 tries		4 tries	2 tries	10 tries	4 tries	9 tries
61		<b>Waseda University</b>	5	1209	89		194	184	285	257	
					2 tries		4 tries	6 tries	1 try	2 tries	1 try
62		<b>Carnegie Mellon University</b>	4	416	89		96	37		154	
					2 tries	5 tries	1 try	2 tries		1 try	
63		<b>University of Tartu</b>	4	474	81		91	52		170	
					2 tries	4 tries	1 try	3 tries	6 tries	2 tries	
64		<b>Northeastern University (China)</b>	4	580	101		195	106		178	
					1 try		1 try	1 try	3 tries	1 try	
65		<b>University of Southern California</b>	4	587	56		163	63			225
					1 try	3 tries	2 tries	3 tries		4 tries	2 tries
66		<b>Universidad de La Habana</b>	4	619	36		111	181		271	
					1 try	7 tries	1 try	2 tries		1 try	
67		<b>Guangdong University of Technology</b>	4	624	81	249	124	90			
					2 tries	3 tries	1 try	2 tries			3 tries
68		<b>St. Petersburg Campus of Higher School of Economics</b>	4	639	87		55	101		296	
					2 tries		1 try	4 tries	2 tries	2 tries	
69		<b>Universidad Nacional de Rosario</b>	4	660	70		128	160		242	
					2 tries		1 try	3 tries		1 try	
70		<b>Beijing Normal University</b>	4	686	106		150	99		271	
					2 tries		1 try	2 tries	2 tries	2 tries	
71		<b>National Technical University "Kharkiv Polytechnic Institute"</b>	4	696	125	279	77	95			
					1 try	6 tries	1 try	2 tries			10 tries
72		<b>American University of Beirut, Faculty of Arts and Science</b>	4	708	56		117	259		216	
					1 try		2 tries	1 try		3 tries	
73		<b>Alexandru Ioan Cuza University of Iași</b>	4	720	83		147	61		289	
					2 tries		5 tries	1 try		3 tries	2 tries

74		<b>Kazakh-British Technical University</b>	4	731	74 2 tries		157 2 tries	233 5 tries	127 10 tries	2 tries	2 tries
75		<b>Instituto Tecnológico de Aeronautica</b>	4	739	88 1 try	2 tries	162 3 tries	132 4 tries	217 3 tries		
76		<b>Amirkabir University of Technology</b>	4	754	134 1 try		122 1 try	277 2 tries	201 1 try		1 try
77		<b>Southeast University, China</b>	4	762	192 2 tries	1 try	153 1 try	110 2 tries	267 1 try		
78		<b>National University of Singapore</b>	4	833	209 9 tries		85 3 tries	55 2 tries	224 3 tries		5 tries
79		<b>Universidad de Buenos Aires - FCEN</b>	4	838	67 1 try		269 3 tries	84 2 tries	278 5 tries		
80		<b>Bangladesh University of Engineering and Technology</b>	4	857	71 1 try		150 3 tries	276 2 tries	280 2 tries		
81		<b>Faculty of Computer and Information Sciences, Ain Shams University</b>	4	880	80 1 try		183 3 tries		288 3 tries	209 3 tries	1 try
82		<b>International Black Sea University</b>	4	949	45 1 try		232 4 tries	203 4 tries	289 4 tries		
83		<b>Columbia University</b>	4	1063	181 3 tries		271 2 tries	266 1 try		6 tries	225 4 tries
84		<b>University of Illinois at Urbana-Champaign</b>	4	1201	248 6 tries		161 1 try	237 5 tries	295 5 tries		2 tries
85		<b>Indian Institute of Technology - Bombay</b>	3	273	70 2 tries		107 1 try	76 1 try		2 tries	4 tries
86		<b>Harbin Institute of Technology</b>	3	302	65 1 try	1 try	123 2 tries	94 1 try			1 try 1 try
87		<b>The University of Auckland</b>	3	373	80 1 try	3 tries	162 1 try		111 2 tries		5 tries
88		<b>Indian Institute of Technology - Kanpur</b>	3	381	90 1 try		142 4 tries	69 2 tries			5 tries
89		<b>Leiden University</b>	3	455	154 4 tries		183 1 try	58 1 try			1 try
90		<b>Nanjing University of Science and Technology</b>	3	469	95 2 tries	6 tries	147 1 try	187 2 tries			
91		<b>The University of New South Wales</b>	3	478	188 2 tries	7 tries	106 2 tries				144 1 try 6 tries
92		<b>Universidade Federal de Campina Grande</b>	3	478	75 2 tries		162 1 try	201 2 tries		2 tries	1 try
93		<b>Instituto Militar de Engenharia</b>	3	479	139 2 tries		169 1 try	151 1 try			

94		<b>University of Chicago</b>	3	489	54 1 try	206 3 tries	169 2 tries	6 tries
95		<b>Chennai Mathematical Institute</b>	3	490	123 2 tries	84 1 try	183 5 tries	5 tries
96		<b>Universidad Nacional de Ingeniería - FC</b>	3	520	116 3 tries	220 4 tries	84 1 try	2 tries
97		<b>German University in Cairo</b>	3	533	117 2 tries	227 2 tries	129 2 tries	1 try
98		<b>Cairo University - Faculty of Computers and Information</b>	3	594	107 3 tries	115 1 try	272 4 tries	1 try
99		<b>University of Engineering and Technology - VNU</b>	3	615	60 1 try	153 1 try	262 8 tries	5 tries
100		<b>University of Cape Town</b>	3	631	159 4 tries	264 2 tries	128 1 try	2 tries 1 try
101		<b>Duke University</b>	3	654	169 2 tries		195 1 try	270 1 try 1 try
102		<b>Northern (Arctic) Federal University</b>	3	660	148 6 tries		267 3 tries	65 3 tries 1 try
103		<b>South Dakota School of Mines and Technology</b>	3	678	120 2 tries	186 1 try	272 5 tries	4 tries
104		<b>Faculty of Engineering, Cairo University</b>	3	703	99 5 tries	193 1 try	251 5 tries	
105		<b>Sofia University</b>	3	709	202 5 tries	206 1 try	221 1 try	
106		<b>Universidad Nacional de Colombia - Bogotá</b>	3	831	214 5 tries	246 1 try	271 2 tries	
107		<b>Bina Nusantara University</b>	3	844	239 6 tries	230 5 tries	175 2 tries	8 tries
108		<b>IIIT-Delhi</b>	2	177	46 1 try	131 1 try	2 tries	
109		<b>Damascus University - Y!</b>	2	238	61 1 try	157 2 tries	7 tries	1 try
110		<b>Indian Institute of Technology - Patna</b>	2	272	92 2 tries	160 1 try	5 tries	
111		<b>Escuela Superior De Computo Instituto Politecnico Nacional</b>	2	300	88 1 try	212 1 try	7 tries	1 try
112		<b>Faculty of Engineering- Mansoura University</b>	2	304	49 2 tries	195 3 tries	7 tries	
113		<b>Drexel University</b>	2	319				

				82 2 tries	197 2 tries	1 try	2 tries
114	 	<b>Universidad Tecnológica Nacional - Facultad Regional Santa Fe</b>	2 328	56 1 try	272 1 try	9 tries	
115	 	<b>Lebanese American University</b>	2 352	102 3 tries	210 1 try	3 tries	
116	 	<b>The University of Western Australia</b>	2 358		153 2 tries	125 4 tries	
117	 	<b>University of Central Florida</b>	2 360	267 2 tries	73 1 try	3 tries	1 try 6 tries
118	 	<b>Al-Baath University</b>	2 376	122 1 try	254 1 try	5 tries	1 try
119	 	<b>Colorado School of Mines</b>	2 403	138 3 tries	225 1 try	2 tries	
120	 	<b>Universidad de Oriente - Sede Antonio Maceo</b>	2 420	200 3 tries	180 1 try	1 try	6 tries
121	 	<b>Shahjalal University of Science and Technology</b>	2 438	155 2 tries	223 3 tries	2 tries	1 try
122	 	<b>Moscow Aviation Institute</b>	2 439	128 7 tries	191 1 try	16 tries	
123	 	<b>Instituto Tecnológico Autónomo de México</b>	2 440	160 2 tries	260 1 try	4 tries	2 tries
124	 	<b>Universidad de los Andes, Colombia</b>	2 463		246 3 tries	137 3 tries	
125	 	<b>ITESM Campus Monterrey</b>	2 472	156 3 tries	276 1 try		2 tries
126	 	<b>Higher Institute for Applied Sciences and Technology</b>	2 474		258 1 try	196 2 tries	
127	 	<b>Aleppo University</b>	2 487	202 1 try		285 1 try	
128	 	<b>University of Wisconsin - Madison</b>	2 503	249 2 tries	214 2 tries	4 tries	
129	 	<b>Indian Institute of Technology - Kharagpur</b>	2 505	101 4 tries	264 5 tries	7 tries	
130	 	<b>Instituto Tecnológico Superior del Sur de Guanajuato</b>	2 657	252 3 tries		285 5 tries	
131	 	<b>Damascus University - Daddy's Home</b>	1 144	124 2 tries	5 tries	1 try	4 tries
132	 	<b>University of Nebraska - Lincoln</b>	1 311		291 2 tries	3 tries	

133		<b>The American University in Cairo</b>	1 421											261
				2 tries										9 tries
134		<b>Shahid Beheshti University</b>	0 0	2 tries 2 tries										
		<b>Tecnológico de Costa Rica</b>	0 0	1 try					1 try					
SUMMARY			<b>585</b>	<input type="checkbox"/> 128	<input type="checkbox"/> 41	<input type="checkbox"/> 0	<input type="checkbox"/> 127	<input type="checkbox"/> 109	<input type="checkbox"/> 3	<input type="checkbox"/> 54	<input type="checkbox"/> 81	<input type="checkbox"/> 5	<input type="checkbox"/> 33	<input type="checkbox"/> 4
				<input type="checkbox"/> 127	<input type="checkbox"/> 170	<input type="checkbox"/> 18	<input type="checkbox"/> 82	<input type="checkbox"/> 232	<input type="checkbox"/> 29	<input type="checkbox"/> 152	<input type="checkbox"/> 106	<input type="checkbox"/> 16	<input type="checkbox"/> 157	<input type="checkbox"/> 21
				<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 0
				<input type="checkbox"/> 21min	<input type="checkbox"/> 44min	<input type="checkbox"/> n/a	<input type="checkbox"/> 27min	<input type="checkbox"/> 14min	<input type="checkbox"/> 168min	<input type="checkbox"/> 55min	<input type="checkbox"/> 28min	<input type="checkbox"/> 245min	<input type="checkbox"/> 72min	<input type="checkbox"/> 243min

**Cell colours**

Solved first
Solved
Tried, incorrect
Tried, pending
Untried

Last Update: Fri 05 Apr 2019 09:14:24 WEST  
using DOMjudge