

Hydraulic & pneumatic circuit design course road map

Topics	lessons	alternative
	mechanical hydraulic basics course	
Stage 1		
Introduction to Fluid Power Systems	1,2, 3	https://www.youtube.com/watch?v=rkiBikJuWyE&t=9s
		https://www.youtube.com/watch?v=YlmRa-9zDF8&t=6s
		https://www.youtube.com/watch?v=pWuxYnqYDnk&t=485s
Fluid properties		https://www.youtube.com/watch?v=fJefjG3xhW0
• Basic circuit components and schematics		https://www.youtube.com/watch?v=NsgShyrcvqA
Stage 2		
• Pumps	5,6,7,8,9	https://www.youtube.com/watch?v=7aZghp-il3g
		https://www.youtube.com/watch?v=pWuxYnqYDnk&t=485s
• Actuators		
i) Pistons	10	https://www.youtube.com/watch?v=9-J2ECAKHj4&t=95s
ii) Motors	11	https://www.youtube.com/watch?v=wvI293UKmLc&list=PLPPOF4tq3_SzrA7zbf_FBledp0Q_ziJ-w&index=2
Stage 3		
• Valves		https://www.youtube.com/watch?v=pzUrhc_U3AY&t=234s
i) Check valves	30	https://www.youtube.com/watch?v=lrltcAqyYW4&t=65s
ii) Pressure control valves	12,13,14,15,16	https://www.youtube.com/watch?v=Isc08DU6WTE
		https://www.youtube.com/watch?v=Whg6sbVkJ3E&t=43s
iii) Flow control valves	25,26	https://www.youtube.com/watch?v=EHGyCP2eWTg&t=26s
		https://www.youtube.com/watch?v=fXP805a5LGo&t=31s
iv) Directional control valves	21,22,23,24	
• Accumulators	31,32	https://www.youtube.com/watch?v=fm8qVhwjD6k&list=PLGIY5FS8WA8pmGocXtwY91BW-9U0b_GmU&index=4
		https://www.youtube.com/watch?v=SqtdfXJhjpc&t=398s
Stage 4		
• Principles of designing a circuit Calculations		https://www.youtube.com/watch?v=sSmIMXUBNsg
• Simulation		https://www.youtube.com/watch?v=nzO14xhINIQ&t=83s
		https://www.youtube.com/watch?v=z1ft7RawO6A&t=76s

		https://www.youtube.com/watch?v=wwfzHskhv3A&t=3s
Sources:		
mechanical hydraulic basics course	https://youtube.com/playlist?list=PL-KZzrfRQqaUS6WV48_e75RDGTQ1J4gQd	
Rexroth manual volume 1	https://issuu.com/ahmadfikry/docs/the_hydraulic_trainer_volume_1_ba	
hydraulic trainer	https://www.youtube.com/playlist?list=PLGIY5FS8WA8pmGocXtwY91BW-9U0b_GmU	
Simulation program (fluidsim)	https://drive.google.com/drive/folders/1qGYlppRSPIJITt7cE-LDgi_BfhQhaCLh?usp=sharing	