



Shahid Beheshti University of Medical Sciences  
School of Public Health and Safety

# School of Public Health & Safety Laboratories

## Environmental Chemistry Laboratory





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**This laboratory was started along with the establishment of Environmental Health Engineering Department in 1370. In line with the mission of the Environmental Health Engineering Department in training graduates who are aware of the modern science issues, expert, efficient, responsible and sensitive to the health of the environment and society, all tests related to the measurement of physicochemical parameters of environmental matrices including water, wastewater, and soil are done in this lab.**

### **Laboratory expert information**



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## School of Public Health & Safety Laboratories

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### Laboratory tools and equipment

High pressure liquid chromatography (HPLC) KNAUER
Spectrophotometer, DR 5000
Spectrophotometer, DR 2000
Spectrophotometer, DR 2010
Kjeldahl nitrogen digestion and measurement device
Manometric BOD analyzer
BOD incubator
COD reactor
Jar test
Turbidity meter
Digital balance



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Centrifuge
Furnace, 1000 °C
Oven
Vacuum oven + vacuum pump
Filtration set + Vacuum pump
Shaker
Hot plate
Heather Stirrer
Heating mantle
pH meter
Flame photometer
Water distiller
Incubator
Ultrasonic cleaner
Aeration pump
Peristaltic pump
Refrigerator freezer
Bain-marie
TDS/EC meter



## Laboratory hood

### Chemistry laboratory services

Parameter	Method
Fluoride	Standard Method/ 4500F <sup>-</sup> / SPADNS Method
Chloride	Standard Method/ 4500 Cl <sup>-</sup> / Argentometric Method
Nitrite	Standard Method/4500 NO <sub>2</sub> <sup>-</sup> / Colorimetric Method
Nitrate	Standard Method/ Series 4500 NO <sub>3</sub> <sup>-</sup> / Ultraviolet Spectrophotometric Screening Method
Turbidity	Standard Method/ 2130B/ Nephelometric Method
Color	Standard Method/ 2120C/ Spectrophotometric-Single-Wavelength Method
Sulphate	Standard Method/ 4500 SO <sub>4</sub> <sup>2-</sup> -E/ Turbidimetric method
Sulphite	Standard Method/ 4500 SO <sub>3</sub> <sup>2-</sup> -B/ Iodometric Method



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Sulfide	Standard Method/ 4500 S <sup>2-</sup> -F/ Iodometric Method
Cyanide	Standard Method/ 4500 CN <sup>-</sup> -E,D/ Colorimetric Method/Titrimetric Method
Oil and Grease	Standard Method/ 5520/ solid-phase, partition-gravimetric method
Hardness (Total, Ca <sup>2+</sup> , Mg <sup>2+</sup> )	Standard Method/ 2340/ EDTA Titrimetric Method
temperature	Standard Method/ 2550/ Direct Measurement
Detergent	Standard Method/5540/ MBAS-CTAS
Alkalinity	Standard Method/ 2320/ Titration Method
Acidity	Standard Method/ 2310 B / Titration Method
Ammonia	Standard Method/ 4500 NH <sub>3</sub> / Colorimetric Method
Calcium	Standard Method/ 3500 Ca/EDTA Titrimetric Method
Magnesium	Standard Method/ 3500 Mg/Calculation Method



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Sodium	Standard Method/ 3500 Na- B/ Flame Emission Photometric Method
Potassium	Standard Method/ 3500 K- B/ Flame Emission Photometric Method
Free chlorine	Standard Method/ 4500 Cl Chlorine / DPD Colorimetric Method
Phosphate	Standard Method/ 4500 P- C,D/ Vanadomolybdophosphoric Acid/ Colorimetric Method
Phenol	Standard Method/5530 D/ Direct Photometric Method
Salinity	Standard Method/ 2520 B/ Electrical Conductivity Method
Odor	Standard Method/ 2150
Dissolved oxygen	Standard Method/ 4500 O- C/ Azide Modification
Organic carbon	1) Walkley Black Method Standard Method/5310
Ozone	Using an ozone measurement kit
pH	Standard Method/ 4500 H <sup>+</sup> / Electrometric Method
EC	Standard Method/ 2510 B



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Settleable solids (SS)	Standard Method/ 2540 F
TDS	Standard Method/ 2540 C/ Total Dissolved Solids Dried at 180°C
TSS	Standard Method/ 2540 D/ Total Suspended Solids Dried at 103-105°C
TS	Standard Method/ 2540 B
VS, FS	Standard Method/ 2540 E/ Fixed and Volatile Solids Ignited at 550°C
BOD <sub>5</sub>	Standard Method/ 5210 B/ 5-Day BOD Test
COD	Standard Method/5220 B,D/ Open and Closed Reflux