

# Astrobiologija 2012

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## sinopsis

### 1. *Istorijske, filozofske i konceptualne osnove astrobiologije*

- a. Tradicionalni pluralizam i skepticizam
- b. *NASA Roadmap* i tri kanonska pitanja astrobiologije
- c. Definicije života i njihova heuristička vrednost
- d. Teorije kompleksnosti i veštački život (A-life)
- e. Teza o kontinuitetu i posledice

### 2. *Savremena kosmologija i kosmološki preduslovi za nastanak života*

- a. Posmatrački selekcionni efekti i antropičko načelo
- b. Empirijska fina podešavanja i objašnjenja
- c. Novi standardni kosmološki model

### 3. *Život na Zemlji*

- a. Ultrakratka istorija naše planete
- b. Savremene teorije biogeneze
- c. Ekstremofili i "biosfera u senci"
- d. Teorije evolucije, darvinizam i Moderna sinteza
- e. Paleontološka evidencija i povećanje kompleksnosti
- f. Velike radijacije i masovna izumiranja
- g. Gradualizam, katastrofizam i nastanjivost
- h. Hipoteza "retke Zemlje"

### 4. *Život na planetama*

- a. Cirkumstelarne nastanjive zone
- b. Nastanjivost u Sunčevom sistemu: Mars
- a. Nastanjivost u Sunčevom sistemu: sateliti džinovskih planeta
- b. Ekstrasolarne planete i nastanjivost
- c. "Svet krasuljaka"

### 5. *Astrohemija*

- a. Nukleosinteza i poreklo hemijskih elemenata
- b. Hemijske reakcije u međuzvezdanom prostoru
- c. Organska jedinjenja u svemiru i njihov transport
- d. Galaktička nastanjiva zona

e. Panspermija?

## 6. *Inteligencija i SETI*

- a. Noogeneza i evolucija kognitivnih fenomena
- b. Potraga za vanzemaljskom inteligencijom (SETI)
- c. Skeptički argumenti: Simpsonov argument
- d. Skeptički argumenti: Karterov antropički argument
- e. Skeptički argumenti: Fermijev paradoks

## 7. *Quo vadis?*

- a. *Black Clouds?* Život kakav NE poznajemo
- b. Primena numeričkih metoda u astrobiologiji
- c. Dajsonovski SETI i astroinženjering
- d. Astrobiologija i studije budućnosti
- e. Astrobiologija u pop-kulturi
- f. Astrobiologija kao savremena “Velika sinteza”

# Osnovna literatura

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\* - postoji srpski/hrvatski prevod

## KNJIŽEVNOST (MALI IZBOR IZ VELIKOG BOGATSTVA!):

21. Herbert Dž. Vels, *Rat svetova*
22. Stanislav Lem, *Nepobedivi*
23. Stanislav Lem, *Glas gospodara*
24. Stanislav Lem, *Fijasko*
25. braća Strugacki, *Piknik kraj puta*
26. Artur Klark, *Sastanak sa Ramom*
27. Artur Klark, *Kraj detinjstva*
28. Isak Asimov, *Bogovi lično*
29. Vernon Vindž, *Plamen nad ponorom*
30. Karl Segan, *Kontakt*